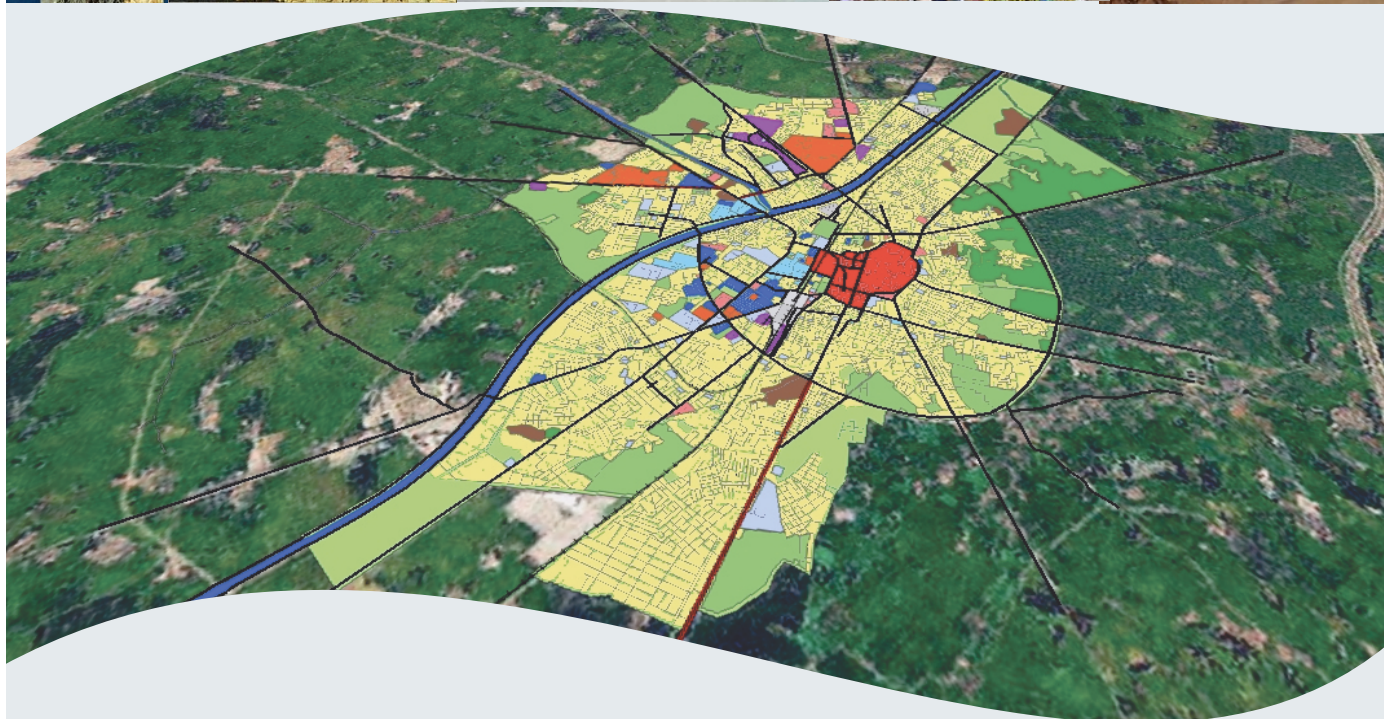


“URBAN DEVELOPMENT STRATEGY FOR LARKANA” (2013 - 2033)

WITH ADDENDUM-2018

ADB Loan No. 2499-PAK



FINAL REPORT

January, 2019

Volume- I

PART - I Situation Analysis

PART - II SWOT Analysis

PART - III Future Urban Development Strategy



EA Consulting Pvt Ltd
(Formerly Engineering Associates)

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- PART-I Situation Analysis**
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TABLE OF CONTENTS

LIST OF TABLES.....	vi
LIST OF ACRONYMS AND ABBREVIATIONS	vii
ACKNOWLEDGEMENT	ix
EXECUTIVE SUMMARY	x
PREAMBLE.....	xvi
PART-I.....	1
SITUATION ANALYSIS	1
1. INTRODUCTION	2
1.1 Objectives.....	2
1.2 Scope of Services	3
1.3 Methodology	4
1.4 Work Flow Chart	7
2. HISTORY	8
3. GEOGRAPHY	9
3.1 Larkana District.....	9
3.2 Physiography.....	10
3.3 Climate	11
3.4 Natural Features	13
4. CULTURE	15
4.1 Tribes	15
4.2 Religion.....	15
4.3 Languages	16
5. URBAN MORPHOLOGY	16
5.1 Larkana City.....	16
5.2 Morphogenesis	16
5.2.1 Old City Area	17
5.2.2 Central Quarters	17
5.2.3 New Planned Area.....	17
5.3 Expansion and Evolution of Urban Form.....	17
5.3.1 1975 – 2000.....	18
5.3.2 2000 – 2005.....	18
5.3.3 2005 – 2010.....	19
5.3.4 2010 – 2013.....	19
6. EXISTING LAND USE	21
6.1 Zoning Distribution	21
6.1.1 Zone A: Old City Area	22
6.1.2 Zone B: Central Quarters.....	22
6.1.3 Zone C: New Planned Area	23
6.2 Land Use Distribution	24
7. DEMOGRAPHY	26
7.1 Historical Growth Trends.....	26
7.2 Present Population.....	27
7.3 Socio-Economic Survey	28
7.4 Future Population	29
7.5 Population Structure.....	31
8. HOUSING	32
8.1 Housing Conditions.....	32
8.2 Housing Gap	33
8.3 Katchi Abadis.....	33
8.3.1 Status of the katchi Abadis located in Larkana City are as under:	34
9. ECONOMY	35
9.1 Agriculture	35
9.1.1 Crop Production.....	35
9.1.2 Irrigation Network.....	36
9.1.3 Land Utilization.....	36
9.1.4 Crop Position	37
9.1.5 Agricultural Inputs	40
9.2 Livestock.....	41

9.2.1	Statistics – Livestock	41
9.2.2	Veterinary Institution	41
9.3	Inland Fisheries	42
9.4	Industry	43
9.4.1	Existing Industrial Units.....	43
9.4.2	Small Scale Industrial Estate.....	44
9.4.3	Larkana Industrial Estate (LIE)	45
9.5	Trade and Commerce	48
9.5.1	Banks	48
9.5.2	Exports	48
9.6	Potential	49
9.6.1	Potential Production	49
9.6.2	Potential Work Force	50
10.	TRANSPORTATION NETWORK.....	51
10.1	National and Regional Linkages	51
10.1.1	Air Service	51
10.1.2	Railway.....	51
10.1.3	Roads.....	51
10.2	Local Network.....	52
10.2.1	Physical Condition of Road Infrastructure.....	52
10.2.2	Traffic Condition	53
10.2.3	Traffic Counts.....	53
10.2.4	Traffic Count	54
10.2.5	Volume/ Capacity Analysis.....	59
11.	UTILITY SERVICES	61
11.1	Water Supply.....	61
11.1.1	Quality of Ground Water.....	62
11.1.2	Need Assessment / Supply-Demand Gap	62
11.1.3	O&M Cost and Tariff System	62
11.2	Sewerage and Drainage.....	62
11.2.1	Existing Drainage Facilities.....	63
11.2.2	NSUSC Capacity	65
11.2.3	Need Assessment / Supply-Demand Gap	65
11.2.4	O&M Cost and Tariff System	66
11.3	Solid Waste	66
11.3.1	NSUSC Capacity	66
11.3.2	Hazardous Wastes	67
11.3.3	Need Assessment / Supply-Demand Gap	67
11.4	Fire Fighting System.....	67
11.5	Energy (Gas, Electric Power, Alternate Energy).....	67
11.5.1	Natural Gas	67
11.5.2	Electric Power	68
11.5.3	Need Assessment / Supply-Demand Gap	69
11.5.4	O&M Cost and Tariff System	69
11.5.5	Alternate Energy.....	69
12.	COMMUNITY FACILITIES.....	70
12.1	Education	70
12.1.1	Educational Attainment	70
12.1.2	Educational Institutions.....	71
12.1.3	Physical Conditions.....	74
12.1.4	Need Assessment.....	75
12.2	Health.....	75
12.2.1	Medical Facilities	75
12.2.2	Hospital / Bed Ratio	77
12.2.3	Preventive Health Care	78
12.2.4	Medical & Para Medical Staff	79
12.3	Recreational /Cultural Facilities.....	79
12.3.1	Public Parks	80
12.3.2	Clubs	81

12.3.3	Active Recreation / Play Ground	81
12.3.4	Entertainment	81
12.3.5	Tourism / Archaeology	82
12.4	Religious Facilities.....	82
13.	GOVERNANCE.....	82
14.	DISASTER RISKS IN LARKANA DISTRICT	85
14.1	History of Disasters.....	85
14.2	Floods/ Rains.....	85
14.2.1	The Flooding of 2010	86
14.2.2	The Monsoon Rains Flood of 2011.....	86
14.2.3	Impact of 2011 Floods on Livelihood & Agriculture	88
14.3	Cyclones/ Tsunamis	88
14.3.1	Hot Wind Twisters	88
14.4	Droughts.....	88
14.5	Earthquakes	89
14.5.1	History of Earthquakes.....	89
14.6	Accidental Fires	89
14.6.1	Minor Fire Accidents -2013	89
14.7	Communal Strifes	90
14.8	Epidemics.....	90
14.9	Environmental Degradation	91
14.9.1	Noise Pollution	91
14.9.2	Air pollution	91
14.9.3	Water Quality	92
14.10	Larkana Environmental Settings.....	93
14.10.1	The Indus River & Vulnerability of the District	93
14.10.2	Soil loss and Degradation.....	94
14.11	Relative Severity of Various Hazards in Larkana - Risk Assessment	95
PART-II.....		97
SWOT Analysis and Future Vision		97
15.	SWOT ANALYSIS MATRIX	98
16.	CONCLUSION OF SWOT ANALYSIS	113
16.1	Strengths and Weaknesses	113
16.1.1	Institutional Capacity	113
16.1.2	Economy.....	113
16.1.3	Regional Service Center.....	113
16.1.4	Governance	113
16.1.5	Private Participation.....	114
16.2	Opportunities and Threats	114
17.	VISION - 2033	115
PART-III.....		116
FUTURE URBAN DEVELOPMENT STRATEGY.....		116
18.	SPATIAL URBAN GROWTH	117
18.1	Objectives.....	118
19.	URBAN DEVELOPMENT STRATEGIES	120
19.1	Strategic Options for Urban Development	120
19.1.1	Densification	120
19.1.2	Decongestion	120
19.1.3	Densification cum Dispersal	120
20.	PROPOSED LARKANA URBAN DEVELOPMENT PLAN.....	121
20.1	Land Use Zoning.....	121
20.2	Development Control	121
20.3	Land Bank.....	122
21.	SECTOR WISE PROPOSED LONG TERM DEVELOPEMNT PLAN	123
21.1	Housing	123
21.2	Katchi Abadis.....	123
21.3	Transportation	124
21.3.1	Road Network	124
21.3.2	Regional Connections.....	125

21.4	Water Supply.....	127
21.5	Sewerage and Drainage.....	128
21.6	Solid Waste Disposal	130
21.7	Fire Brigade Station	131
21.8	Energy (Gas, Electric Power, Alternate Energy).....	131
21.9	Health.....	131
21.10	Education	132
21.10.1	Higher Education.....	132
21.10.2	Vocational Training	132
21.11	Recreation	133
21.12	Urban Governance	133

LIST OF TABLES

	Page No.
TABLE-L1: Existing UC wise Densities in Larkana	21
TABLE-L2: Landuse Area wise percentage of Larkana City	24
TABLE-D1: Historical intercensus Growth Rates	26
TABLE-D2: Estimated present Population of Larkana City	27
TABLE-D3: Localities covered by Socio-Economic Survey	28
TABLE-D4: Larkana Projected Population	30
TABLE-D5: Larkana Population Structure	31
TABLE-H1: Estimated Present Housing Gap in Larkana City	33
TABLE-H2: Katchi Abadies	34
TABLE-E1: Crop Production	35
TABLE-E2: Land Utilization of Larkana, Sindh 2008-09 to 2009-10	36
TABLE-E3: Area And Production of Crops in Larkana District 2006-07 to 2009-10	37
TABLE-E4: Changing Trends in Crops Cultivation and Land Utilization	39
TABLE-E5: Sale of Fertilizer (Indigenous And Imported) in Larkana District, 2006-07 to 2009-10	40
TABLE-E6: Number of Livestock in Larkana District	41
TABLE-E7: Number of Hospitals, Dispensaries and Veterinary Centres in Larkana District	42
TABLE-E8: Inland Fisheries Statistics of Larkana District 1997-2010	42
TABLE-E9: Major Industry Group for Census of Manufacturing Industries (C.M.I) in Larkana 2005-06	43
TABLE-E10: Industrial Units and Employment Situation in Larkana District	44
TABLE-E11: Employment Status	50
TABLE-T1: List of Intersections Covered By Traffic Counts	53
TABLE-T2: Traffic Volume Capacity Ratio	59
TABLE-U1: Disposal Stations	64
TABLE-U2: Existing Gas Pipelines	68
TABLE-U3: Existing Grid Stations	69
TABLE-C1: Educational Attainment	70
TABLE-C2: Educational Statistics of Larkana District	71
TABLE-C3: List of Government School In Larkana City (UC-1 To UC-11)	72
TABLE-C4: Physical Conditions of Government Schools in Larkana City	74
TABLE-C5: Present Need Assessment of Larkana City	75
TABLE-C6: Number of Beds in Public Hospitals of Larkana City	77
TABLE-C7: Chandka Medical College and Affiliated Facilities	79
TABLE-C8: Public Parks	80
TABLE- G1: LMC Abstract of Income (Rs. Millions)	84
TABLE- G2: LMC Abstract of Expenditure (Rs. Millions)	84
TABLE- DRM 1: Hazard Matrix of District	85
TABLE- DRM 2: Flooding of 2010	86
TABLE- DRM 3: Summary of Losses and Damages	87
TABLE- DRM 4: Summary of Losses and Damages in Floods/Rains 2011	88
TABLE- DRM 5: History of Earthquakes	89
TABLE- DRM 6: Epidemics effected person Statistics	90
TABLE- DRM 7: Vulnerable areas of the District in Floods / Rains 2011	91
TABLE- DRM 8: Protective Bunds and Embankments	92
TABLE- DRM 9: Severity of Various Hazards in Larkana	92
TABLE- DRM 10: Vulnerable Areas of the District	93
TABLE- DRM 11: Protective Bunds and Embankments	94
TABLE- DRM 12: Severity of Various Hazards in Larkana	95

LIST OF ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
ADCs	Animal Driven Carts
AGR	Annual Growth Rate
AIDS	Acquired Immune Deficiency Syndrome
BHU	Basic Health Unit
BRT	Bus Rapid Transit
CAR	Central Asian Republics
CBD	Central Business District
CBO	Community Based Organizations
CCB	Citizen Community Board
CMC	Chandka Medical College
CSB	Community Seed Bank
DDMA	District Disaster Management Authority
DDMAL	District Disaster Management Authority Larkana
DDRM	District Disaster Risk Management
DDRMCO	District Disaster Risk Management Coordination Officer
DDRO	Deputy District Revenue Office
DEOC	District Emergency Operation Center
DGA	District Government Authority
DMC	District Municipal Corporations
DRG	District Recovery Group
DRM	Disaster Risk Management
DRM&R	Disaster Risk Management & Reduction
DRR	Disaster Risk Reduction
DUP&SP	Directorate of Urban Policy and Strategic Planning
EDO	Executive District Officer
FAR	Floor Area Ratio
FWO	Frontier Works Organization
GBHS	Government Boys High School
GBHSS	Government Boys Higher Secondary School
GBLSS	Government Boys Lower Secondary School
GBPS	Government Boys Primary School
GGHS	Government Girls High School
GGHSS	Government Girls Higher Secondary School
GGLSS	Government Girls Lower Secondary School
GGPS	Government Girls Primary School
GIS	Geographic Information System
GO	Government Organizations
GOP	Government of Pakistan
GOS	Government of Sindh
HH	Household
HIV	Human Immunodeficiency Virus
HRDD	Human Resources Development Department
HVs	Heavy Vehicles
INGO	International Non Governmental Organizations
KV	Kilo Vault
LDP 2010	Larkana Development Plan 2010

Conti.....



LIE	Larkana Industrial Estate
LINAR	Larkana Institute of Nuclear Medicine and Radiotherapy
LMC	Larkana Metropolitan Corporation
LVs	Light Vehicles
M&R	Maintenance and Repairing
MJD	Moen-Jo-Daro
MPA	Member Provincial Assembly
MW	Mega Watt
NDMA	National Disaster Management Authority
NGO	Non-Government Organization
NRM	National Reference Manual
NSUSC	North Sindh Urban Services Corporation
NTCL	Northern Transport Company Limited
O&M	Operation and Maintenance
OPD	Out Patient Department
P&D	Planning & Development Department
PDMA	Provisional Disaster Management Authority
PE	Polyethylene
PHED	Public Health Engineering Department
PMTs	Pole Mounted Transformers
POL	Petroleum Oil Lubricant
PPM	Parts per Million
PTCL	Pakistan Telecommunication Company Limited
SAR	Situation Analysis Report
SBCA	Sindh Building Control Authority
SCARP	Salinity Control & Reclamation Programme
SCIP	Sindh Cities Improvement Program
SEPCO	Sindh Electric Power Construction Organization
SLGO	Sindh Local Government Ordinance
SMBBMU	Shaheed Mohtarma Benazir Bhutto Medical University
SMVs,	Slow Moving Vehicles
SOP	Standard Operation Procedures
SPDC	Sindh Province Data Collection
SZABIST	Shaheed Zulfiqar Ali Bhutto Institute of Science and Technology
SZWHL	Shaikh Zaid Women Hospital Larkana
TDS	Total Dissolved Solids
TMA	Taluka Municipal Administration
TNA	Training Needs Assessment
UC	Union Council
UN	United Nations
VIP	Very Important People
W&S	Work & Services Department
WAPDA	Water and Power Development Authority
WB	World Bank
WHO	World Health Organization

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8. Mr. Khalil-ur-Rehman (Zonal Manager SSGC Larkana)
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EXECUTIVE SUMMARY

Introduction:

Urban centres are now considered as engines of economic growth and there is a growing realization the world over, that appropriate investment in urban infrastructure and services accelerates economic development in the surrounding region. The economic interdependence between semi-urban economy and rural consumers; and rural producers and urban markets, has often been stronger in secondary cities. This underlines their important potential role in economic development of the region.

In order to realize the development potential of urban Sindh, Government of Sindh has initiated Secondary Cities Improvement Programme, with the assistance of Asian Development Bank. The office of Directorate of Urban Policy and Strategic Planning (DUP&SP) in the Planning and Development Department has been established to carry out the preparation of Urban Growth Strategy and Development Plans of secondary cities in Sindh, so that public investment decisions in socio-economic and physical infrastructure are made on a rational basis. In this regard, the cities of Larkana and Sukkur have been identified as the priority cities for the preparation of Urban Development Strategy. The time horizon of the Urban Development Strategy is next 20 years i.e. 2013-2033. M/s. EA Consulting (Pvt.) Ltd. has been awarded the project for the “Preparation of Urban Development Strategy for Larkana”.

The key objective of the Consultancy Service is to prepare Development Strategy for Larkana; following the work done under many packages of Sindh Cities Improvement Program (SCIP). The Task 4 of SCIP-03 package included the development of:

- Guidelines for Spatial Planning
- Guideline for Zoning
- Local Economic Development Strategies
- Urban Information and GIS Database for Secondary Cities of Sindh
- Case Studies on Spatial Plans and Local Economic Strategies for Larkana

The Consultants carried out data collection through secondary sources as well as through field studies followed by data analysis, need assessment and preparation of strategies as per TOR. The following reports have been submitted to the Client as required by the consultancy agreement:

- Inception Report
- Existing Situation Analysis Report
- Digital Base Map Report
- SWOT Analysis Report
- Draft Final Reports with GIS Base Maps and:
 - Economic Growth Strategy
 - Disaster Risk Management Plan Report
 - Implementation Report

- Final Report with GIS Base Maps

This submission is the “Final Report” modified in the light of Stakeholder’s comments received during two consultative workshops conducted in Larkana and subsequent meetings of the Consultants with Deputy Commissioner Larkana and his technical team.¹

➤ **Population**

Larkana, situated 450 kilometers from Karachi, is now spread over about 25 square kilometers and divided into eleven union councils under Larkana Municipal Corporation. Larkana’s population was recorded as 14,543 in 1901 which grew to 270,283 in 1998. Based on the past trends, the current 2013 population is estimated as 460,000, approximately. The projected population in 2033 is estimated as 854,000, at an annual growth rate of 3.14% (the average growth rate of Larkana District between 1981 and 1998). The need assessment for various sectors has been carried out on the basis of the above figure.

➤ **Housing**

As per 1998 census, Larkana municipal area had household size of 7.37 persons and a total housing stock of 36,693. Only half of them were categorized as pacca houses. Consultant’s household survey provided insight into the prevailing housing conditions (described in detail in the report) and indicated an increase in the household size to 8.06 signifying shortage of housing supply. The present (2013) housing gap is estimated as 5,300 housing units, approximately. Viewed in the light of unbuilt plots available in developed area, the actual problem lies with the housing supply for the lowest income group which forms the informal sector. The total additional demand for the housing by 2033 is estimated as 53,000 housing units with land requirement of 3,600 acres. The vacant land available in various union councils is sufficient to meet this housing demand and there should be no need to use the agricultural land outside the urban UCs boundaries until 2033. The urban development strategy suggests provision of housing for lower middle income to high income groups by private developers under strict compliance of SBCA regulations, with outer infrastructure to be provided by the public sector.

Katchi Abadis

The Katchi Abadis are manifestation of formal housing sector’s failure to meet the needs of the lowest income group. At present there are twenty Katchi Abadis designated for regularization covering a total area of 431 acres containing 2,732 housing units and 28,600 population. Besides, there are several undocumented illegal Katchi Abadis which cannot be regularized as they are either in disaster prone areas or on the land owned by private owners or government agencies. The lowest income group will not be able to afford housing provided by the formal sector. It is suggested that land allocation be provided for incremental housing in UC-1 and UC-2 (near industrial area); and in UC-11 for the “poorest of the poor” groups.

¹ For detail please refer to Annexure- D Meetings and Workshops

➤ **Economy:**

Agriculture

Agriculture is the backbone of Larkana's economy with extensive cultivated areas in Larkana District and significant production of rice, wheat, oilseeds, guava and tomato. Network of four canals (Rice Canal, Dadu Canal, Warah Canal and Kirthar Canal) irrigates the cultivated areas with small contribution by tube wells. The main problems in the accelerated growth of agriculture sector are: non availability of certified late variety seeds; low per acre yield; inadequate agricultural extension services; lack of marketing mechanism and strategic storages for price stability. The development strategy suggests increasing per acre yield by sufficient supply of inputs; ensuring better prices to growers; provision of warehouses/cold storages and processing of perishables (guava / tomato) at cottage industry level.

Industry

Larkana has considerable untapped potential of agro based industries including rice husking, oil extractions, food processing, ice making and light industries supporting agro industries. The main constraint is provision of developed land for industries, lack of incentives including financing and marketing network including direct export channels.

➤ **Infrastructure:**

Transportation

The city is well connected with important cities through land and air routes. But in the city traffic conditions are unsatisfactory due to absence of traffic management system; encroachments on roads; unauthorized qingqis parking and animal driven carts. The proposed strategy suggests removal of encroachments from town center and bazaars, created by the shopkeepers and hawkers, specifically on Bunder Road, Pakistan Chowk, Lahori Muhalla /V.I.P Road, Miro Khan Chowk Road, Nishtar Road and station Road; improvement of main CBD roads/ provide alternative roads to reduce traffic congestions; relocation of vegetable and fish markets from the central city areas to the newly developed area; removal of illegal qingqi's stands; feasibility study of BRT around the old city; removal of illegal taxi stands and heavy vehicles stands from the CBD and main commercial areas, and relocate them near new bus terminal; establishment of charged parking system for commercial use vehicles, mini buses, qingqis and coaches etc; removal of truck stations from CBD area to new bus stand area.

Utilities

The whole of the city is a flat topography. The Rice Canal and Railway Track pass through the centre of the town in such a way that continuation of utility lines across the canal is difficult. Sewerage, drainage, and solid waste disposal are the most serious problems of the city. The government has created a special company North Sindh Urban Services Corporation (NSUSC) to manage these utilities.

Water Supply

At present Larkana has no piped water supply system. Most of the city dwellers rely on shallow ground water accessed through tube-wells or shallow wells or even hand pumps. The TDS level ranges between 1500 to 2200 mg/liter, which means water is only marginally potable. In next 20 years, water demand will rise from 13.8 million gallons per day (30 gallons per capita per day) at present to 34.2 million gallons per day (40 gallons per capita per day) by 2033.

In the long term, piped water supply system for 100% population by 2033 will be the target. The strategy would be to install localized network in the planned housing schemes first and gradually cover the whole population in five year plans. The major source of supply will remain the underground water, supplied through house connections with necessary treatment. The overall water demand will be reduced by reuse of treated effluent at least for horticulture and other water conservation measures. It is suggested to introduce Tariff System for water supply through Water Metering (first for water usage above marginal consumption then in long run, for all users).

Sewerage and Drainage

Sewerage and Drainage is Larkana's biggest problem. Larkana City is served by a combination of open drains, sewers and covered collector drains. At present there are 39 pumping / disposal stations in the city, out of which 34 are in full operation. Most of pumping stations discharge (raw) waste water to the Rice Canal or SCARP drains. With the urbanization, the waste water discharge will increase from 9.7 million gallons per day at present to 23.9 million gallons per day by 2033. There is no conservancy tax collected from the users.

The Consultant's have recommended that "Larkana Drainage Master Plan" prepared should be implemented in phases only as a short term solution. In the long term, a detailed topographic survey of the city should be undertaken and detailed sewerage plan may be prepared according to accepted industry standards.

The proposed future strategy includes; combined system of sewerage and drainage recommended with phase-wise replacement of open drains with covered sewers of PE pipes. Decentralized wastewater treatment plants are suggested to reduce pumping and infrastructure cost if Rice canal or railway line is to be crossed. The treated wastewater could be used for agricultural purposes. This could be achieved through waste stabilization ponds but the reuse of effluent is not recommended for the crops which can be eaten raw.

Solid Waste Disposal

LMC had three dumping sites, which have now been fully filled. Most of the garbage finds its way back into the drains and chokes them. The hazardous waste generated in the city includes hospital waste and some oil spills from the mechanical workshops. The present incinerators

are of insufficient capacity, and with outdated technology. It is estimated that at present city generates 230 tons solid waste per day. It requires 24 acres landfill site to accommodate disposal in four layers at present. While in future, there is a need of 44 acres landfill site to accommodate estimated 420 tons disposal in four layers over a period of 20 years. Sanitary landfill site is required to be allocated away from any residential area and should consider wind direction. In the medium term, the collection and disposal of solid waste may be outsourced to specialized waste management companies who would collect and recycle waste at a profit. In the long term introduce 4R Solid Waste Management System (reduce-reuse-recycle-reject). It is suggested to make NSUSC self sufficient and to acquire the required additional Sanitary Workers as per requirements.

Energy:

Power supply to Larkana is through WAPDA. The distribution system will need to be extended to the new areas absorbing future urban growth. The gas supply is by SSGC who have laid their own network. In the current national energy crisis electricity and gas are facing shortages but the remedy for them is out of scope of this study. Greater emphasis should be laid on alternate energy like solar, wind or bio gas. Solar energy should be immediately applied for street lighting and tube wells.

➤ **Community Facilities:**

Education

Larkana is a regional centre for higher education covering the entire north Sindh. People from all over Sindh are attracted and migrate to Larkana for education purposes. However at primary and up to secondary level there is shortage of schools and the spatial distribution is lop-sided due to government policy to construct schools only where land is available free of cost. This policy needs to be changed and the cost of land, where necessary, should be included in the schools project cost. The condition of existing schools building is rather alarming as only one third of buildings are in satisfactory condition. For student population up to 2033, 4,900 classrooms are required based on 100% enrolment of male and female students.

Health

Larkana is also regional centre for tertiary health care and patients even from Baluchistan are attracted. However, the primary and secondary health care is not evenly distributed. Chandka Medical College (SMBBMU) is the prime institution supported a number of Government and private facilities. Chandka Hospital requires extension in Paeds Surgery and a separate Urology Centre to meet the existing demand. At present, there are 1,444 hospital beds available which would have been sufficient for the city population but as the catchment area is very large, there is a waiting time of two to three weeks for bed availability. Keeping in view the future district catchment population, 4,300 beds are required to be added in several

hospitals including Taluka HQ hospitals. Incinerators for hospital waste disposal should be installed in all hospitals.

Recreation

Larkana has several parks, gardens and sports stadiums. Several parks and public open spaces are required in the new areas to meet the requirements of the growing population. Larkana badly needs a central garden, zoo, amusement park and recreational facilities. A large area for this is proposed on the Airport Road near the Airport to be developed in collaboration with the private sector.

➤ **Urban Governance:**

Governance at its best for Larkana can be achieved by to properly training of the elected representatives, and the form of their direction towards understanding their role as originator of improvement, political input for the solutions of the residential cohesion and their feel to do something in favor of public good to have their trust and to make people feel better with their governance, increasing the capacity of Municipal corporation and Development Authority staff for the requires the need to do their work in best formation, above all the funds transferring and totally presented on the allotted projects and there check and balance should be in prove form to take up the local level governance for sustainability.

A little planning with good governance can be for more effective than good planning with poor governance. The urban governance in Larkana is at present in a lucid stage due to the absence of local bodies. The Sindh Local Government Act 2013 has been enacted but the elections are still to be held. The District Administration in the meantime has greater responsibility for the urban governance as the Deputy Commissioner is also the head of Larkana Municipal Corporation and Larkana Development Authority.

The local representatives need to be trained to understand their responsibilities and play an active role in the development of the city as per Development Strategy. Financial sustainability of the LMC is also a major issue but it seems that for some reason, LMC has not attempted to generate financial resources as provided in the Sindh Local Bodies Act.

PREAMBLE

The planning concept for preparation of a suitable urban development strategy for Larkana stemmed over a period of time from the realization that urban centers are hubs for economic growth and they also act as service centers for surrounding areas. Seen in global and regional context there is rapid increase in urbanization across countries in Asia where 20% of population lived in cities during 1960s. This proportion increased to 30% in 2003 and projected to go up to 55% by 2030.² If cities are to be transformed into ‘engines of growth’, they need reliable power supplies for industry, agriculture, commerce, manufacturing units, potable water supplies to the residents, efficient sewerage & drainage system to dispose of waste & gray water as well as to have adequate transport facilities for mobility of individuals and goods without polluting the city environments.³ Above all cities need sufficient serviced land for housing the additional population and infrastructure development.

In Pakistan, according to national population census, 25% people lived in urban areas during 1972 and this figure had risen quickly to 33% by 1998 and would be 50% by 2050. Sindh province is comparatively more urbanized than rest of Pakistan. It had 40% population living in urban localities at the time of 1972 census which increased to 49% in 1998 population census. In view of fast growth of urban localities both in Pakistan and Asia, it requires a focused attention to evolve urban development strategy so that the socio economic issues emerging in cities could be resolved. Cities are progressively becoming denser, expanding in unplanned & unorganized manner lacking in health, education, infrastructure, housing and transport facilities. As a consequence of lopsided city development, infrastructure has remained badly lacking and the situation is worsening at a fast rate.

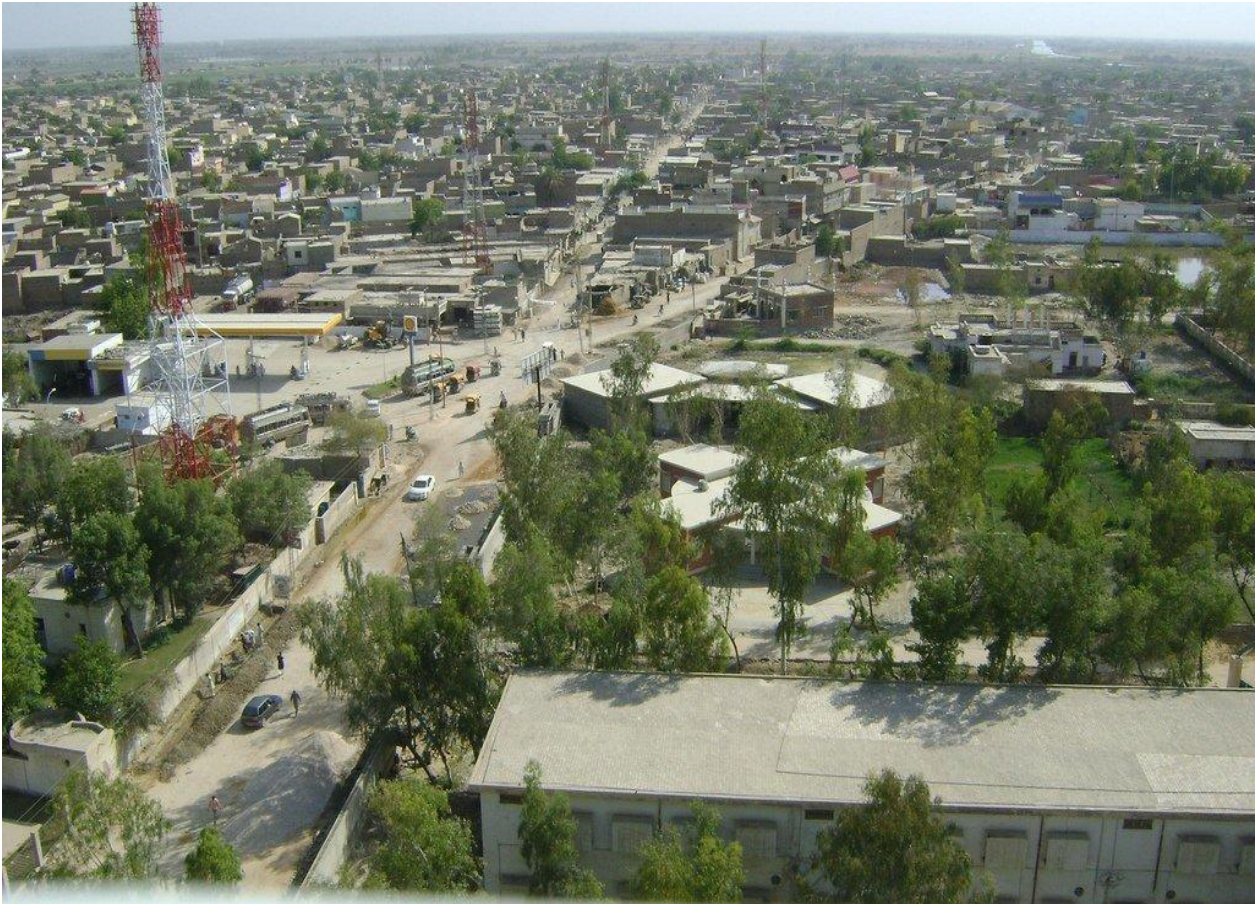
In many mega cities of Pakistan, the built up area has sprawled into surrounding regions engulfing villages and small towns to create extended metropolitan region. Therefore, any effort for urbanizing Pakistan and/or Sindh, especially urban municipalities, would require a fresh look and dedicated efforts to evolve local or area based development strategy. When people are concentrated in a well defined area (that is an “urban locality”) significant socio-economic changes may occur which would demand planned efforts to provide friendly environment for their growth. Some such changes would be as follows:

- ✓ A shift from agricultural production to industry, crafts, commerce, manufacturing, or informal services
- ✓ Separation of workplace from residence and thus weakening of family & community ties, and
- ✓ Monetization of economic transactions promoting financial and business services such as banking, insurance, and commercial services

² City Cluster Development Report by ADB, August 2008

³ Tiwari, Geetam 2002, Urban Transport for Growing Cities: High Capacity Bus Systems, New Delhi, Macmillan

PART-I



SITUATION ANALYSIS

1. INTRODUCTION

Urban centres are now considered as engines of economic growth and there is a growing realization the world over, that appropriate investment in urban infrastructure and services accelerates economic development in the surrounding region. Governments and concerned public agencies in developing world now have unanimity of opinion that, if delivered through appropriate and timely applied planning tools, sustainability can only be achieved by establishing robust urban economies. It is understood that meaningful overall development of Sindh will be better achieved by prioritizing and investing in the semi-urban and agro-based economies of its secondary cities.

The economic interdependence between semi-urban economy and rural consumers; and rural producers and urban markets, has often been stronger in secondary cities. This underlines their important potential role in economic development of the region. Therefore, the potential of providing services needed to achieve many of sustainability based future urban growth goals, is located in revitalization and regeneration of intermediate urban centres and agro-based economies.

In order to realize the development potential of urban Sindh, Government of Sindh has initiated Secondary Cities Improvement Programme, with the assistance of SCIP-04 and SCIP-03 and funding of Asian Development Bank. The SCIP-04 and SCIP-03 provides framework to strategy development for sustainable socio economic and infrastructure development of Larkana city. These strategic guidelines provide baseline information for action plans, short term, long term and sectoral plans.

The office of Directorate of Urban Policy and Strategic Planning (DUP&SP) in the Planning and Development Department has been established to carry out the preparation of Urban Growth Strategy and Development Plans, so that public investment decisions in socio-economic and physical infrastructure are made on a rational basis. In this regard, the cities of Larkana and Sukkur have been identified as the priority cities for the preparation of Urban Development Strategy. The time horizon of the Urban Development Strategy is next 20 years i.e. 2013-2033. M/s EA Consulting (Pvt). Ltd., has been awarded the project for the “Preparation of Urban Development Strategy for Larkana”.

1.1 Objectives

Majority of secondary cities of Sindh have experienced over-population and rapid urbanization over the last few decades with little or no complimentary investment in the urban services. Thus the potential of demographic change has not been utilized as the secondary cities had no planning or preparation to provide basic needs for the bulging population nor they had the institutional capacity to create opportunities to engage the young population in positive pursuits to support and enlarge the economic base. The investment in secondary cities would be instrumental in poverty reductions as they provide local markets for agricultural products, offer essential employment and urban services to a large section of population.

Another important factor that drives the need for immediate urban policy review to invest and prioritize urban Sindh, is the recent plunges of economy of primary cities of Sindh, due to deteriorating law and orders situation the province has faced in the recent past. Compared to this, the successful revival of local economy in surrounding regions, like Punjab, has also left a challenging quest for planning agencies of Sindh, to revise their urban policy framework such that it can sustain the declining economy of the region and reduce economic disparities.

The key objective of the Consultancy Service is to prepare Development Strategy for Larkana; following the work done under many packages of Sindh Cities Improvement Program (SCIP).

The Task 4 of SCIP-03 package⁴ included the development of:

- Guidelines for Spatial Planning
- Guideline for Zoning
- Local Economic Development Strategies
- Urban Information and GIS Database for Secondary Cities of Sindh
- Case Studies on Spatial Plans and Local Economic Strategies for Larkana⁵

The Consultants have reviewed these documents and have benefited greatly from various Guidelines and GIS data base.

The Development Strategy prepared through this assignment will provide a framework:

- To guide the sustainable socio-economic and infrastructure development of the city and environs.
- Propose a long term development plan
- Prepare sectoral development plans
- Provide short term action plans for public investment
- Suggest a sustainable local governance structure
- Provide disaster risk assessment and management plan

1.2 Scope of Services

As per the Terms of Reference, the Consultants were required to carry out the following tasks:

- Review of Past Trends, Development Strategies & Prevalent Conditions:
 1. Population Profile and Socio-Economic Indicators
 2. Expansion and Evolution of Urban Form
 3. Housing Conditions
 4. Social Amenities
 5. Basic Utilities
 6. Infrastructure
 7. Environmental Setting & Natural Disaster

⁴ Task 4 comprises Support Urban Policy and Strategic Planning Unit on implementation of urban planning initiatives and reforms

⁵ Bellosillo, R.V.,2012, "Guidelines for the Preparation of Spatial Plans – SCIP3 Program Management, Project Preparation and Implementation support for Planning and Development Department", Directorate of Urban Policy & Strategic Planning, Government of Sindh, Pakistan, 2012

8. Economic Development

- Preparation of Digital Base Maps
- SWOT Analysis
- Carving out a Vision for Future
- Preparation of a Development Plan
 1. Long Term Plan
 2. Determination of Growth Scenarios
 3. Economic Development Plan
 4. Short Term Action Plan for Priority Infrastructure Development
 5. Disaster Management Plan
- Implementation Strategy

1.3 Methodology

➤ **Review of Past Trends, Development Strategies & Prevalent Conditions**

The Consultants collected data from primary as well as secondary sources. For the primary source data, a sample socio-economic survey was also carried out to get a snap-shot of current demographic, incomes and housing picture, which will be compared with historical data available through secondary sources to indicate trends. There is no authentic data on demography after 1998 Census, which creates a problem for establishing reliable present population as well as projecting future population. The secondary source data collected from various sources has been analyzed and used for setting up baseline indicators in housing, social amenities, (education, health, recreation, etc.), basic utilities (water supply, sewerage, drainage, energy, etc.), infrastructure (roads and streets).

The historical data on economic development and public sector investment and intervention schemes have been considered to examine future trends and projection of future population under various assumptions. This data has then been used to identify existing gaps in urban services delivery and needs assessment. The whole of Larkana area is prone to periodical floods; therefore risk assessment prior to proposing future strategies has been carried out. The work done under previous SCIP projects has been carefully reviewed and critically evaluated for its relevance to current situation and in the development of future strategies.

➤ **Preparation of Digital Base Map**

The Client has forwarded satellite imagery and GIS analysis carried out by NSUSC. The imagery is two years old and the GIS analysis provides limited number of layers. The Consultants have updated the imagery and added additional layers for the finalization of Base Map.

It has been agreed that, the Town's boundary delimitation will presently follow the boundaries of eleven Urban Union Councils, shown on the map received from the District Administration. In the later stages, if required, the area may be readjusted in relation to land requirements for future urban growth.

➤ **SWOT Analysis**

The basic information collected through the primary and secondary sources has been analyzed to assess the Strength, Weaknesses, Opportunities and Threats of various sectors. The SWOT analysis will help in the selection of alternate strategies relating to socio-economic development, urban development and infrastructure development.

➤ **Carving out a Vision for Future**

The Vision for Future is a statement of how the stakeholders and local population would view their town in next twenty years. The initial statement comes from SWOT analysis regarding what the town should aim to achieve in the next twenty years. This however, would be only a pragmatic vision based on the professional and technical evaluation and would need to be shared with the stakeholder to include their aspirations. The Consultants however, had several discussions with local residents, politicians, stakeholders, decision makers and focal groups, to get an insight of their expectations and aspirations for their city. The vision of the future is therefore finally adjusted such as to meet the expectations of the residents and stakeholders.

➤ **Preparation of a Development Strategy**

The preparation of the Development Strategy follows the following logical sequence:

- a) Developing alternate growth scenarios based on the analysis of current situation, past trends, and SWOT analysis. This will include spatial growth scenario, sectoral growth scenario and urban development scenario
- b) Discussion on the pros and cons of options and agreement on the final options
- c) Preparation of spatial/zoning plan
- d) Definition of strategies to reach the agreed vision
- e) Preparation of Draft Strategic Development Plan Report
- f) Preparation of Draft Economic Development Plan Report
- g) Preparation of Draft Priority Projects Report
- h) Preparation of Draft Disaster Management Plan
- i) Preparation and Discussion with the Client and Stakeholders on the Draft Reports and recording of their Comments/Recommendations
- j) Amendments in the Reports and submission of Final Plan

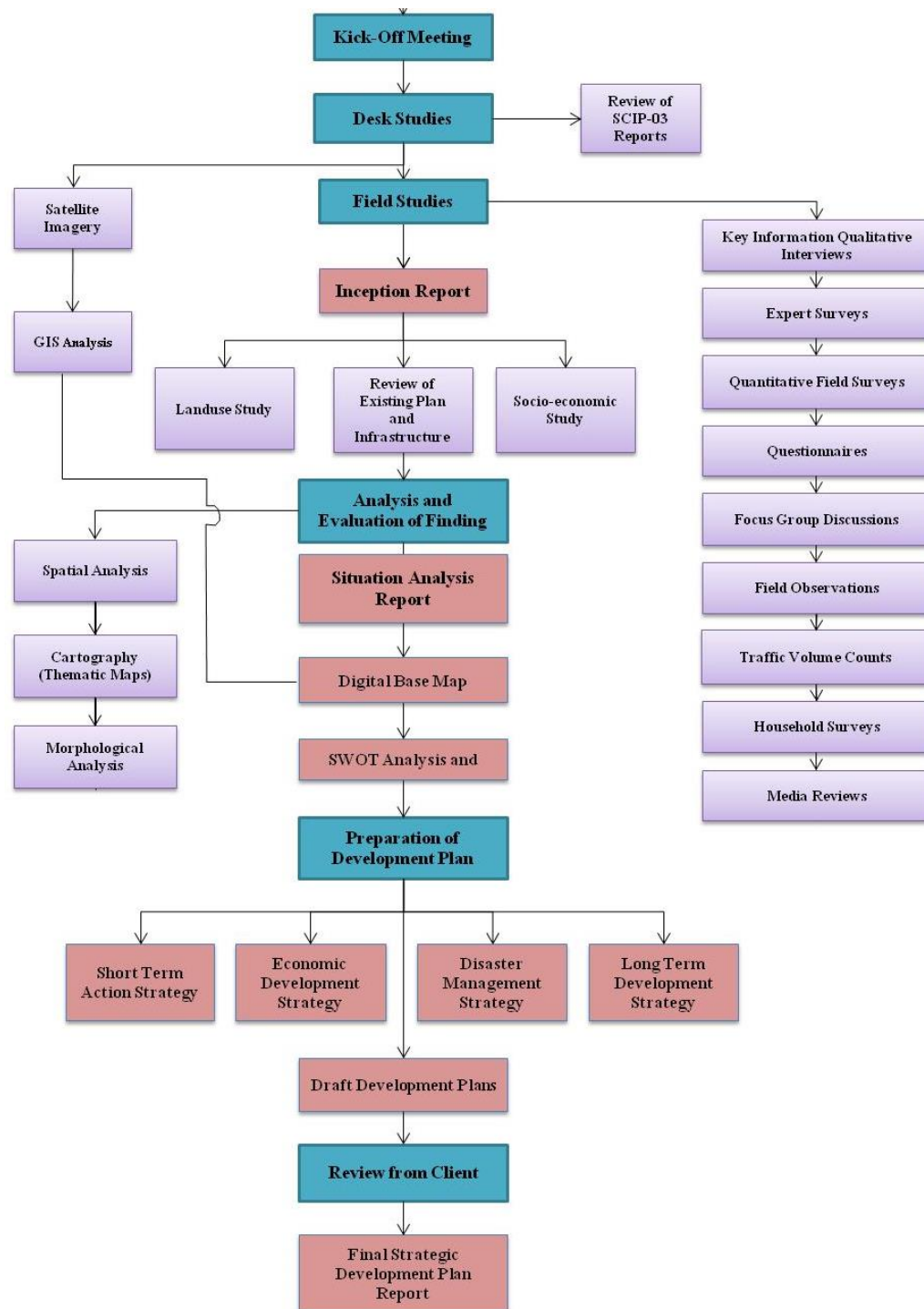
➤ **Implementation Strategy**

The Implementation Strategy will have the following considerations:

- a. Institutional arrangement to coordinate the development activities amongst multiple organizations/authorities actively involved in the city
- b. Increasing capacity of the organizations responsible of the development of the city
- c. Improving local governance
- d. Improving sustainability of the Urban Development

It may be noted that Larkana and for that matter the whole of Sindh has no local government structure by the time this report was finalized. Although the Sindh Local Bodies Act 2013 has been passed by the Provincial Assembly in December 2013, but elections to the local bodies are yet to be held after, which the fully empowered local bodies will be established. At present the Deputy Commissioner, heads various nation building departments at the district level and is in the best position to coordinate all development activities in the district including Larkana City.

1.4 Work Flow Chart



2. HISTORY

History of Larkana is as old as the Indus Valley Civilization of Moen-Jo Daro that dates back to about four thousand years i.e. around 2500 B.C. The scientific and technological advancement of people of that era was unparalleled, as is evident from the archeological remains found in Moen-Jo-Daro (meaning city of dead in local language). Larkana was renowned for production of cloth in those days and its product was exported from Moen-Jo-Daro to the outside world through River Indus and Arabian Sea even upto Egypt, where it was used in mummification.



The early history suggests that Aryans came to Sindh in around 2234 B.C. and settled in different parts of Sindh including Larkana area, as the indications of Aryan presence are found in nearby Jhokar-jo-Daro. Alexander the Great had passed through this area around 330 B.C. In the early middle ages, the Sultan Shahabuddin Ghorī occupied Multan and Bakhar (present day Sukkur); at that time Larkana was part of Bakhar. This was followed by Soomra, Samma and Chandia rule. Chandia gained significant strength and the place came to be known as Chandka. In the 16th Century Kalhora started their rule in Sindh and dug canal Ghaarwah. Larkana was founded around this time and was a small hamlet at the bank of Ghaarwah, by a tribe named Lariks and thus the present day Larkana came into being. Larkana Town has grown gradually on the right bank of Ghaarwah. The present mohallah Kafilah Sarai in the Larkana Town was the main ferry from where trade was carried out through the canal.

During British rule, Larkana was known as the Garden of Sindh and was one of the most important and rich markets of Sindh. In those days there was a Sindhi proverb “Je Hujae Nano ta Ghum Larkano”, which means “if you have money then visit Larkana”. During British Rule, Larkana became a District in 1901. When in 1988, Larkana was notified as Division, it gained additional significance as administrative and service centre of a large region of north Sindh.

3. GEOGRAPHY

3.1 Larkana District

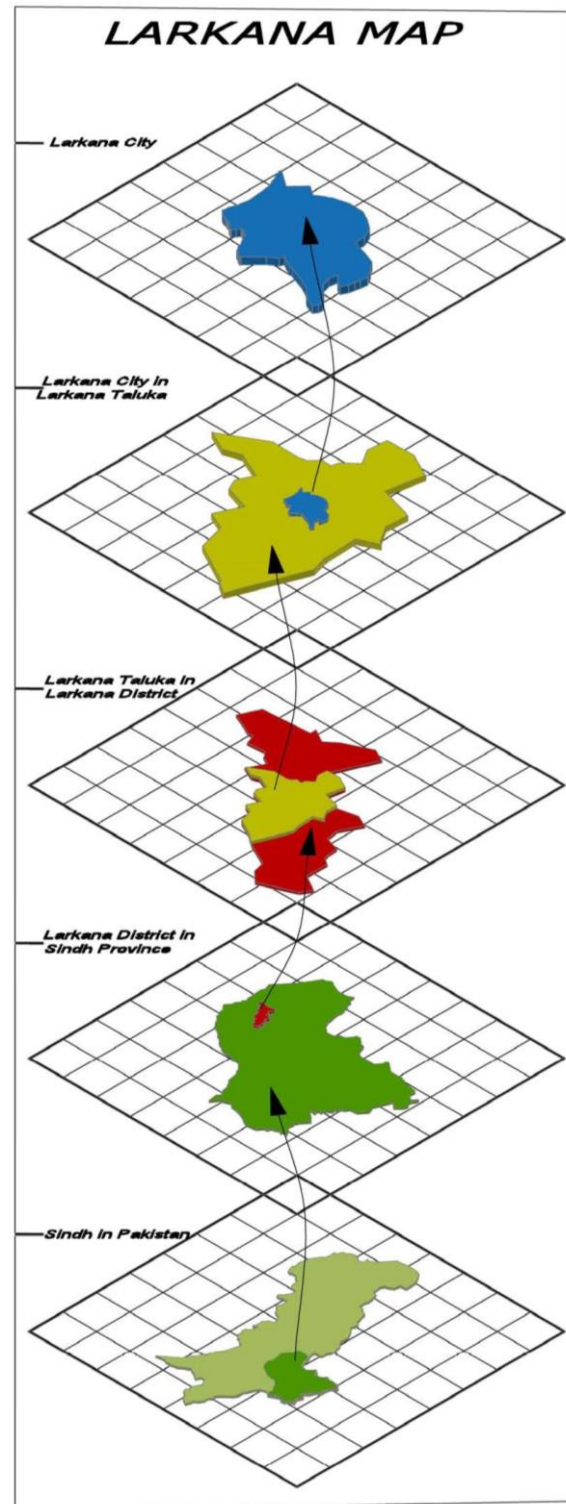
Larkana District is located from 27°-08' to 28° North latitudes and 67°-12' to 68°-24' East longitudes, in the North-West of Sindh province, Pakistan.

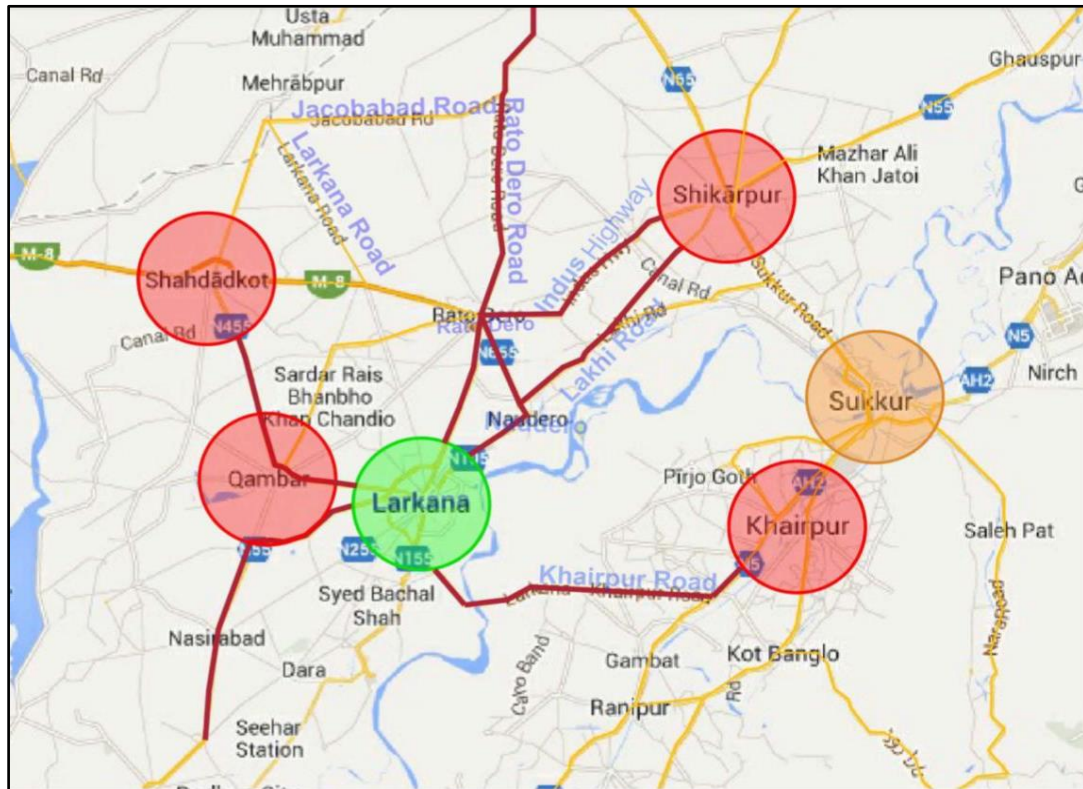
The District is bounded in the north by Jacobabad and Shikarpur Districts, east by Khairpur District, south by Nushero Feroze and Dadu District and west by Qamber-Shahdadkot District.

As per 1998 census, the total geographical area of Larkana District was 7,423 sq.k.m. The district consisted of seven talukas namely; Larkana Ratodero, ShahdadKot, Warah, Qambar, Miro Khan and Dokri. There were one Municipal Corporation, four Municipal Committees and six Town committees.

In 2005, the Government of Sindh bifurcated the district, forming a new district called Qamber-Shahdadkot. Therefore, present Larkana District is administratively consists of four talukas namely;

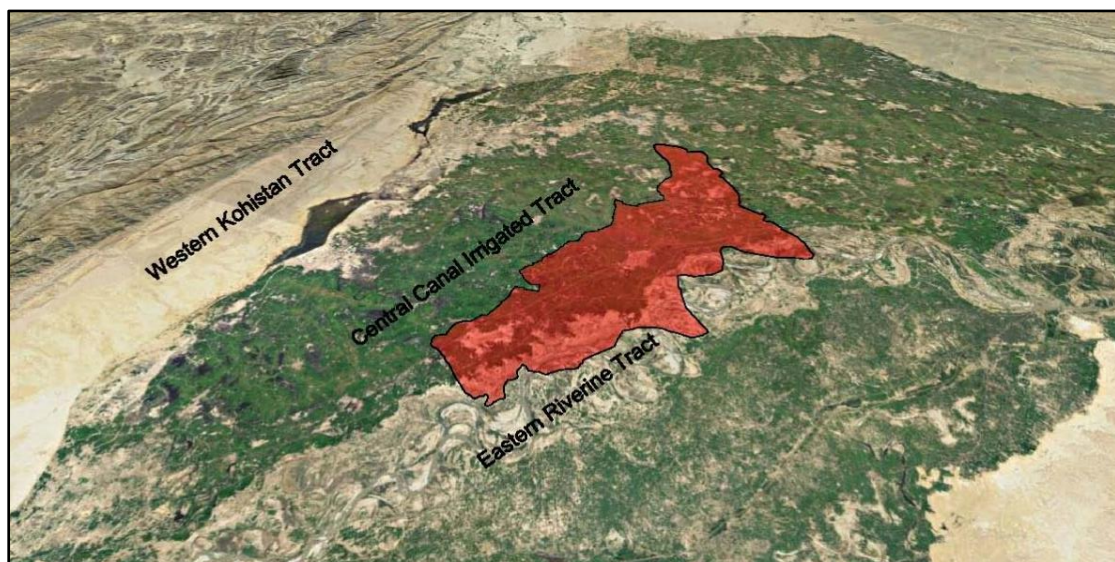
1. Dokri (reconstituted)
2. Bakrani (newly created)
3. Larkana
4. Ratodero





3.2 Physiography

In the context of physiographic characteristics, Larkana District can be divided into three tracts, namely, the Western Kohistan tract, the Central-Canal Irrigated tract and the Eastern Riverine tract.



- ***Western Kohistan Tract:***

It consists of the Kohistan area comprising the entire western side of the district. It is separated from the Central Canal-Irrigated tract by a long protective earthen Bund. The area gradually rises towards the west from sandy ground to the hilly areas of Khirthar range. This is a range of limestone hills and mountains, referred to by the old writers as the 'Hallar', but generally known as the Khirthar range. These hills extend along the whole western boundary of the district from north to south in a straight line, for about 50 to 60 kilometers with an average width of about 20 kilometers.

The Khirthar range consists of an ascending series of ridges running generally north-south with broad flat valleys in-between. These ridges are locally distinguished by different names, for example, the first line of hills is known as 'Kakrio' (broken), the next as 'Karo' (black), and the third as 'Pinaro' (saffron coloured). The highest peak known as 'Kute-ji-Kabar' (dog's tomb) is 2,096 meters above the sea level. These hills provide good pasture land for sheep and goats rearing.

- ***Central Canal Irrigated Tract:***

It is a low lying, vast, flat land containing canal irrigated area. The area of central tract is bounded by two protective bunds, one in the west, to protect from hill torrents in rainy season and the other in the east, to protect the canal irrigated area against flood water from Indus. All the main east bank barrage canals irrigate this tract through various distributaries.

- ***Eastern Riverine Tract:***

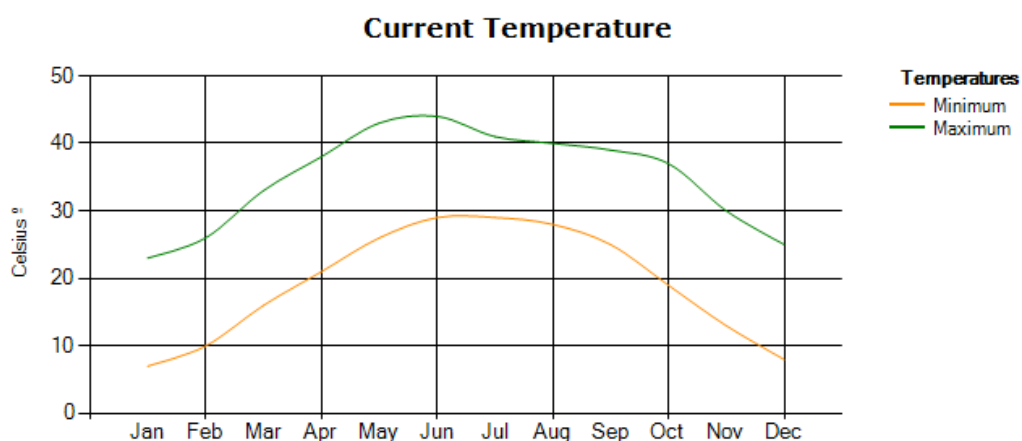
It is situated between the flood protection bund of the Indus River and the main river itself. Generally known as Katcha Area, it is quite fertile due to fresh layer of soil spread by the River Indus during monsoon floods. Most of the land is riverine and is cultivated during the winter season.

3.3 Climate

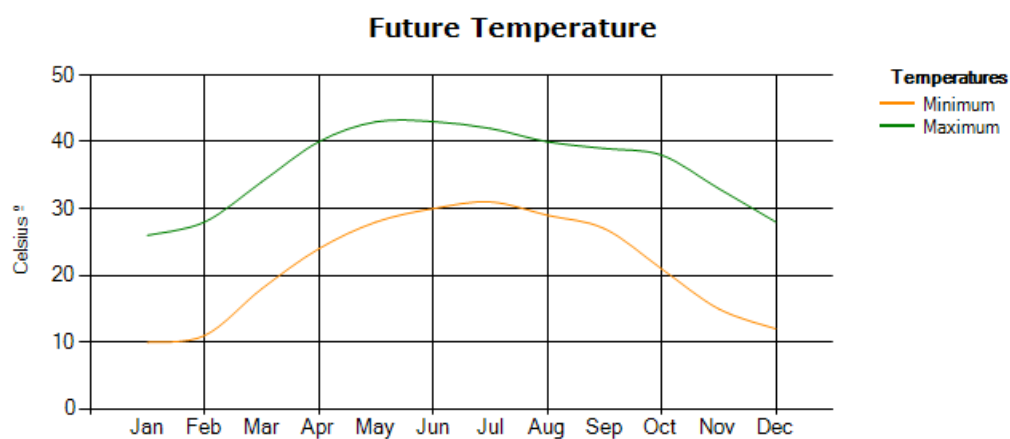
The climate of Larkana is hot and humid in summer and moderate in winter. The minimum temperature in December and January may be in single digit with maximum winter temperature being around 25 degree Celsius. The minimum summer temperature is around thirty degree Celsius with maximum temperature peaking around forty degree Celsius in April to August. The maximum summer temperature can sometime touch 50 degree Celsius for a short period.

The average annual rainfall is about 100 to 125 millimeters, more than 50 percent of which is received during monsoon period of July and August. Dust storms are common and hot winds blow continuously for about 40 days during May-June each year. The city being situated far away from the sea is devoid of sea breeze and even evenings are quite hot.

Average Temperature Graph⁶

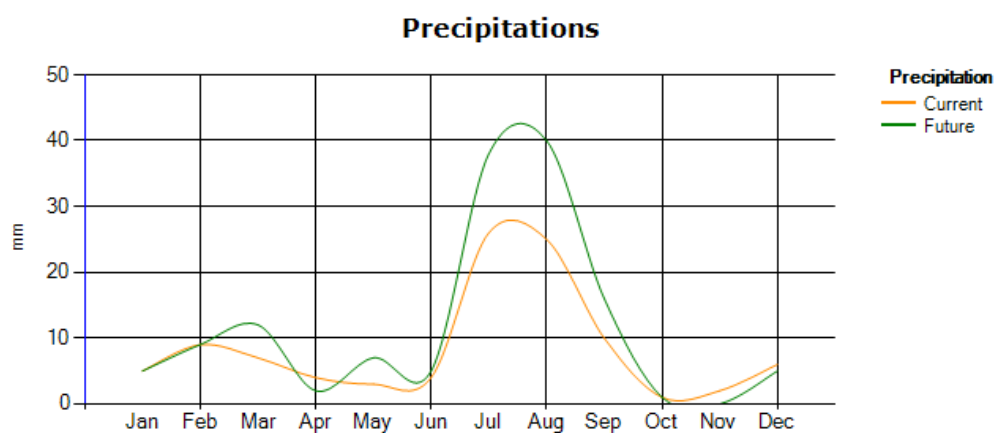


Current climate, interpolations of observed data, representative of 1950-2000. Source: Worldclim.



Projection years 2050, Climate model by CCCMA (Canadian Centre for Climate Modeling and Analysis)

Average Rainfall Graph⁷



⁶ Retrieved from: <http://wheatatlas.org/location/temperature/PAK/22628>

⁷ Retrieved from: <http://wheatatlas.org/location/precipitation/PAK/22628>

3.4 Natural Features

- **Forest**

Total forest area in Sindh is 1.16 million hectares or 8.3% of the Sindh province area which is far below the desired ratio of 20 to 30 percent considered necessary for balanced ecology. The per capita forest area being 0.039 hectare in Sindh province compared to 0.032 hectares in the country which is also quite low as compared to the world average of about 1.0 hectare.

In Larkana District the forest area is spread over 65,563 hectares, which is 8.8% of the total area under forest in Sindh. In the year 2008-2009, Larkana District produced timber and fire wood over an area of 64,752 hectares.⁸

Some of the important forests of Larkana District are Salihani, Agani, Nauabad, Amrote, Ketu Chandka, Khuhra, Madeji, Khokhar, Tajudero, Visar, Adamji, Sharifpur, Dasu, Behman, Hassan Wahan, Gajidero, Abreputa, Beli Gaji, Bagi, Shahbeg, Gangherko and Tatri.

In past few years the exotic species have also been planted in the irrigated plantation of Larkana Forest Division. Therefore at present the main species of forest trees includes: aam (mangifera indica), amaltas (cassia fistula), babul (acacia nilotica), ber (zizphus mauritiana), gul mohar (delonix regia), ipil ipil (leucaena leucocephala), jaman (syzygium cumini), jangle jalebi (pithecolobium dulce), kachar (bauhinia purpures), neem (azadirachta indica), pipal (ficus religiosa), shisham (dalbergia sissoo), simal (bombax cieba), siris (albizzia procera).

A built environment represents a high level of interference in the ecological system. The Larkana City known as the “City of Garden” in the past has lost that status due to rapid urbanization. The present administration is putting a lot of emphasis on restoring the city’s image as the Eden of Sindh. For this purpose, a new department of Urban Forestry has been established to carryout plantations in urban areas along roads and in parks. The following depicts the existing landscape of Larkana:⁹

- i. There are sixteen small scale parks and green belts have been established in the Larkana which are being looked after by the Urban Forestry Division. Besides, a new park is under construction along with the left side of the rice canal.
- ii. There is also an extensive programme for road side plantation carried out on various roads of Larkana covering approx 25.5 kilometers, which include; Otha Chowk to 1957 Pul (Larkana-Kairpur Road), Naudero-Larkana Road, Quaid-e-Awam Engineering College to Otha Chowk, New Bus Stand Pul to Chandka Pul (left side Rice Canal), Larkana-Kamber Road, Matho By pass (left side), Otha Chowk to Railway over Bridge, Village Haseeb Chandio to Circular Road.
- iii. In addition, the plantation from the normal budget covers 23 kilometers along Road / Canal side in the Larkana, includes; Bakrani bridge to Sohni Bridge (Dadu Canal),

⁸ Development Statistics of Sindh 2011, Bureau of Statistics Planning and Development Department

⁹ Office of the Divisional Forest Officer Social Forestry Division Larkana

Ghulam Hussain Butt to Tatri I.P Forest Tatri (Dadu Canal), Village Palyu Umrani near Larkana Pass, Pir mataro to Pir Jan Muhammad Stop (left side Dadu Canal), Pir Jan Muhammad to Pir Mataro Pul (right side Dadu Canal).

The Forestry Department for Larkana District has mentioned number of planned projects for the Financial Year 2014-15 and 2015-16, discussed below:¹⁰

- i. New proposals of road/ canal side plantation in Larkana will cover around 113 kilometers. These will include nine roads / canal sides; right side of Rice Canal at Chandka Bridge to New Bus Stand, Larkana-Ratodero Road, 1957 Bridge to Khairpur Bridge, Larkana-Rashid Wagan Road, Larkana-Wagan Road, Larkana-Circular/ Bypass Road, Larkana-Bhans Colony Road, Larkana-Qamber Road and Garhi Khuda Bakhsh Road.
- ii. There are seven new proposals for the establishments of parks within the municipal boundary, which include; railway ground opposite Christian Colony, railway ground back side of Government Degree College Larkana, railway ground back side of Jinnah Bagah Larkana, ground at Central Jail Larkana, New Bus Stand Larkana, ground in front of Commissioner's office, Larkana (along rice canal), Old Sabzi Mandi Larkana.
- iii. There are five green belts proposed within the municipal boundary and taluka, which includes; Rice Canal both side (within city), V.I.P Road Larkana (failures & gapes), in front of Sir Shahnawaz Bhutto Memorial Library Larkana, in Front of Women Police Station Larkana and Otha Chowk Larkana.
- iv. There are thirty one sites for the new proposal of plantation in various government buildings, institutions and amenity plots.

It has been suggested by the officials at Local Forest Department Larkana that for the development of Social Forestry at Taluka level, the land holding power should be given to TMA or Public Health Department for establishing forest nurseries. This will motivate people to increase tree plantation in the city, taluka as well as district.

- ***Flora and Fauna***

The district was rich in wild life in the past. The Himalayan black bear was found on the heights of Khirthar range. The smallest of Indian wild sheep, the "Oriah" best known in Sindh by "Gad" was also found on the Khirthar range, besides other wild animals. With the colonization of the area the wildlife gradually diminished and disappeared. At present hyaena and jackal are all that is found in the wild.

Among the birds eagle, hawk, kite, parrot, partridge common crow and several varieties of water-fowls are commonly found. Various species of migratory birds visit the region during the winter from Russia and Siberia. They live on wetlands on the right bank of the Indus River, near Moen-Jo-Daro.

¹⁰ Ibid

- **Rivers and Streams**

The mighty River Indus flows through province of Sindh, for a total length of approximately 1,400 km out of which 109 km flows along Larkana district boundary.



The entire area of the district within the protective bunds is irrigated by a network of canals including the Rice Canal, Dadu Canal, Warah Canal, Khirthar Canal and Saifullah Magsi Canal. The area irrigated by these canals is 3,521 square kilometers (870,127 acres). Among these only Rice Canal is non-perennial.

4. CULTURE

Sindh on the whole has a very strong cultural heritage and has been the cradle of one of the world's most ancient and technically advanced civilization. Larkana has been the centre of 4,000 years old Indus Civilization as the nearby archeological remains of Moen-Jo-Daro (MJD), situated at a distance of 24 kilometers from Larkana suggest. MJD was first excavated in 1922 and later in 1950 by Sir Mortimer Wheeler. MJD indicates remarkable sense of urban planning, straight streets with right angle junctions, well organized community facilities and advanced construction and engineering techniques (such as vitrification of bricks in the "Community Bath" for water proofing and brick lining of drains). The town had a well-organized drainage system and there are indications of a sanitary service for proper maintenance. There also seemed a strong government control, as all the houses were built in an orderly and planned manner. It is generally believed that some invaders, probably Aryans, raided Moen-Jo-Daro and massacred all residents causing the glorious town to fall in oblivion.

4.1 Tribes

The population of Larkana and surrounding areas comprises of several tribes of Balochi and non-Balochis origin. The Balochi tribes are Chandios, Rinds, Lasharis, Gopang, Magsis and Mugheries. Famous non-Balochi tribes are Bhuttas, Khuros, Abros, Chajras, Kalhoras, Bughios, Phuls, Wagans, and Junejo etc. Some sheikh families, migrants from other areas and a small number of Hindus (about 2% of population) are also residing here.

4.2 Religion

The dominant religion in Larkana is Islam as about 98% of the residents follow it. Syeds, Pirs and Murshads are treated with special reverence and tombs of some of the famous Pirs attract large number of devotees throughout the year, but in very large numbers during annual gatherings (Urs).

4.3 Languages

The native Sindhi language is spoken by 95% population, followed by Urdu. However, Urdu is understood by a vast majority of population. Sindhi Language is well developed and has a rich tradition in literature and poetry. All the revenue record in Sindh province is in Sindhi. During the Kalhora rule especially during the rule of Mian Sarfraz Ahmed Khan Kalhoro, Sindhi Language rose to its peak and had remained official court language and medium of instructions for a long time.

5. URBAN MORPHOLOGY

5.1 Larkana City

The Larkana City covers a total area of approximately 25 square kilometer. It is located on latitude 27° 33' 36" North and longitude 68° 13' 35" East, with an average elevation of 147 meters from the mean sea level. It lies on the south bank of Ghar Canal at a distance of 64 kilometer south-west of Shikarpur, 85 kilometer west of Sukkur and 24 kilometer north of Moen-Jo-Daro.

5.2 Morphogenesis

Larkana city has evolved in its present urban form from a small village, located at the southern bank of 'Ghaarwah Canal', into an active regional urban centre.

Sindh's modern history (pre-colonial era) acknowledges Larkana's existence as a 300 years old insipid local centre located at left bank of river Indus. During British rule, Larkana city became headquarter of Larkana District in 1901, and for a time, was part of the Bombay Presidency of British India. Located on the Karachi-Quetta route of the North -Western Railway (Now Pakistan Railway), it was well connected with the port and the hinterland.

After independence in 1947, Larkana developed its strategic importance in the region when a canal named as 'Ghaarwah Canal' was built there. The Karachi-Quetta main railway line passing through the centre of the city and a new branch line to Jacobabad divided the city into three main parts and brought major metamorphosis to historic urban form of the city.

Initially, after construction of railway line, the city started expanding on both sides of railway track. Later, the construction of 'Rice Canal' created a more formidable obstacle to its traditional linear growth pattern by constraining it to grow along north-east and south-west axis. Major inter-city roads, canals and railway track had major influence on the direction and pattern of growth. In consideration of conserving the rich agricultural land all around, which is the main source of livelihood of the local population, the urban form historically has been very compact in the past. The later developments, especially public sector projects, have spread out with extremely low density expansion with vast land allocations. Larkana's present street pattern exhibits a radial urban form /pattern, which is complemented by a number of convoluted semi-circular streets, organically evolved on traces of its historic urban form.

The present day Larkana, which was once known as 'Eden of Sind' because of its spacious sidewalks, well laid-out gardens and luxuriant foliage, has over the time turned into an extremely over populated, congested and polluted city, where encroachments, debris and open drains are common phenomena that have seriously threatened its inner city environment.

In terms of spatial distribution, Larkana's present urban form is comprised of three distinct quarters of the city, i.e. Old City, Central Quarters and New Planned Area.

5.2.1 Old City Area

The 'Old City' comprising mainly of UC-8, on east side of railway track with railway station at its centre, is the oldest and the most congested part of the city, as shown in the map titled "Zone 'A' (Old City Area) Map". This area has been under extreme population pressure and due to lack of facilities certain areas have descended into inner city slums. Larkana's virtual town center is also located in this part of the city with thriving trade and popular retail businesses; narrow streets and high density housing in low rise buildings occupied by population belonging to various income groups.

5.2.2 Central Quarters

The area between Rice Canal and Railways Track comprising of UC 3, 4 & 5, is categorized as the 'Central Quarters' of the City as it contains high level educational, health and government services, as shown in the map titled "Zone 'B' (Central Quarters) Map". The availability of these high level services makes Larkana as the regional service centre and attracts large populations from the adjoining rural areas. The density is low and level of urban facilities and utilities is high with wider roads and greenery. However parts of this area experiences daily traffic jams basically due to encroachment and uncontrolled traffic and parking.

5.2.3 New Planned Area

This comparatively recently developed part of Larkana city, is located at north and north-west of Rice Canal comprising of UC 1 & 2. The Rice Canal separates this part of city from the central area. Some major government projects (New Jail, Rangers, FWO) and housing colonies for public servants (WAPDA) have been located here. A small industrial estate has also been developed here, as shown in the map titled "Zone 'C' (New Planned Area) Map". Larkana's recently planned high-end housing schemes including Sachal and Sheikh Zaid housing schemes are also located in this area. These housing schemes have been planned on modern town planning standards offering wide access streets and sufficient open space and amenities.

5.3 Expansion and Evolution of Urban Form

There is very little recorded history of Larkana's spatial growth earlier than 1975. Digital images available from 1975 onwards³ however give a fairly good idea of Larkana's urban morphology. The Urban area has been roughly calculated through the grid pattern for comparison purposes and may not be comparable with the official records.

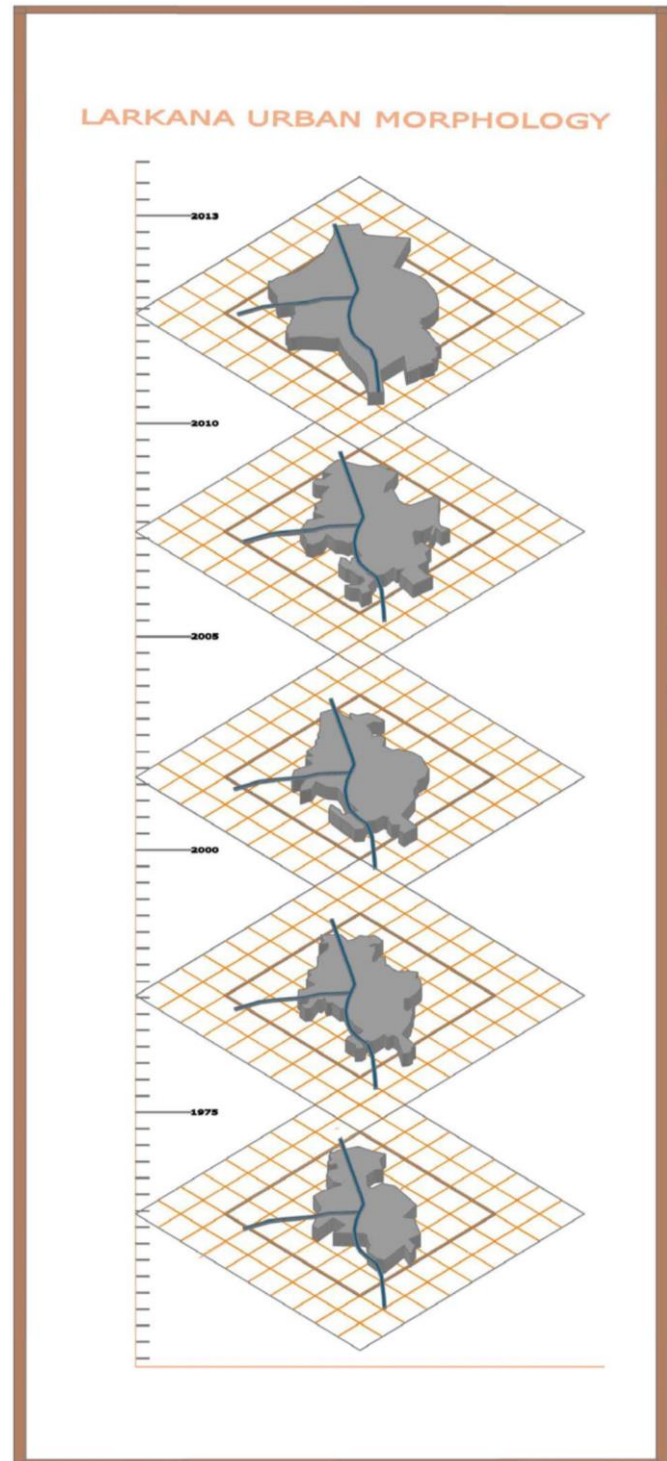
5.3.1 1975 – 2000

The total built up area of the city in 1975 was approximately 10 sq. km and reached up to 19 sq. km in 2000. City's major landmark 'Rice Canal' was also built during this era. The city extended in south-east along Murad-Wahan Road and Pir Sher Road and also in north-west along Jail Road and Kambar Road. Many of the city's health and educational institutes, which serve population of surrounding regions as well, were also developed in this era. Streets in old city area became congested and gave birth too many of the slums of present day city.

5.3.2 2000 – 2005

Larkana's spatial growth during this period shows 10 percent increase in built up area covering about 21 sq. km. The city grew mainly in south-west and north-east directions. A cancer hospital named as 'Linar Hospital' was built on 'Rice Canal Road', the education and health services marked steady growth. The urban growth along 'Bakrani Road' in 'Old City' also grew in eastern direction.

In this era, development projects undertaken were; Small Industrial Area, new Bus Terminal, new housing settlements in 'New Planned Area', city's first 'Engineering College' at Bakrani Road.



5.3.3 2005 – 2010

During this period, Larkana spatial growth covered about 23 sq. km increasing by 8.9 percent. Majority of national highway's road networks that provide regional connectivity to surrounding regions of Larkana, were built in this era. The establishment of this intra-regional network facilitated people of Northern Sindh to settle in Larkana.

Some of the important development achievements of this period include; Engineering College (Quaid-e-Awam Engineering College, Larkana) at Bakrani Road (2009), development of new housing schemes along Airport Road, development of health clinics in central and new planned areas and development of residential neighborhoods for high income people (Sachal Sarmast and Sheikh Zaid) in New Planned area. Majority of these housing schemes resulted in relocation of middle and high income people from inner city area to city suburbs.

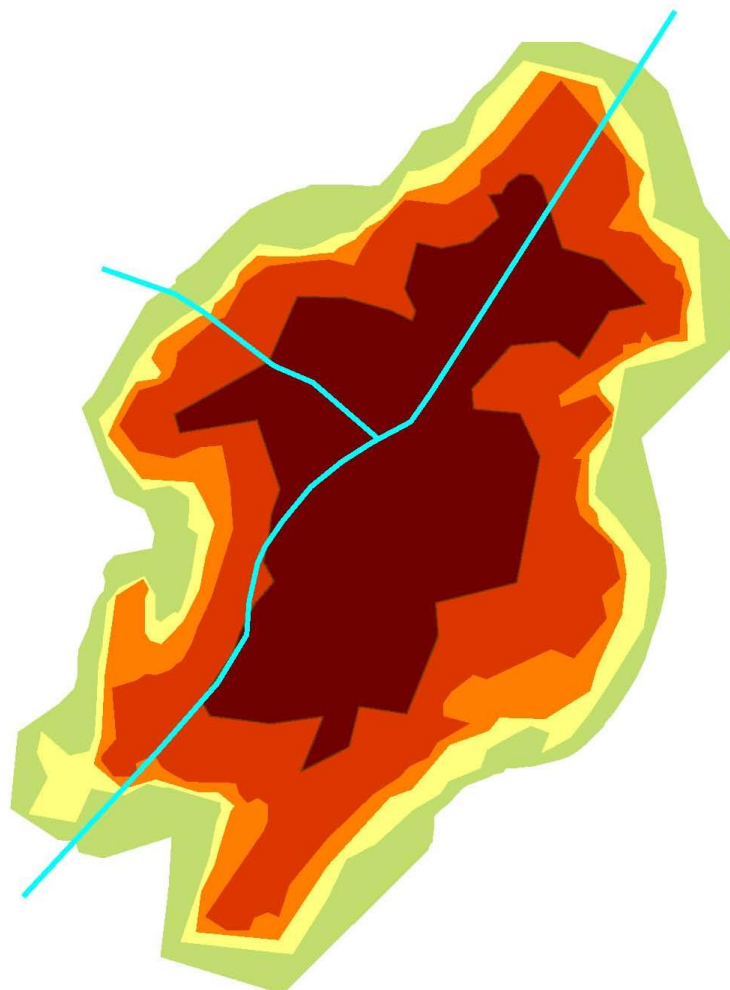
5.3.4 2010 – 2013

The total built up area of the city increased to 25 sq. km and the expansion was multidirectional. In this time period Larkana's spatial growth increased upto 11 percent in size. The series of monsoon floods that deluged Sindh in 2010 and 2011, created a drastic flooding situation in whole province including low lying areas of Larkana city in eastern part of the city. Therefore, majority of urban growth in Larkana during this time period took place in opposite side, i.e. western part of the city. This includes new housing schemes, a helipad site and extension of industrial area including warehouses for rice sellers.

Conclusion:

- The city of Larkana through its organic morphogenesis has evolved an informal radial street pattern that is result of series of intra regional roads built to connect city with its surrounding regions.
- The Town's expansion has been more compact due to rich agricultural land parcels around the town which was the main economic base. The shortage of land supply for new development has resulted in congestion and over population of inner city area.
- The trend of medium density mixed land use (residential and commercial) development has been observed along primary and secondary roads. The inner city streets are unable to accommodate increase in traffic volumes due to poor design of roads and encroachments occupying majority of road space.
- The review of past development trends also indicates that the concerned authorities dealing with development process of Larkana took more interest in developing health and education related infrastructure, whereas less attention had been paid to rehabilitate the old city area and main commercial area of the town.

EXPANSION OF LARKANA CITY (1975-2013)



LEGEND

- 1975 (10 Sq.Km)
- 2000 (19 Sq.Km)
- 2005 (21 Sq.Km)
- 2010 (23 Sq.Km)
- 2013 (25 Sq.Km)

6. EXISTING LAND USE

The spread of development in Larkana indicates that the present town centre originated along east side of existing railway track. Later, city started growing on both sides of railway track and after the construction of ‘Rice Canal’ the new development took place westward along the right bank of Rice Canal, while public projects established mostly between Rice Canal and Railway Track longitudinally. It is however surprising that Railway Track and Rice Canal were not physical obstacles in spilling the development on both sides across the track or canal banks.

The present town centre functions are concentrated around the ‘Shahi Bazar’ and ‘Resham Gali Bazaar’. With the city spreading in west and south directions, the main business centre remained in same area, making it more congested and crowded area of the city.

Larkana city had a total built up area of 18.16 square kilometers and a population of 270,283 as per 1998 census. According to the delimitation of Larkana Municipal Corporation (LMC), the city of Larkana is divided into eleven (under review at present) union councils. The current boundaries are well defined by the Local Government authorities by inclusion of villages whose physical boundaries are also well recorded in district revenue records maintained by office of the Deputy Commissioner; Larkana. Larkana’s present LMC boundary covers an area of about 25.0 square kilometers. The current 2013 population as estimated by the district administration for delimitation of Union Council boundaries and preparation of voter’s list is about 460,000.

6.1 Zoning Distribution

The existing area of LMC can be divided into three main zones based on their distinct urban characteristics, as shown in the Map, titled ‘Larkana Zonal Map’.

- Zone A. Old City Area (UC 6 to UC 11)
- Zone B. Central Quarters (UC 3 to UC 5)
- Zone C. New Planned Area (UC 1 & UC 2)

TABLE-L1: EXISTING UC WISE DENSITIES IN LARKANA

Zones	UC	Population	Area sq. km	Density per sq.km
Zone C	UC-01	28,039	3.60	7,789
	UC-02	41,440	4.62	8,970
Zone B	UC-03	12,040	1.54	7,818
	UC-04	41,265	2.72	15,171
	UC-05	74,197	1.41	52,622
Zone A	UC-06	66,012	1.77	37,295
	UC-07	33,059	1.47	22,489
	UC-08	40,803	0.66	61,823
	UC-09	51,999	1.19	43,697
	UC-10	27,594	0.86	32,086
	UC-11	43,471	5.13	8,474
TOTAL		459,919	24.96	18,426

Source: Office of Assistant Commissioner, Larkana

6.1.1 *Zone A: Old City Area*

The old city area is located in eastern ward of the city and spread along north-south axis of Railway Track, in the area where Larkana was originally founded as a small village near main course of River Indus. Zone A is a mixed land uses area, predominated by commercial and residential land uses including the main business centre. The prominent land uses in this Zone are: Shahi Bazar, Resham Gali Bazar, Main Sabzi-Mandi (Vegetable Market), Fish Market, Press Club, Government Girls High School and College, Quaid-e-Awam Engineering College, and office of the Municipal Corporation.

This zone is served by several major roads of the city including; Bakrani Road, Airport Road, Pir-Sher Road, Murad-Wahan-Phul Road, Empire Road, Aqeel-Chana Road and Naudero-Garhi Khuda Buksh Road.

The building density in this area of the city is comparatively high with most of the buildings having 2 to 5 storey height. The area has thriving commercial activities with a large number of commercial retail shops selling consumer goods to the local population and people from the surrounding villages. The residential quarters are congested with narrow winding streets, most of which are paved and have open drains and electric supply. The area has limited vehicular access and almost no parking places.

Like rest of the city, this area gets water supply access from ‘Bore Water’, pumped manually from shallow wells or through electrical pumps. The important localities in this Zone are: Larkana Defence Colony, Allahabad Muhallah, Khaliq Colony, Suhail Colony, Dari Mohallah, Nawan Tak Mohalla, Municipal Colony, Brohi Mohalla, Ali Goharabad Mohalla, Sarwan Bhutto Colony, Chana Mohalla, Gaad Mohalla, Zulfiqar Bagah, Ghalib Nagar Mohalla, Gajanpur Mohalla, Kousar Mill Mohalla, Domky Muhalla and Ayub Colony.

6.1.2 *Zone B: Central Quarters*

Between the western side of Railway Track and left bank of Rice Canal, all along the North-South axis, are the most prominent public sector developments of city which includes: Old Bus Stand, Municipal Stadium, Municipal High School, SDM office, Revenue Office, Ladies jail, Civil Hospital, Wapda office, Session Court, Police Office, Deputy Commissioner’s house, District Health Office, Officers Club, Sambara Inn Hotel, Commissioner’s House, Judges Lodge, Old Circuit House, District Council Office, Shanawaz Library, Election Commission Office, Treasury Office, Chandka Medical College and Hospital, Doctors Colony, Nursery etc.

Zone A and Zone B are two centers of gravity, which characterize Larkana as a true capital of Larkana District and service centre for a larger region. While Zone A is the regional hub for commercial services, the Zone B is the regional service centre for health, public administration and security services.

6.1.3 *Zone C: New Planned Area*

Situated along the right bank of Rice Canal and dissected by Ghaar Canal, Zone C covers north-western portion of the City and has mixed land uses which includes; public administration, education, industrial uses and several planned residential neighborhoods.

Some of the existing planned residential areas in this Zone are: Wakeel Colony, Sachal Sarmast Colony, Professors Colony, Faisal Colony, Sheikh Zaid Colony, Noor Colony and Shahbaz Colony. Other unplanned housing clusters include: Ali Abdualh Shah Mohalla, Brohi Mohalla, SCARP Colony, Muazam Colony, Gharebabad and Labours Colony.

The ‘Ghaar Wah’ (water canal) divides this Zone into two parts. The northern part accommodates the main industrial area of the city along Kanda-Mena Road. Other important areas of public administration and community services in this area include; Bus Terminal, Board Office Building, Anaj Mandi, District Jail, Grid Station and City School.

The area along Left bank of Ghaar Wah accommodates office of Commissioner, EDO, Excise & Taxation, Police Training School, Offices of Sui Southern Gas, Radio Pakistan and a site for Pakistan Telecommunication Corporation residence & Tower. Larkana city’s many health land uses are also located in Zone C, which includes; Cancer Hospital, Women Hospital, City Medical Centre, Sachal Medical Centre. The site of SZABIST is also located in this area.

This is one of the areas of city, which possesses potential for providing housing development in future as it has substantial vacant land.

6.2 Land Use Distribution

The area wise land use distribution of Larkana City is typical of agro based medium size city:

- The majority area comprises of residential use with low rise development
- It is very clear that this is an agro based city as a small area is under industrial use as compared to agriculture land
- It has been observed that the public administration is spread over large parcel of lands while commercial area is too congested occupying lesser area

TABLE-L2: LAND USE AREA WISE PERCENTAGE OF LARKANA CITY

S. No.	Land Uses	Area acres	Area sq.km	Percentage %
1	Residential	2,593	10.49	42.03%
2	Commercial	165	0.67	2.67%
3	Education	132	0.53	2.14%
4	Health	30	0.12	0.48%
5	Public Administration	296	1.20	4.80%
6	Recreational	57	0.23	0.92%
7	Industrial	120	0.49	1.95%
8	Town Centre	129	0.52	2.10%
9	Vacant Land	244	0.99	3.95%
10	Agriculture Land/ Miscellaneous	1,350	5.46	21.89%
11	Roads/Streets	1,053	4.26	17.07%
TOTAL		6,168	24.96	100.00%

Source: Consultant's Estimates

From the above findings it has been analyzed that city need:

- Vertical growth in residential and commercial areas to fulfill future requirement
- More industrial land is required to accommodate processing of agricultural production, with protection to rich agricultural areas
- Mixed land use to utilize open space in public administration areas

7. DEMOGRAPHY

7.1 Historical Growth Trends

The Larkana Municipality was established in 1855¹¹ but the modern history of Larkana actually begins from the 1901, when Larkana was declared as a district and made district headquarters under Bombay Presidency. Having been surrounded by rich fertile land with sizeable agricultural production, it soon became a regional centre providing administrative and social services, and attracting population from a large area.

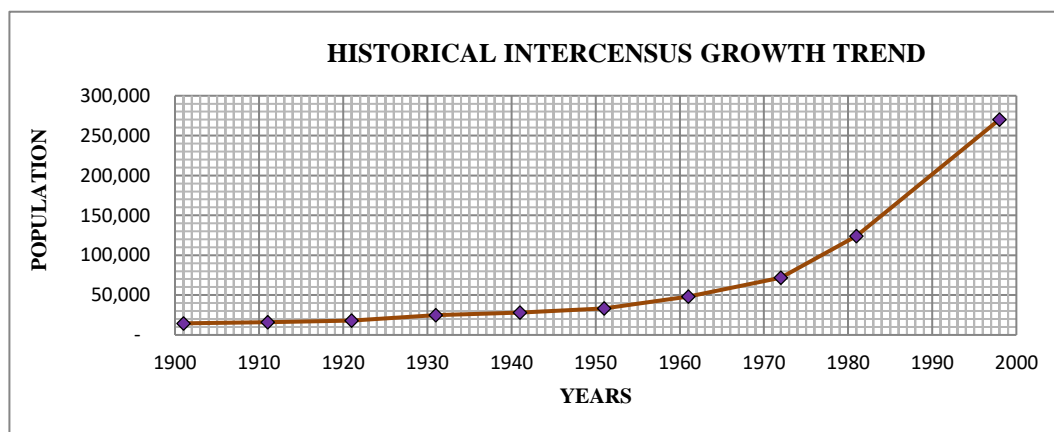
The population of Larkana grew at nominal rate until 1951 but showed acceleration from 1961 onwards. Highest growth rate of 6.05% was observed during inter-census period of 1972 to 1981, when Larkana came into political lime light during premiership of Mr. Z. A. Bhutto and got development impetus. The urban growth and spatial expansion that followed was not very organized defying principles of modern town planning.

Larkana's population was recorded as 14,543 in 1901 but by the end of the century, it had swelled to 270,283 with most of the addition taking place in between 1972 to 1998.

TABLE-D1: HISTORICAL INTERCENSUS GROWTH RATES

Years	Population	Annual Growth Rate
1901	14,543	1.91%
1911	16,097	1.02%
1921	18,000	1.12%
1931	24,698	3.16%
1941	28,084	1.28%
1951	33,414	1.74%
1961	48,008	3.62%
1972	71,893	3.67%
1981	123,890	6.05%
1998	270,283	4.69%

Source: Population Census Organization



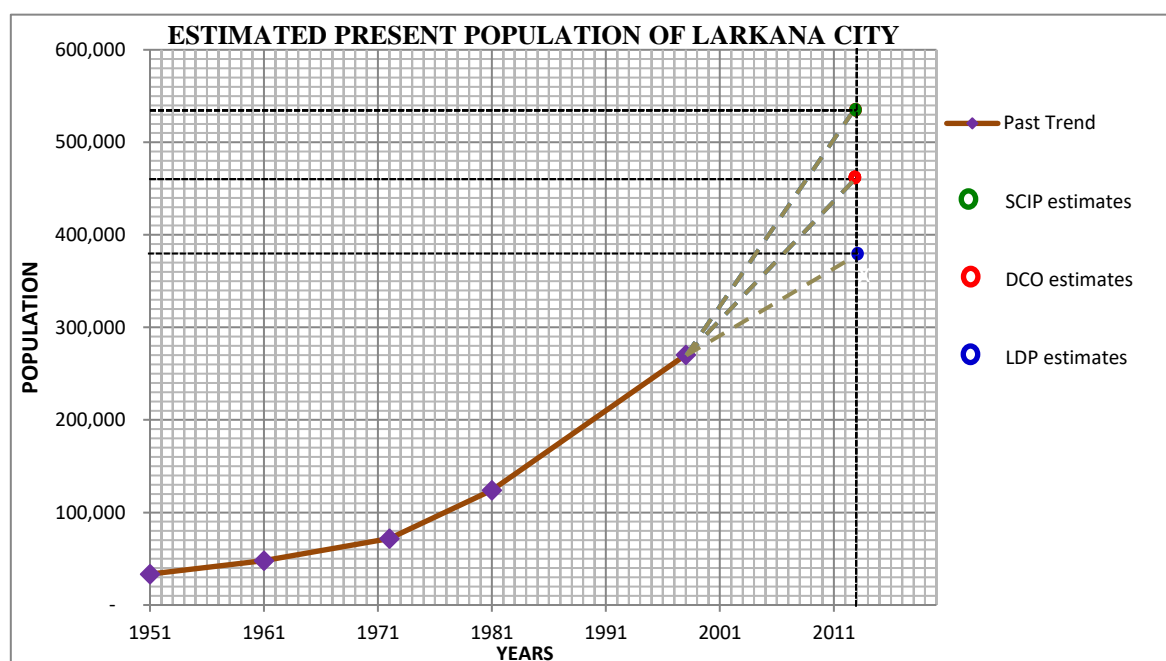
¹¹ Imperial Gazetteer of India, Volume 16 Page 144, Digital South Asia Library

7.2 Present Population¹²

There has been no census after 1998 and all estimates of current population after 1998 are based on assumptions. Various estimates are as follows:

TABLE-D2: ESTIMATED PRESENT POPULATION OF LARKANA CITY

Sr. No	Source	Population	Year	Annual Growth Rate	Projected 2013
1	SCIP estimates ¹³	447,000	2009	4.69%	536,943
2	D.C. Office estimates ¹⁴	-	2013	-	459,919
3	LDP estimates ¹⁵	345,000	2010	3.10%	378,090



- SCIP estimates are based on AGR of 4.69% as indicated in inter-census growth during 1981-1998.
- The District Administration has made survey for arriving at current population meant for delimitation of UC boundaries and preparation of Voter's List.
- LDP (2010) estimates are based on annual growth rates of 3.0 to 3.2 estimated for the whole of province Sindh. The estimates were prepared when 1998 census figures were not available.

¹² Updated Demographic Characteristics of Larkana are given in the Addendum - 2018 - page nos. 04-05

¹³ Larkana Drainage Master Plan 2009, SCIP Report by RCC Consultants.

¹⁴ MC Delimitation, UC wise population provided by D.C. Larkana.

¹⁵ LDP 2010, by Doxiadis Associates & Osmani Company (Pvt.) Ltd.

The current 2013 population estimates 459,919, say 460,000, prepared by the District Administration, being the most recent and since coming from an official source, are taken as base line for projection of future population.

7.3 Socio-Economic Survey

In order to get an updated demographic profile of the present population the Consultants undertook a sample socio-economic survey in different representative localities in the city to get information on current demographic characteristics and condition of housing in the city. The questionnaire for the socio-economic survey prepared by the Consultants was shared with the Client in the kick-off meeting and was generally agreed.¹⁷

Fifteen localities of the city, comprising a mixed form of katchi abadis and residential neighborhoods (planned and unplanned, recent and old) were selected for door-to-door interviews with the households.

The city had been divided by Rice Canal and railway track into three Zones A, B & C (Ref: Section 6.1 for details).

TABLE-D3: LOCALITIES COVERED BY SOCIO-ECONOMIC SURVEY¹⁶

Sr. No.	Name of Locality	Location Quarter	No. of Interviews
1	Ghalib Nagar	Old City	20
2	Shaikh Muhallah	Old City	18
3	Murad Wahan Muhallah	Old City	21
4	Khaliq Colony	Old City	17
5	Allahbad Muhallah	Old City	24
6	Khudabad Muhallah	Old City	27
7	Peoples Colony	Centre City	23
8	Chandka Staff Colony	Centre City	21
9	Railway Staff Colony	Centre City	34
10	Police Head Quarters	Centre City	24
11	Rahmatpur Muhallah	Centre City	29
12	Cattle Colony	Centre City	32
13	Lahori Muhallah	Centre City	21
14	Labour Colony	New Development	24
15	Sachal Sarmast Colony	New Development	18
TOTAL			354

The communities selected for socio-economic survey are evenly spread over the whole city. Two (2) sites from new development area, seven (7) from centre city area and six (6) from old city area have been selected for survey purpose. The objective was to include a cross section of all income groups and an even spatial distribution of communities. In all 354 households were interviewed as per the breakdown shown in Table D3.

The data received has been collated and analyzed. The relation of sample size to the universe, as expected, is problematic as the locality-wise house counts are not available. Therefore the ratio of sample size to the universe cannot be accurately established. The results are therefore compiled in relation to number and percent of respondents.

¹⁶ Refer Annexure-A for Socio-Economic Survey Map

¹⁷ Refer Annexure-B for Socio-Economic Survey Questionnaire

Unfortunately not all the households approached by the team responded to all the questions. Many respondents refused to give the details about female family members such as age, educational attainment or even total number of females in the household. There were also reservations about income and expenditure. The survey analysis had therefore been limited to the households who actually responded to particular questions.

The Consultants' socio-economic survey carried out as part of this assignment indicated that there is a steady flow of population to Larkana city from outside. 46% respondents have migrated to the city from elsewhere within the taluka, district and Sindh province.¹⁸ About one third of the respondents have arrived in the city within the last ten years including 17% within the last 5 years.¹⁹

Discussions with the stakeholders both in Public Sector (government officials) and Private Sector (Larkana Chamber of Commerce and Industry) as well as common citizens, reveal that no dramatic investment initiatives are expected in Larkana to change its demographic profile. As a strong regional service centre for health and educational facilities and exportable agricultural surplus, it will continue to attract people from the surrounding areas more or less at the past rates. Similarly, a modest increase in economic activity will continue to create employment for future entrants in the job market. Larkana will also continue to lose some population to larger urban centres such as Karachi and even to job markets abroad. Our survey showed some 62% families have some relatives outside Larkana and even abroad.²⁰

7.4 Future Population²¹

Keeping the above factors in view, we estimate the past trends in population growth will continue for future. The population projections will be done on the basis of different AGR. The projection of population poses difficulty in the sense that the only authentic population figures available are from 1998 census which is already fifteen years old. Unfortunately, we have to make projections on the basis of present population figures, which are themselves estimated. Among all the estimates, the estimates prepared by D.C's office for voters list, may be more authentic as they had been subject to challenge and verification by the political parties and general population.

¹⁸ Refer Annexure-C Table-1 Migration towards Larkana

¹⁹ Refer Annexure-C Table-2 Duration of Migrants in Larkana

²⁰ Refer Annexure-C Table-3 Family Members outside the Larkana

²¹ Updated Future population of Larkana is given in the Addendum - 2018 - page nos. 04-05

TABLE-D4: LARKANA PROJECTED POPULATION

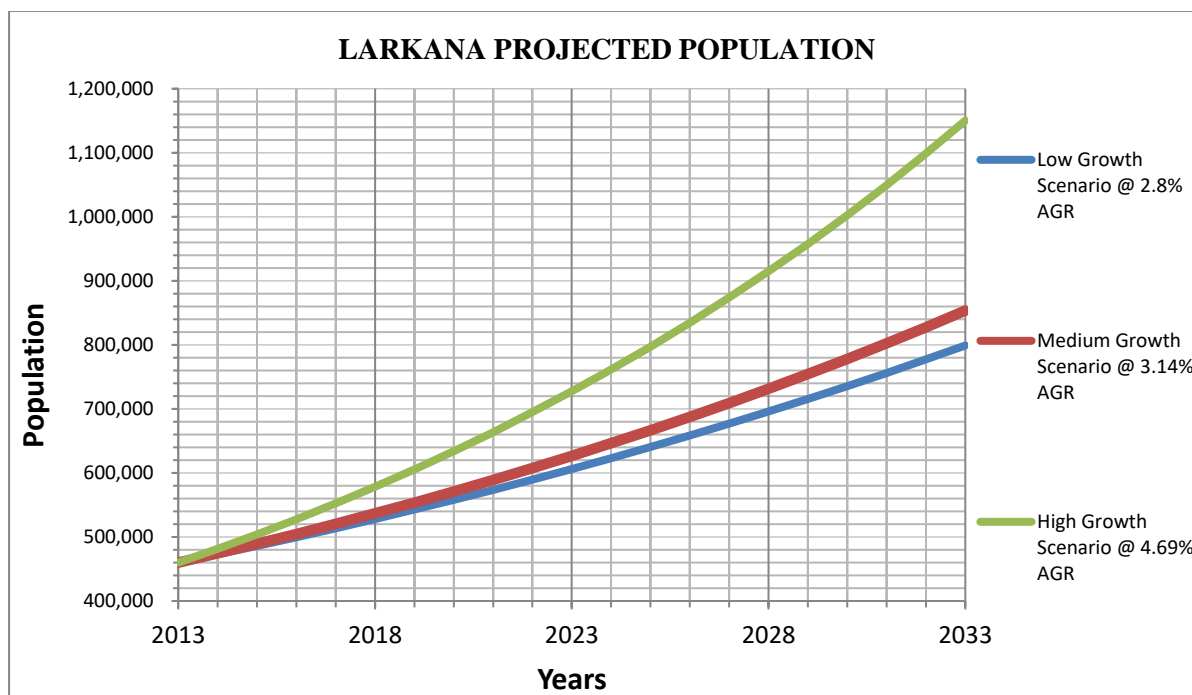
Year	LOW GROWTH	MEDIUM GROWTH	HIGH GROWTH
	Population @ AGR 2.8%	Population @ AGR 3.14%	Population @ AGR 4.69%
2013	459,919	459,919	459,919
2018	528,016	536,806	578,372
2023	606,195	626,546	727,333
2028	695,950	731,288	914,659
2033	798,994	853,540	1,150,232

Source: Low Growth Scenario based upon AGR of Sindh Province between 1981-1998 Census

Medium Growth Scenario based upon AGR of Larkana District between 1981-1998 Census.

High Growth Scenario based upon AGR of Larkana MC between 1981-1998 Census.

Keeping the present population deduced from DC's estimates, the future population is calculated as follows:



As there has been no population census since 1998, there is a long period of fifteen years 1998 to 2013 and another 20 years of plan period 2013 to 2033, any population projection will be a long shot. Thus the population profile of two generations is undocumented and any assumptions based on the previous trends (1981-1998) may have a margin of error. It is strongly suggested that as soon as the next census takes place and the data is published, the population estimates should be reviewed and adjusted.

7.5 Population Structure

The age-sex distribution of present and future population is based on the ratios obtained from 1998 Census.

POPULATION PYRAMID, LARKANA MC 1998

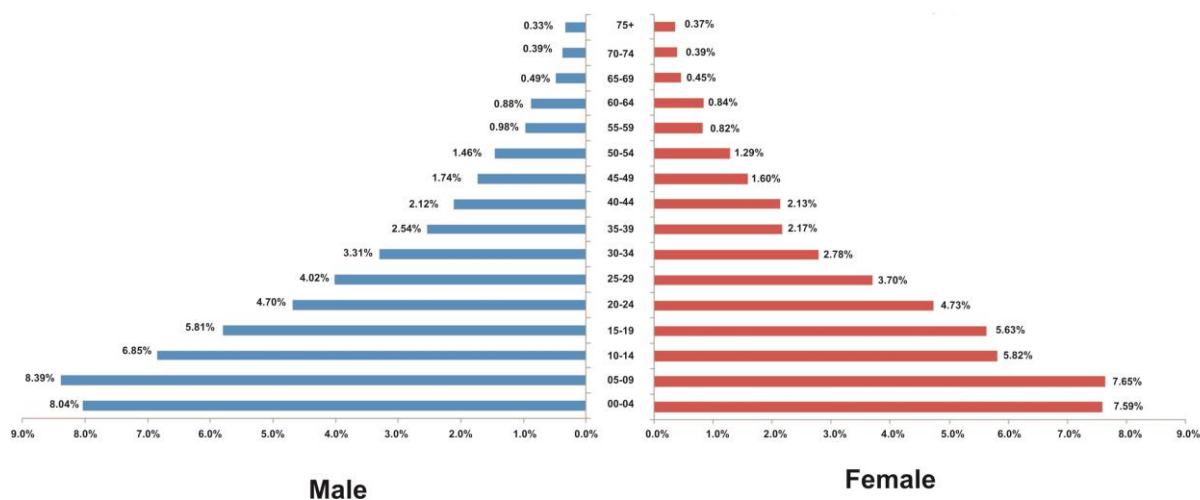


TABLE-D5 LARKANA POPULATION STRUCTURE

Category	Age Group	1998 Census		Present Population 2013			Future Population 2033			Additional Population		
		Total	% Share	Present Male	Present Female	Total Present	Future Male	Future Female	Total Future	Additional Male	Additional Female	Total Additional
Dependent 44.33%	00 - 04	42,241	15.63%	36,997	34,888	71,885	68,661	64,748	133,408	31,664	29,859	61,523
	05 - 09	43,345	16.04%	38,573	35,175	73,748	71,585	65,280	136,865	33,013	30,105	63,117
	10 - 14	34,236	12.67%	31,486	26,763	58,249	58,433	49,668	108,101	26,947	22,905	49,852
Labor Force 51.53%	15 - 19	30,911	11.44%	26,707	25,908	52,615	49,563	48,082	97,645	22,857	22,174	45,030
	20 - 24	25,486	9.43%	21,598	21,772	43,370	40,083	40,405	80,488	18,485	18,634	37,118
	25 - 29	20,870	7.72%	18,507	16,999	35,506	34,345	31,548	65,893	15,839	14,549	30,388
	30 - 34	16,463	6.09%	15,213	12,796	28,009	28,234	23,747	51,981	13,020	10,951	23,972
	35 - 39	12,727	4.71%	11,676	9,986	21,662	21,669	18,533	40,202	9,993	8,547	18,540
	40 - 44	11,495	4.25%	9,738	9,808	19,547	18,073	18,202	36,275	8,335	8,394	16,729
	45 - 49	9,033	3.34%	8,010	7,352	15,361	14,865	13,643	28,508	6,855	6,292	13,147
	50 - 54	7,445	2.75%	6,698	5,949	12,648	12,431	11,041	23,472	5,733	5,092	10,825
Dependent 4.14%	55 - 59	4,856	1.80%	4,494	3,785	8,279	8,340	7,024	15,364	3,846	3,239	7,085
	60 - 64	4,648	1.72%	4,035	3,875	7,911	7,489	7,192	14,681	3,454	3,317	6,770
	65 - 69	2,538	0.94%	2,237	2,087	4,323	4,151	3,873	8,023	1,914	1,786	3,700
	70 - 74	2,105	0.78%	1,777	1,810	3,587	3,299	3,359	6,658	1,521	1,549	3,070
Total	75 +	1,884	0.70%	1,538	1,681	3,219	2,854	3,121	5,975	1,316	1,439	2,755
		270,283	100%	239,284	220,635	459,919	444,076	409,464	853,540	204,791	188,830	393,621

Source: Consultant's Estimates

Population estimation based on 1998 census and recent survey made by District Administration, Larkana

Percentage share of different age groups and male female based on the population structure of 1998 census

8. HOUSING

Housing can play a significant role in the economic growth of any country, as a source of jobs, capital investment, a secure vehicle for individual and family savings, and as an essential contributor to personal happiness. Housing is one of the basic human needs, as every family requires shelter. It is a major challenge to provide decent shelter to every family in the third world countries having rapid urbanization, high population growth rate and low incomes.

8.1 Housing Conditions

According to 1998 census, Larkana MC had 36,693 housing units. Out of total housing units, 52% were pacca, 8% were semi pacca while 40% were found to be katcha. From these housing units, 26% had access to potable water, 44% had access to latrine while 96% had electricity in their houses.

There are no recent statistics on housing conditions. However, limited socio-economic survey carried out in October, 2013 by the Consultants, gave the following information.²²

- The family structure of 52% households surveyed was found to be nucleus, which indicates rising demand for future housing units.
- House ownership is high, as 64% of the houses are family owned, the rest are either rented or provided by employer or with some other arrangement.
- About 88% houses surveyed were pacca, constructed in burnt bricks or RCC.
- The city has predominance of new construction as 59% houses are less than 25 years old.
- Generally, plot size is small as 79% houses are on plots size in the range of 60-240 sq.yds.
- There are indications of housing congestions as 59% of the houses have two rooms or less, whereas average household size is around 8 persons.
- Only 25% of the houses have 1-2 persons per room occupancy, while remaining 75% have 3 persons or more per room.
- The overall physical density of housing is quite low as 83% of houses surveyed had only ground floor construction.
- It is an alarming fact that the piped water supply is available to only 4% of the respondent, while remaining 96% are depending on hand pumps, shallow wells and boreholes.
- Despite the above fact, 80% of the respondents had toilets inside their houses and mostly connected to open drain system.
- In spite of NSUSC efforts for solid waste collection, 82% of the respondents are throwing their garbage outside the house, which clearly reflects lack of responsible behavior at neighborhood level.

²² Refer Annexure-C Table -4 to Table-17

- The electricity is available to 97% of the respondent that shows almost entire city has access to electric power.
- The gas supply is accessible to 88% of the responding households, while the remaining might be using some other alternate sources.
- The communication network is rather limited in the city, as 12% of the houses have telephone or internet connection.

8.2 Housing Gap

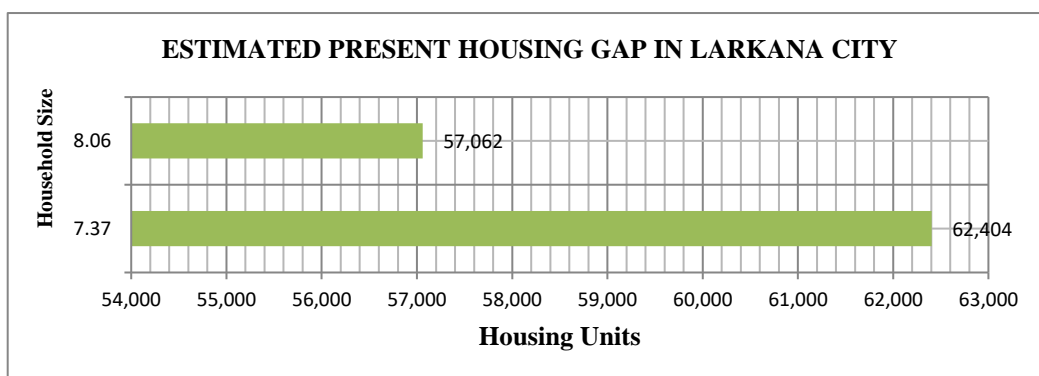
As per 1998 census, Larkana MC had an average household size of 7.37 persons and 36,693 housing units. While at present the Consultant's survey gives an average household (HH) size of 8.06 persons. Increase in HH size indicates a gap in the demand and supply of housing. Applying this HH size on the present estimated population of 459,919, the present stock of housing would be approximately 57,000 dwelling units.

TABLE-H1: ESTIMATED PRESENT HOUSING GAP IN LARKANA CITY

S. No.	Source	Present Population	Household Size	Projected 2013
1	1998 Census	459,919	7.37	62,404
2	Consultants Survey	459,919	8.06	57,062
Housing Gap				5,342

Source: Consultant's Estimates

If the 1998 census household size of 7.37 is applied to the current population of 459,919, the present number of housing units should have been 62,404. This shows that there is at present shortage of 5,342 units. This is notwithstanding the fact that there is large number of informal units and dangerous buildings which need to be replaced and their number should be added to this figure.



8.3 Katchi Abadis

The demand for high and middle income housing is met by the formal sector through public run schemes or private sector developers. The low income groups however find it very difficult to buy developed land and build a modest house from their meager income. The so-called low income housing schemes initialed by the public sector under various programmes are at best affordable for lower middle income groups. The private builders, having been driven by the financial returns do not venture into any project for the low income group. This segment of

population is therefore left to help themselves and with a little help from family, friends and land grabbers, squat on the public lands wherever available and within no time, a cluster of shabbily constructed shelters appears, which defy even minimum definition of a shelter. With time these clusters grow in size and gradually construction is upgraded from temporary to semi permanent, known as Katchi Abadies. These marginal settlements are without any utilities or urban services until they are regularized, which is also conditional to the ownership and designated use of land on which they are located. Relegated to informal housing sector, Katchi Abadies indicate a wide gap between the income /savings of the lowest income groups and the affordable house.

8.3.1 Status of the katchi Abadis located in Larkana City are as under:

Accordingly to the Sindh Katchi Abadies Authority, 20 Katchi Abadies in Larkana are identified as regularizable. Altogether they occupy 431 acres of precious urban land and accommodate 28,603 persons in 3,732 units. Thus 9.5% of total built up area of Larkana is occupied by Katchi Abadies. Out of 20 regularizable Katchi Abadies, only seven have so far been regularized. Among the regularized Katchi Abadies, the development work has started in six Katchi Abadies including Christian Colony, Gharib Muqam (N), Hydari Mohallah, Munawarabad and Murad Wahan Workshop, except Munawarabad, all of these Katchi Abadies have an area of less than 5.0 acres.

TABLE-H2: KATCHI ABADIES

S. No.	Name	Total Area (acres)	No. of Housing Units	Estimated Population	Status of Regularization
1	Abandoned Path Circular Road Deh Lahori	4.10	200	2,500	Yes
2	Allahabad	79.45	559	3,900	Yes
3	Balouch Colony	20.00	50	300	No
4	Christian Colony	1.14	61	260	Yes
5	Christian Colony (Part Area)	0.12	40	21	Yes
6	Gharib Muqam	0.80	94	592	No
7	Gharib Muqam(N)	4.00	80	480	No
8	Hydri Mohallah	3.06	84	550	Yes
9	Kafila Sarai	4.46	212	1,156	Yes
10	Kausar Mill	56.24	282	2,000	No
11	Khudabad	19.32	287	2,000	No
12	Munawarabad	31.12	385	2,700	Yes
13	Murad Wahan Workshop	4.12	79	2,500	Yes
14	New Lahori	51.02	181	1,929	No
15	Old Gushalla	3.35	75	625	No
16	Peoples Colony	4.02	169	729	No
17	Rehmat Pur 'A'	98.07	656	4,600	No
18	Rehmat Pur 'B'	18.35	150	889	No
19	Shahabad	3.35	64	512	No
20	Wapda Colony	25.00	60	360	No

Source: Sindh Katchi Abadis Authority, Regularizable K.A. 05-07-2010

9. ECONOMY²³

The economic development of Larkana is largely depends on the progress and growth of Agriculture sector. Agriculture shows promising trends as productivity levels per hectare in different crops have been gradually raising in Sindh as well as in Larkana District. This has been due to better awareness and availability of key inputs including high yielding late variety seeds. The yield of major crops over the past several years has shown significant increase due efforts under taken to eradicate water-logging and salinity, provision of new seed varieties, increased use of fertilizer, pesticides, provision of agriculture extension services, on-farm water management practice. The enhancement of yields should however be the prime objective for agricultural development strategy.

As would be clear, economy of Larkana will need to be studied in the context of the economy of the District and the economy of Sindh province as a whole. The economy of Larkana is largely shaped by extensive cultivated area in Larkana District producing rice, wheat and mustard among crops and guava among fruits. At present production of tomato is gaining significance but despite good crop, growers are not getting good price due to their low holding capacity. There is a very small industrial area mainly accommodating agro-based processing industries such as rice mills and flour mills with some service industries to support the main industries.

9.1 Agriculture²⁴

Agriculture is the back bone of Larkana economy. A system of perennial canals namely Dadu Canal, Kirthar Canal, and Warah Canal and the non-perennial Rice Canal irrigate the area supplemented by tube wells.

9.1.1 Crop Production

There are basically two crop seasons i.e. Rabi (winter) and Kharif (summer). The principal crops during Rabi are wheat, matter, gram and oil-seeds and in Kharif, paddy and jawar. In addition to these crops there are subsidiary crops known as zaid rabi, zaid kharif and dobari.

A statement showing area and production of some major crops are given in the Table E1.

TABLE-E1: CROP PRODUCTION

Sr. No.	Crop	Area (hectares)	Production (per hectares)	Production (metric tonnes)
1	Wheat	46938.8	83.98	157,677
2	Rice	110044.5	135.85	597,982
3	Cotton	2611.3	61.75	6,450
4	Guava	5345.3	247	52,812
5	Sugarcane	3417.4	1235	168,820
6	Rape and Mustard	530.4	29.64	629
7	Tomato	4858.3	395.2	76,800
8	Onion	810	679.25	22,000

Source: District Agricultural Extension Department Larkana, Government of Sindh.2012-2013

²³ Detailed Analysis of Economic Profile, Potential and Growth Strategy is given in Part-I of Volume-II i.e. Local Economic Development Strategy – Updated status is given in the Addendum - 2018 - page nos. 07-32

²⁴ Updated status is given in the Addendum - 2018 - page no. 07

9.1.2 Irrigation Network

The network of barrage canals irrigates the entire area of the district between the two protective bunds. These are Rice Canal, Dadu Canal, Kirthar Canal and Warah Branch. Out of these only Rice canal is non-perennial, while the others are perennial canals. The Rice Canal runs through the district for 76 kilometers, the Dadu Canal for 80 kilometers, the Warah Canal for 84 kilometers and the Khirthar Canal for 60 kilometers. The Katcha Area of Larkana, within the protective bunds, is brought under cultivation during Rabi season, which is termed as “sailabi” cultivation. Similarly, on the other side of the protective bund towards the Kohistan tract, a large area is brought under cultivation when there are sufficient rains. Some areas are also being cultivated through recently installed tube wells.



9.1.3 Land Utilization

The share of cultivated area in the reported area was about 30.2% in 2008-09 and increased to 31.84 in 2009-10. It is higher as compared to overall Sindh. On the contrary, it reflected lower cropping intensities as compared to Sindh. From the data given it appears that though the cropping intensities increased somewhat in the recent past, but an acre of land in Larkana district is not being cropped fully even once in a year. However, the cropped area increased from 152,000 hectares in 2008-09 to 185,000 hectares in 2009-10. Out of reported area 68.16% of uncultivated area includes land for grazing or forest, culturable waste and remaining land is not available for cultivation, lying unused due to condition or lack of irrigation water, as shown in the Table-E2.



**TABLE-E2: LAND UTILIZATION OF LARKANA, SINDH
2008-09 TO 2009-10**

GEOGRAPHICAL AREA		YEAR 2008-2009		YEAR 2009-2010	
		(Area “000” hectares)		(Area “000” hectares)	
Reported Area	Cultivated area’s total	61	202	64	201
	Un-cultivated area’s	141		137	
Cultivated Area	Current fallows	20	61	14	64
	Net area sown	41		50	
Cropped Area	Net area sown	41	152	50	185
	Area sown more than once	111		135	
Un-Cultivated Area	Forest	69	141	69	137
	Culturable waste	47		42	
	Not available for cultivation	25		26	

Source: Development Statistics of Sindh 2011, Bureau of Statistics Planning and Development Department, Government of Sindh

It is noted that the pressure of total rural population on cultivated area has increased considerably since last many years. The ratio of cultivated area per person decreased from 0.13 in 2008-09 to 0.14 in 2009-10 and it is expected to have further decreased due to increase in population.

9.1.4 Crop Position

There are two main crop seasons; "Kharif" and "Rabi" in Larkana District. The Kharif season starts from April-May and ends in October-November while the Rabi starts from November-December and ends in April-May. However, various factors i.e. seed varieties, availability of water, soil texture etc, determine the crop pattern and sowing and harvesting time. The crops are further categorized into major and minor crops. Rice, Wheat and Sugar-cane are the major crops of the district. Tomato, Onion, barely, jowar, mator, gram, rapeseed and mustard fall in the category of minor crops.

**TABLE-E3: AREA AND PRODUCTION OF CROPS IN LARKANA DISTRICT
2006-07 TO 2009-10**

Name of Crop	Area (hectares)				Production (metric tonnes)			
	2006-07	2007-08	2008-09	2009-10	2006-07	2007-08	2008-09	2009-10
Rice	81,439	96,200	95,088	97,823	283,351	327,939	370,165	383,600
Wheat	-	37,439	39,249	43,172	-	111,410	113,670	121,191
Cotton	-	2,919	3,571	3,365	-	12,213	15,218	16,426
Jowar	-	1,760	2,022	1,598	-	1,079	1,399	948
Gram	-	7,449	4,751	4,761	-	6,995	4,508	4,753
Barley	-	2,540	1,571	3,114	-	1,255	870	1,785
Rapeseed and Mustard	-	6,536	9,931	7,843	-	7,411	11,779	10,078
Sugarcane	-	586	294	335	-	29,193	13,629	16,821

Source: Development Statistics of Sindh 2011, Bureau of Statistics Planning and Development Department, Government of Sindh

The following elaborates significance of some important crops, which will play key role in the economic development of Larkana:

- Rice**

Rice is an important food as well as highly valued cash crop that earns substantial foreign exchange for the country. Larkana is one of the leading rice production areas in the Sindh province and more than 60.38% of the total cropped area is under rice cultivation.



As shown in the Table-E3, the area under rice cultivation in Larkana District has been gradually rising from 81,439 hectares in 2006-07 to 97,823 hectares in 2009-10 showing an increase of 20 percent. Similarly total production of rice has increased from 283,351 metric tonnes in 2006-07 to 383,600 metric tonnes in 2009-10 recording a 35 percent increase in production against 20 percent increase in area. This clearly indicates increase in per hectare yield, which is mainly due to use of high yielding seeds. The farmers complain about short availability of high yielding certified seeds of late varieties, which if made available, can further increase the overall rice production.

The estimated total export of rice from Pakistan is about US\$ 20 billion per year out of which 60% consists of Irri-6; 90% of Irri-9 comes from Larkana. Despite the relative price having favored the high yielding varieties, farmers traditionally grow the Irri-6 and Irri-9 in the Larkana. This is happening due to non-availability of certified seeds, which cause reduction in the yield.

- **Wheat**

Wheat is the second biggest crop of Larkana District. Approximately 121,191 metric tonnes of wheat is produced in the Larkana area and after accounting for local food needs, it has great potential for export. However, the export is negligible due to lack of marketing support.



According to the Table-E3, the area and production of wheat for the year 2007-08 were estimated at 37,439 hectares and 114,410 metric tonnes respectively, which have substantially increased to 43,172 hectares and 121,191 metric tonnes in 2009-10, recording an increase of 15% in the area but only 9% increase in the production over the three year period stated above. Non availability of certified seeds and timely availability of fertilizer is a constraint in achieving high yields and production of wheat. However, the yield per hectare was recorded at 2.8 metric tonnes.

- **Sugarcane**

Sugarcane is not grown in the immediate vicinity of Larkana; yet it is an important crop in the Larkana District and feeds a sugar mill established in Larkana. The past trends indicated a decline in the area and production of sugarcane. As Table-E3 shows, 586 hectares area in 2007-08 which declined to 335 hectares of land in 2009-10 for sugarcane and the production declined also from the 29,193 metric tons in 2007-08 to 16,821 metric tons in 2009-10. On strength of incentives given by sugar mills management, however the area under crop and production of sugarcane has seen gradually increase after year 2009-10 and as shown in Table-E1 it had an area of 3,417 hectares and 168,820 production metric tons in 2012-13.

- **Tomato**

Tomato has lately taken significance due to volatile market prices observed at the provincial and national level in the last 3-4 years. Until 2009-10, tomato has no significance in agricultural production of Larkana District. However, as per statistics of 2012-13 provided by Agricultural Extension Department, mentioned in the Table-E1, tomato in terms of area has fourth position (4,858 hectares) after rice, wheat and guava. In terms of production, it also has fourth position (76,800 metric tonnes) behind rice, sugarcane and wheat.

Tomato like Guava has a short shelf life therefore the returns to farmer remain uncertain and highly dependent on the market. As the potential for further growth is there, it is important that downstream cottage industries should be developed to preserve tomato as juice, paste, puree, and ketchup and save farmers from losses when the price of tomato is not good in the market.

- **Guava**

The density of the guava in Larkana could be understood from the fact that only from a single village known as 'Agani', with 1,500 acres of guava cultivation, 30 to 40 trucks are loaded daily for different markets. The growers of guava, though flourishing certainly are hard pressed by the taxation system. With all these hardships, the area of cultivation as well as production of guava have been increased and reached to 5,345 hectares area and 52,812 metric tonnes production in 2012-13, as shown in the Table-E1.

TABLE-E4: CHANGING TRENDS IN CROPS CULTIVATION AND LAND UTILIZATION

S. No.	CROP	TREND	DESCRIPTION
1	Cotton	The cultivation of cotton gets declined by the year 2009-10	Except two months of cotton production, land remains vacant for the whole year
2	Sugarcane	Sugarcane cultivation area and production gets increase up locally in the year 2012-13	With the increase of land under sugarcane cultivation, production is also increased. Mill management are also giving attractive incentives to growers to raise the production
3	Rape and Mustard	Rape and mustard cultivation gets decreased due to low quality seeds by the year 2009-10	Due to low rates farmers are losing their interest for the cultivation
4	Tomatoes	Since year 2009-10 area of production for tomato is increasing rapidly	Tomato required less hard work and time for cultivation, which is incentive for growers. The validity of price is disincentive
5	Onion	Similar to tomato, onion production also get increase since 2009-10	Onion is one of the less care demanding crop and flexible in terms of land utilization

Source: Consultant's Analysis

9.1.5 Agricultural Inputs

- Fertilizer**

Fertilizer is one of the major inputs which can enhance the crop production through increase in per acre yield. The timely application and use of correct doze is an essential factor for increasing crop yields. Its contribution towards increased crop production is about 50%. The total off-take of fertilizer in Larkana District including both *Rabi* and *Khareef* season is around 25,421 nutrient tones which is 3.1% of the total off-take in Sindh in 2009-10²⁵.

**TABLE-E5: SALE OF FERTILIZER (INDIGENOUS AND IMPORTED)
IN LARKANA DISTRICT, 2006-07 TO 2009-10**

(In "N" Tonnes)

S. NO.	FERTILIZER	2006-07	2007-08	2008-09	2009-10
1	Nitrogenous (N)	47,218	21,646	93,757	21,232
2	Phosphatic (P)	12,186	4,568	17,495	4,140
3	Potash (K)	574	79	555	49
TOTAL		59,978	26,293	111,807	25,421

Source: National Fertilizer Development Centre, Planning & Development Division, Government of Pakistan, Islamabad.

- Improved Seed**

The quality of seed is a basic requirement for increasing the production and productivity of the crop. It is a low cost input but has the potential to increase crop yield on an average by 20% as compared to non-certified seeds.

It is reported that sale of certified seeds in Larkana has been declining since many years. Most farmers use their own (farm) or obtain from market and vast majority have little access for quality control as the public agencies and market agencies do not provide more than 3 to 17 percent of good and certified seed for these crops. The less use of improved seed is one of the most serious factors for low yields.

- Pesticides**

Pesticides plays major role in protecting crops from the attack of pest and disease. It is estimated that crops losses, during the growth season and after harvesting, caused by insect and pests are considerably high to the extent of 25%. Many of these losses are avoidable, if proper preventive and curative measures are taken. Plant protection measures, dependent mainly on pesticides, are grossly inadequate even for the four leading crops. The most preferred use of plant protection measures on crops are now the ground sprays both as preventive and curative measures.

²⁵ Development Statistics of Sindh 2011, Bureau of Statistics Planning and Development Department, Government of Sindh

9.2 Livestock²⁶

Livestock is one of the major sub-sector of Agriculture and back bone of our economy. It contributes roughly one third in the total share of Agriculture GDP. Its main by-products including hides and skins have substantial potential as semi-finished products. A substantial growth on livestock products via milk, meat, beef, mutton, poultry and eggs have been noticed since many years. It has been estimated that over three-fourths of the farm power comes from animals, and they are used for most of the farm operations. Bullocks provide the draft power on farm and in transport around the villages.

9.2.1 Statistics – Livestock

Most farmers traditionally keep a few heads of livestock, ranging from buffaloes or cattle for milk to poultry for eggs & meat. There is a need for increasing the heads of livestock to supplement income by selling products. Production for market even at the expense of consumption at home has become quite common in many areas of Sindh.

Meat, hair, hides, skins and wool are the other major by-products of livestock. Beef is the most important type of meat. But most of this beef is produced from discarded old and milch cattle and buffaloes, and even buffalo calves. Mutton comes next in the market place, and it is provided by a variety of goats and sheep.

**TABLE-E6: NUMBER OF LIVESTOCK
IN LARKANA DISTRICT²⁷**

(In “000”)

S. No.	Livestock	1996	2006
1	Cattles	292	216
2	Buffaloes	501	531
3	Sheeps	225	52
4	Goats	281	248
5	Camels	2	1
6	Horses	2	1
7	Asses	87	82
8	Mules	1	---
9	Poultry	1868	890

Source: Pakistan Census of Live Stock, 1996 & 2006

9.2.2 Veterinary Institution

The under nourishment, disease and internal parasites, act as a serious constrain on animal production. The animals have to be guarded against ill health, and preventive and curative measures are required to be taken regularly. The veterinary hospitals, dispensaries and centres provide preventive and curative services for disease control for live stock. In all 59 veterinary institutions were available for health coverage and treatment facilities to the entire livestock of the Larkana District in 2007-08. While in the year 2009-10, only 32 veterinary institutions are

²⁶ Updated status is given in the Addendum - 2018 - page nos. 11-13

²⁷ Ibid

functioning in Larkana District. This shows that these are reduced to almost half in only two years of time span, which is quite alarming.

TABLE-E7: NUMBER OF HOSPITALS, DISPENSARIES AND VETERINARY CENTRES IN LARKANA DISTRICT

Sr. No.	Category	2006-07	2007-08	2008-09	2009-10
1	Hospitals	8	8	8	8
2	Dispensaries	1	7	8	8
3	Veterinary Centres	22	44	16	16

Source: Directorate of Animal Husbandry Sindh, Hyderabad.

9.3 Inland Fisheries²⁸

Inland fishing one of the main economic activities in Sindh province, is practiced in rivers, lakes and ponds etc. Fish not only supplements protein deficiency of food, but also earns foreign exchange for the country. Fishery contributes to both the national income and export earnings. Inland fish production has been increasing over the years. In Larkana District the inland fish production registered an increase of 46.2% to 12,315 metric tonnes in 2010 over the preceding year of 1997. Larkana District contributes 11.5% out of total 107,129 metric tonnes inland fish production of Sindh. As shown in Table-E8, 1,250 fishermen are engaged full time whereas 400 fishermen contributed their service for part time during the year 2010. Total number of boats used for fishing are 560, out of these 170 boats are sail type and 390 boats are row type.²⁹

TABLE-E8: INLAND FISHERIES STATISTICS OF LARKANA DISTRICT 1997-2010

Description	1997	2010
Fish Production (metric tonnes)	8,400	12,315
Fishermen Full Time	1,050	1,250
Fishermen Part Time	460	400
Total No. of Fishermen	1,510	1,650
Sail Boats	215	170
Row Boats	102	390
Total No. of Boats	317	560

Source: Directorate of Fisheries Sindh, Karachi 2010

Keeping in view the high rate of population growth, production from land resources will not be able to keep up with the population increase. Protein deficiency could become serious problem in near future. In order to solve this, fish production needs proper attention to exploit the abundant resources to meet the protein needs of a growing population.³⁰

²⁸ Updated status is given in the Addendum - 2018 - page no. 14

²⁹ Ibid

³⁰ Retrieved from: <http://sindhdevelopmentinstitute.blogspot.com/2005/03/larkana-economic-profile.html>

9.4 Industry³¹

Larkana is surrounded by vast areas of fertile farm land producing rice, wheat, rape/mustard seeds, tomatoes and guava. The industrial activity is very limited and relates to mainly rice processing, flour milling, and engineering relating to the operation and maintenance of agricultural machinery. Ten kilometers beyond the city, sugar cane is also produced supporting the lone sugar mill in the area. The following Table-E9 shows some statistic of Larkana; as major industry group of Sindh in Census of Manufacturing Industries:

TABLE-E9: MAJOR INDUSTRY GROUP FOR CENSUS OF MANUFACTURING INDUSTRIES (C.M.I) IN LARKANA 2005-06

S. No.	Description	(Value in "000" Rs.)
1	No. of Reporting Establishments	84
2	Value of fixed assets at the end of the year	61,980
3	Changes in stock during the year	(4,648)
4	Average daily employment during the year (Nos.)	1,949
5	Employment cost during the year	24,409
6	Industrial cost during the year	239,476
7	Value of production during the year	382,424
8	Gross census Value added during the year	142,948

Source: Development Statistics of Sindh 2011, Bureau of Statistics Planning and Development Department, Government of Sindh

9.4.1 Existing Industrial Units

The most significant & commercially viable industrial activity that emerged over time was “Rice Husking”. There were as many as 54 rice milling units in Larkana District of which 32 numbers (59%) alone were based in Larkana Taluka, employing more than 514 workers per shift of 8 hours.

The next in importance to Rice Milling is “Ice Making” activity. There are as many as 28 Ice Factories in the Larkana District of which 19 are located in Larkana Taluka employing 81 workers per day.

³¹ Updated status is given in the Addendum - 2018 - page nos. 14-30

Employment provided in each taluka of Larkana district by Rice husking mills and Ice factories is shown in below Table-E10.

TABLE-E10: INDUSTRIAL UNITS AND EMPLOYMENT SITUATION IN LARKANA DISTRICT

Taluka	Rice Mills		Ice Factories		Total No. (Rice Mills & Ice Factories)		Total % (Rice Mills & Ice Factories)		Labor per Unit (Rice Mills & Ice Factories)
	Units (No.)	Labor (No.)	Units (No.)	Labor (No.)	Units (No.)	Labor (No.)	Unit %	Labor %	
Larkana	32	514	19	81	51	595	62%	58%	11.67
Ratodero	15	269	5	22	20	291	24%	29%	14.55
Dokri & Bakrani	7	120	4	14	11	134	13%	13%	12.18
TOTAL	54	903	28	117	82	1020	100%	100%	12.44

Source: Prepared from data in "Industrial Establishments in Sindh-Directory", Directorate of Industries, Government of Sindh, Karachi., 1998.

The most of Rice Mills were established during 1970s and 1980s. Hence these plants have pretty old machinery and would need renovation to increase their output. The bulk of rice mills had 8 tons per shift capacity, employing on an average 20 persons.

The Sindh Small Industries Corporation had established an Industrial Estate in Larkana with 45 small industrial units functioning as self-employment scheme while 43 units were functioning under Small Scale Industrial Estate'. These units fall in the following groups:

- Oil Expellers
- Vegetable Ghee manufacturing units
- R.C.C. Pipe factory
- Building material (cement block making units)
- Daal making chakkies
- Chakkies for wheat grinding (flour making)

9.4.2 Small Scale Industrial Estate

In order to promote agro processing and agro supporting industries for the socio-economic development of Larkana, Small Scale Industries Corporations was launched in 1963, which was predecessor of Sindh Small Industries Corporation formed in 1973. The Small Scale Industrial Estate was launched on 60 acres of Land on both sides of Jail Road west and north of the District Jail. In all 313 plots were developed with the infrastructure facilities such as metalled roads, water supply, drainage and electricity. The plots have been allotted for the following cottage and small industries:

- Rice Mills

- Specialized Textile
- Engineering Workshops
- Agricultural Implements
- Wood Work
- Poultry Farming
- Oil Grain Milling
- Cold Storage
- RCC Pipe
- Larkana Bakery

The land in the industrial estate is fully allotted and there is still substantial demand for industrial land.

Problems in the Industrial Estate

The Chamber of Commerce and Industries has identified the following problems:

1. The infrastructure and roads are in dilapidated condition. The roads need immediate repairs and repaving
2. The industrial estate has no storm drainage and waste water disposal
3. There is no arrangement of cleanliness and solid waste disposal
4. Street lighting needs to be provided
5. A security wall around the estate is needed

9.4.3 Larkana Industrial Estate (LIE)

The Government of Sindh has earmarked 500 acres of land for new industrial estate on the Airport Road, but even after lapse of 5 years, no development work has been undertaken.

The need of new industrial estate is evident from limited economic and commercial activities in the district. LIE has been aimed for the development and promotion of local industries, which can add value to local raw material. It is expected that project will attract investment from local and foreign entrepreneurs, to accommodate their investment in small and medium scale industrial units for profitable ventures.

The project of LIE will be executed and maintained by Sindh Industrial Trading Estate (SITE) Limited. The total cost of the project is estimated as Rs. 2.4 billion. Approximately 50,000 skilled and non skilled job vacancies will generate from this industrial estate.

The project site of 500 acres is situated on 220 feet wide Airport Road, near Arija Village, between Moen-Jo-Daro Airport and Larkana City (shown in the picture below).³²

As per master plan of the estate prepared by LIE, this Estate will have agro based industries to utilize the agricultural production of a large catchment area of north Sindh. As reported in the project report of the Consultants of L.I.E.

³² EIA for Larkana Industrial Estate, Final Report January 2013, SITE

The following will be the potential industries, considering locally available raw material and human resource:

- Rice husking and milling
- Fruits and vegetables processing units
- Dairy products
- Grain mill products and animal feeds
- Flour mill
- Bakery products
- Ice plants
- Agricultural machinery manufacturing unit
- Light engineering
- Auto parts manufacturing
- Small electrical tools and allied products unit
- Packaging Industry

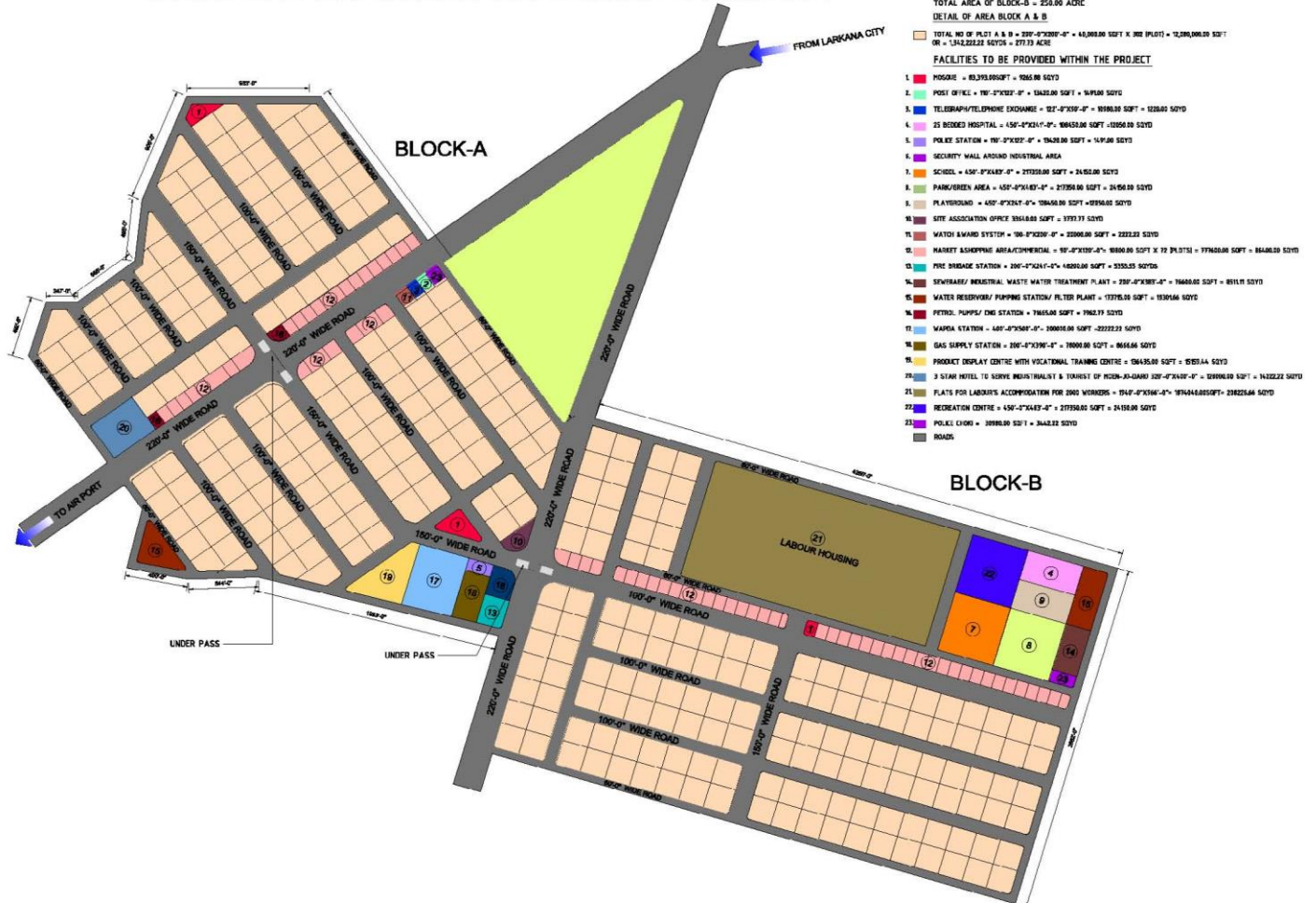
The project will be divided into two blocks of size 250 acres each. About 302 industrial plots of one acre each will be developed along with commercial and public facilities. These facilities include: banks, mosques, post office, telephone exchange, hotel and restaurants, petrol pumps, gird station, gas station, workers housing, vocational training centre, wholesale and trade markets, retail areas and shopping arcades, police station, bus terminal, recreational areas etc.



Master plan has made exclusive provision of land for labor colony. This includes flat accommodation for about 2,000 workers with school, hospital, recreation centre, park and playground. The Project also includes development of all necessary road networks, water reservoir and pumping station, water filter plant sewerage and garbage disposal system waste water treatment plants (shown in the map below).³³

33 Ibid

MASTER PLAN INDUSTRIAL ESTATE LARKANA



9.5 Trade and Commerce³⁴

Larkana has thriving commercial activities spread all over the old town areas. Commercial activities includes retail consumer's goods, wood work, electro-mechanical repairs, electronics and household items, fast food and restaurants, grain market, vegetable market, fish market, medical supplies and construction materials. There are also warehouses on Kambar Road and Miro-Khan Road owned by wholesalers and government.

9.5.1 Banks

All major commercial banks have branches in Larkana, which include Habib Bank Ltd. (HBL), National Bank of Pakistan (NBP), United Bank Ltd. (UBL), Allied Bank Ltd. (ABL), Muslim Commercial Bank (MCB), Faysal Bank Ltd, Askari Bank Ltd, Bank Islami, Standard Chartered and Bank Al-Habib. There is also branch of Small Business Finance Corporation (SBFC) and Agricultural Development Bank (Zarai Taraqiyati Bank Ltd ZTBL) which provides loans to farmers for better production of wheat and rice. After financing, the bank keeps tracks of its investment and evaluation of loan utilization. Usually land property is mortgaged and a loan up to 61 percent of their value can be provided on which a 14.5 percent markup subject to variation is charged. Sometimes personal guarantee is also acceptable if the loan demanded is up to Rs.50,000. The Small Business Finance Corporation (SBFC) has provided loans to the farmers and traders by requiring a land ownership certificates as mortgaging documents.



As reported by the Larkana Chamber of Commerce & Industry, the banks have a very conservative approach towards exports and imports and are reluctant to open Letter of Credit (L/C) for the local traders for rice and wheat exports. Besides loans are not easily approved and disbursed for SMEs.

9.5.2 Exports

There is substantial scope of exports from Larkana. Currently local products particularly rice, wheat and guava have surplus for local and international exports but usually the activity is carried out by rice exporters of Karachi after buying from local traders (middle men) of Larkana.

At present there are two companies in Larkana namely Reliance International Commodity Export and A.P. Enterprises Larkana, which are exporting rice directly from Larkana. Besides, there are several rice traders, who deal with rice exporters of Karachi. The local market committee needs to be encouraged to raise their capacity to provide export facilities to the growers.

Wheat has negligible exports at present due to a number of impediments and integrated action to remove them will increase surplus quantities.

³⁴ Updated status is given in the Addendum - 2018 - page nos. 31-32

- **Guava**

Guava is also a major production of Larkana which is a special variety branded as Larkana Guava. About 52,812 tonnes guava is produced in Larkana of which 20,000 to 25,000 tonnes is unofficially exported to Afghanistan, Iran and some CAR countries. Only about 10 thousand tonnes is consumed locally and rest (including most of summer production) is wasted. The large quantity of waste is due to short shelf life of guava. If the farmers are trained in processing and packaging, and air-cargo service is available from Larkana, the amount of wastage can be minimized resulting in high returns to the farmers.



Similarly Tomato production has exportable surplus, which is wasted when the price is not good. There is an urgent need to develop processing industries to minimize the waste and ensure better returns to growers.

- **Handicrafts**

The handicrafts of Sindh, rillies, ajraks, embroidery have great demand in the country and abroad. However there is lack of awareness among artisans and absence of support from the government to realize this potential. Trade Development Authority of Pakistan (TDAP) has no contacts with the local artisans and traders to show case local products abroad.

9.6 Potential

9.6.1 Potential Production

There is significant potential of increasing the agricultural production in the area and earning of the foreign exchange through exports.

- The production of rice and wheat can be increased substantially providing agricultural extension services to farmers for appropriate and timely use of certified seed, fertilizer, pesticides and water utilization. According to local experts, there is scope of increasing production by at least 25% in the per acre yield.
- The rice farmers are forced to use IRRI-6 and IRRI-9 seeds as the seeds of higher quality varieties are not available to them. On the whole only about 3 to 7 % of farmers have access to certified varieties of seeds. As the till-enders get water quite late, the high yielding late varieties of seed should be made available.
- About 121,191 tonnes of wheat is produced in Larkana and the production can be increased. However there is lack of marketing network and local awareness. Due to little holding capacity of the farmers, they are forced to sell to the traders, at low price.

Community ware-housing may encourage providing farmers opportunity to store wheat for sale at an appropriate time.

- Larkana is leading producer of Guava in Sindh. Unfortunately Guava has very short shelf life and 50 to 60% of the crop is wasted as it cannot be marketed in time. Farmers' training and facilitation in storage, processing and manufacture of juice and jams etc can substantially increase the farmer's income. Same is also true for tomato farmers.

9.6.2 Potential Work Force

As per population structure of 1998 census, around half of the population is a potential work force including females while the urban unemployment rate was 22.5%. During Consultant's survey 2013 it has been observed that 75.5% male are employed and 24.5% male are unemployed. Although up till now negligible numbers of females 5.2% are working outside, while 94.8% females are confined to homes.

TABLE-E11: EMPLOYMENT STATUS

Description	Male %	Female %	Total %
Employed	75.5%	5.2%	52.96%
Unemployed	24.5%	94.8%	47.04%

Source: Consultant's Survey 2013

But with the changing paradigm it is assumed that at least one fourth of the female work force will be encourage engaging in different economic activities, targeting an employment rate of 90% for males and 25% for females.

Thus, at present there is a shortage of 65,000 job opportunities has been work out, while there will be 119,000 additional job requirement expected during 20 years of plan period. Therefore, by 2033 there will be a need of additional 184,000 job opportunities to cater for upcoming work force in different sectors (medical, engineering, cottage industry, government officials, servants, service sector, trade and commerce, transportation) but majorly in agriculture and industries.³⁵

³⁵ Consultant's Estimates based on Table-E11 and Table-D5 in Section 7.5

10. TRANSPORTATION NETWORK

10.1 National and Regional Linkages

The transportation system of Larkana comprises of road, rail and air of which road and air are used exclusively for inter-city movement.

10.1.1 Air Service

Larkana has direct flights to and from Karachi as well as via Sukkur. The Moen-Jo-Daro Airport is located near the historical site of Moen-Jo-Daro which is a major tourist attraction. The airport is 28 km to the south of city with only 20 minutes drive through newly constructed dual carriage way road. PIA is flying ten flights a week between Karachi and Larkana. An alternative way to get to Larkana by air is to get flight from Sukkur airport which is about two hours drive by car from Larkana.

10.1.2 Railway

The City is also linked with the national network of Pakistan Railways through Quetta- Karachi railway line via Kotri. It used to be a Junction for change over to Qamber-Jacobabad branch line which is now abandoned. In the glorious days of Pakistan Railways, the railway station was the main gateway to Larkana and occupied a very central location in the heart of the city. With the decline of railways, it has lost its previous significance and only two passenger trains; Bolan Mail and Khushhal Khan Khatak Express; stop here. The extremely under used railway track can be utilized for mass urban transport within the city, which will substantially reduce traffic congestion in the centre of the city.



The railway station and adjoining railway land occupies 7.4 acres of prime urban land, which is used for parking by private vehicles and public transport including vans, taxis and buses.



10.1.3 Roads

Larkana is a tertiary level social service centre for a large hinterland in north Sindh. Thus it has significant connectivity with surrounding towns as well as other parts of the country through the regional and national road network. Indus Highway connecting Larkana with the national network; Ratodero Road is planned to provide road connectivity with Karakoram Highway and

Makran Coastal Highway ultimately linking China and Central Asian Republics with Gwadar Port. Beside a network of regional roads connects it to secondary cities and market towns. Private transporters run passenger buses and vans on all the regional routes.

There was an old bus stand in the city centre which has been abandoned and a new bus stand located on the northern outskirts of the city on the Naudero-Sukkur bypass road has been constructed. It has been observed that though the new bus stand has sufficient capacity, but the transporters are not using it and the vans and buses are found parked along road sides which reduce the road widths.



10.2 Local Network

The urban structure of Larkana does not conform to any standard street pattern, due to the organic growth in the past. The overall city depicts semi-radial structure, whereas newly developed parts of the city present grid iron pattern. The road network of Larkana as such does not have any clear cut hierarchy. A general hierarchal pattern of the city roads and streets are shown on the map attached titled 'Larkana Road Typology'.

10.2.1 Physical Condition of Road Infrastructure

The physical condition of existing road network of Larkana shows that, road geometry varies from road to road in a way that road rights of ways or cross sections do not follows the needs with respect to the traffic volumes. Most of the roads are without any lane distribution or lane markings. The road width varies at different sections of same road. Some major roads are in good condition like VIP Road, sections of Sir Shah Nawaz Bhutto Road & Airport Road, but most of the other roads are in poor condition.



The overall situation indicates poor pavement conditions, encroachments on foot paths and road sides, haphazard parking, open drains, etc. Most roads need rehabilitation as well as traffic management measures for smooth flow of traffic.

In the Central Areas (CBD) problems are mostly related to extreme congestion, even pedestrians movement during peak timings of commercial activities is difficult. Congestion is basically due to the heavy traffic volumes, narrow road widths due to road side encroachments, frequent and unchecked on-street parking; un-authorized qingqi³⁶ and rickshaw stands, poor physical and geometric condition of roads and intersections, open drainage system and lack of enforcement of traffic rules.

³⁶ Qingqi: locally pronounce as "Chingchi"

As per traffic counts carried out by the Consultants, in the city around 67% journeys are carried out on light vehicles (LV) consisting of cars, vans, including two & three wheeler vehicles (motorcycles, qingqi and rickshaw), 9% on heavy vehicles (HV) and 24% on slow moving vehicles (SMVs) like cycles & animal driven carts (ADCs). Among these, qingqi is the most convenient and economical for the urban poor in the city of Larkana. Since, there is no alternate public transport system available in the city, it is considered as sustainable means to travel at present. However, qingqi is one of the greatest menaces on the roads and needs to be regulated.



10.2.2 Traffic Condition

In order to determine the general nature and magnitude of traffic problems in the city, field traffic volume counts were carried out by the Consultants to determine:

- Traffic Flow
- Capacity Constraints
- Composition of Traffic



10.2.3 Traffic Counts

A full-fledged traffic survey was not possible in the short time available for the study. However, based on past records, discussions with the local citizens and on Consultants own observations, the following five intersections were selected for traffic count for the daily traffic flow. These five specific sites were also identified by a United Nations Habitat Study. The survey was carried out in three stages to complete a 12-hours count from 7:30 am to 7:30 pm.

TABLE-T1: LIST OF INTERSECTIONS COVERED BY TRAFFIC COUNTS³⁷

S. N.	Intersection	Streams	Time of counting			
1.	Attaturk Chowk	4	7:30 am – 9:30 am 9:30 am – 11:30 am	Break	12:30 pm – 2:30 pm	3:30 pm – 5:30 pm 5:30 pm – 7:30 pm
2.	Royal Chowk	4	7:30 am – 9:30 am 9:30 am – 11:30 am		12:30 pm – 2:30 pm	3:30 pm – 5:30 pm 5:30 pm – 7:30 pm
3.	Bhutto Chowk	3	7:30 am – 9:30 am 9:30 am – 11:30 am		12:30 pm – 2:30 pm	3:30 pm – 5:30 pm 5:30 pm – 7:30 pm
4.	Sheikh Zaid Chowk	3	7:30 am – 9:30 am 9:30 am – 11:30 am		12:30 pm – 2:30 pm	3:30 pm – 5:30 pm 5:30 pm – 7:30 pm
5.	Canal Bridge	1	7:30 am – 9:30 am 9:30 am – 11:30 am		12:30 pm – 2:30 pm	3:30 pm – 5:30 pm 5:30 pm – 7:30 pm

³⁷ Refer Annexure-A for Traffic Count Survey Map

10.2.4 Traffic Count

The general problem, as also agreed by stakeholders, is not of insufficient road capacity but it is definitely the lack of traffic management and clearance of roads from the encroachments and hawkers. The analysis of traffic count on individual crossings is given in the following sections.

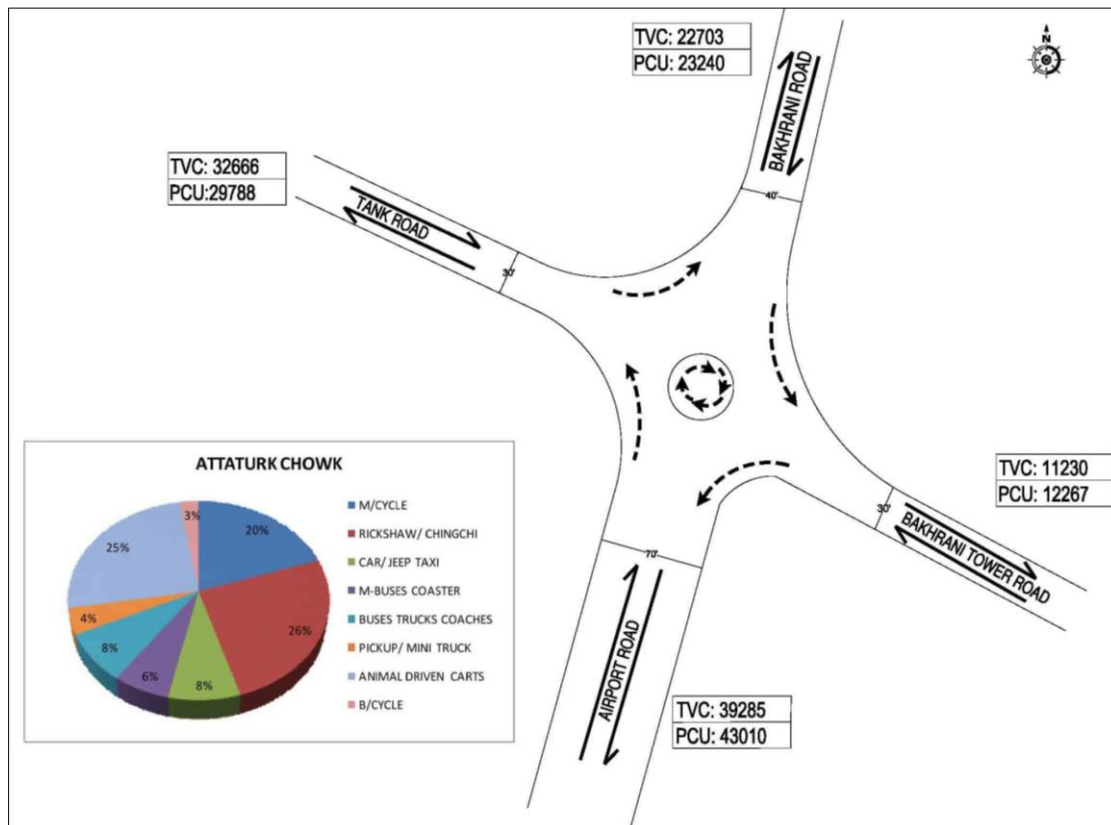
I- Attaturk Chowk

Located in lower south ward of the city, Ataturk Chowk (intersection) is a four legged non signalized intersection. It distinctly connects one of the main regional links; Airport Road, and three secondary distributors; Bakrani, Bakrana Tower & Tank Roads of Larkana City.



The evaluation of traffic volume with respect to road capacity shows that at this main intersection of Larkana city, majority of traffic volume flow is generating by Airport and Tank Roads. Whereas, Bakrana Tower Road which only collects traffic of residential areas located at the suburbs of the city, accommodates less traffic volumes.

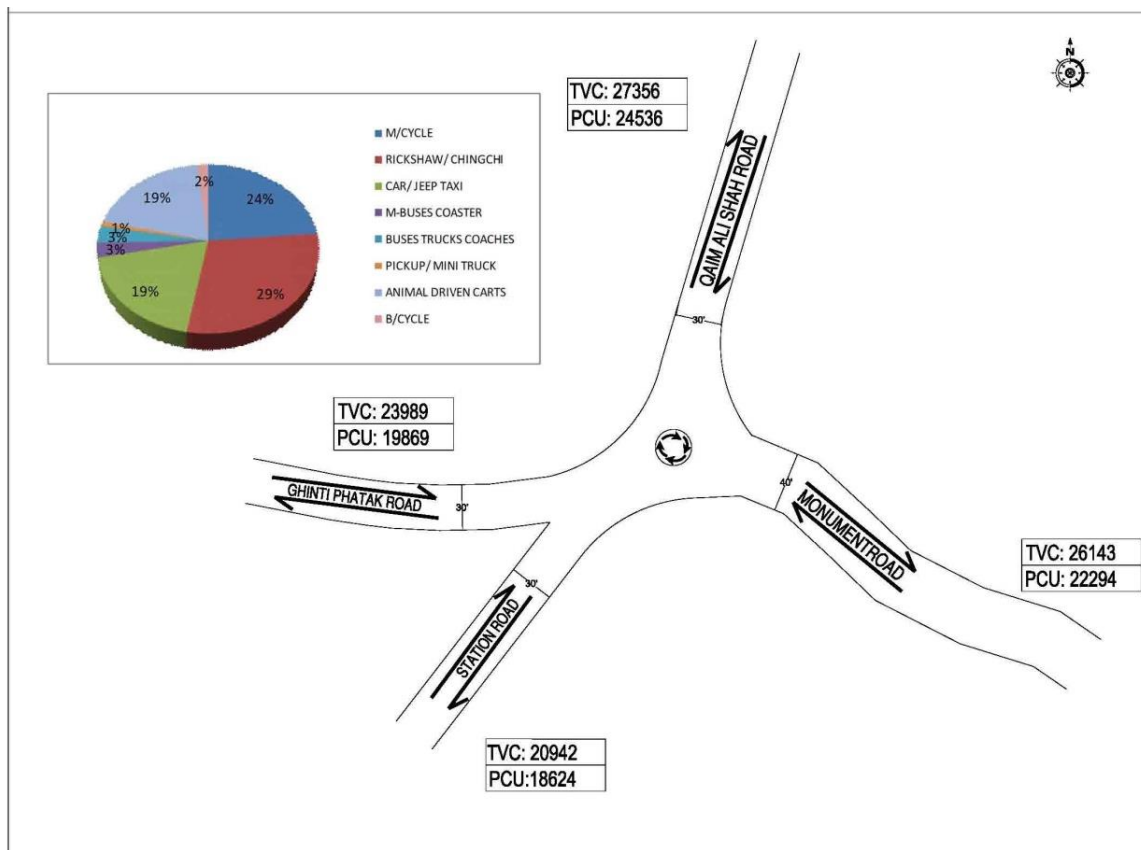
The traffic volume survey results also indicate that among various vehicle typologies, motor cycles (19.8%) and qingqi and rickshaw (25.45%) are dominant in traffic generation at this intersection. Qingqi and rickshaw are the most common affordable public transport mode used in Larkana City.



II- Royal Chowk

Royal Chowk is another four legged non-signalized intersection located at the centre of Larkana City, where traffic volume from Press Club, Monument Tower, Railway Station and Ghanti-Phatak converge together.

At this busy intersection of Larkana City, majority of traffic arrives from Qaim Ali Shah Road, followed by Monument Tower Road, Ghanti Phatak Road and Station Road. It was noted that LVs (74.58%) are dominant in traffic volume generation. The movement of HVs is low, which is approximately 4.16 % of total traffic volume.



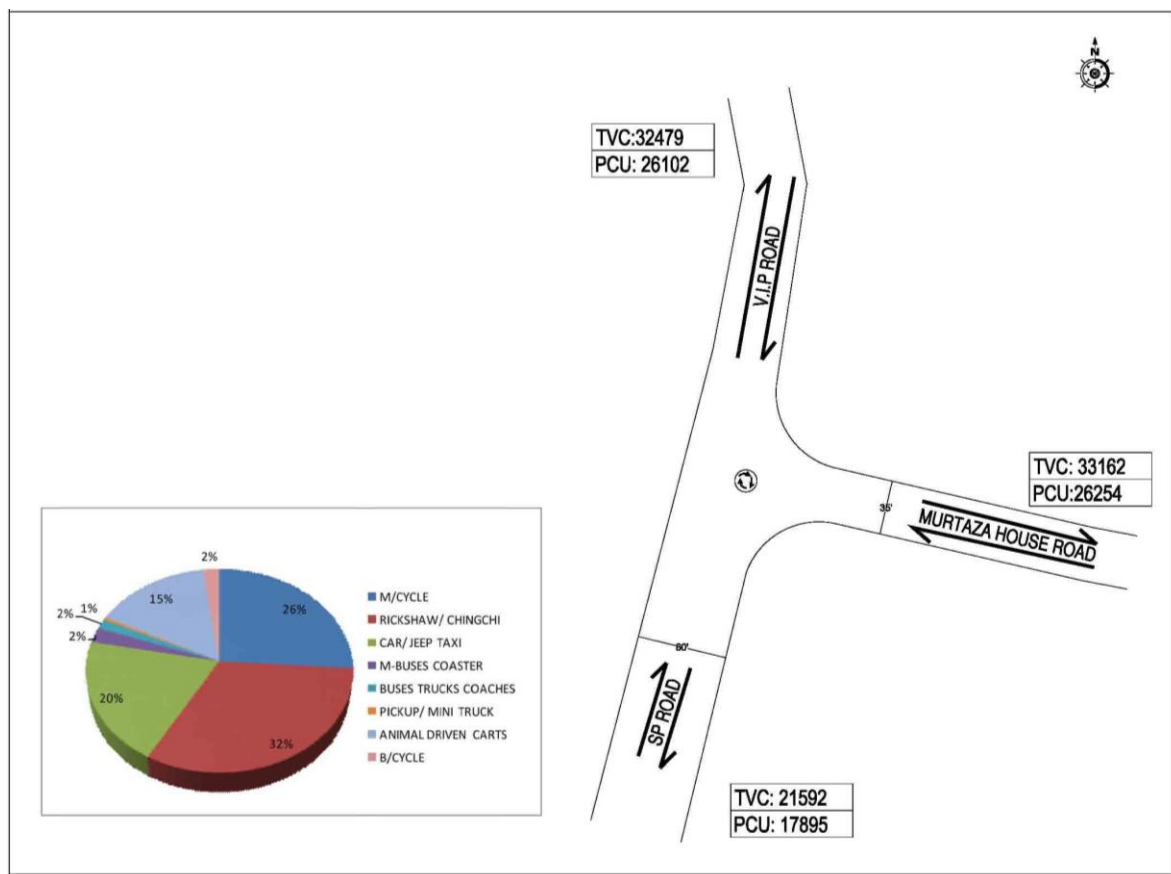
III- Sukrano Chowk

Sukrano Chowk is also known as ‘Tower Chowk’ or ‘Bhutto Chowk’. This three way intersection is located at east bank of Rice Canal.

Similar to traffic flow pattern of Attaturk Chowk, the movement of qingqi and rickshaw and motor cycles at this intersection is highest with a share of 58.22%. And the traffic volume of SMVs has been observed as low as 17.53% and HVs being the lowest as 2.01% at this intersection.



Murtaza House and VIP Roads are dominant in traffic volume generation. A mix of animal driven carts, qingqi and rickshaw, motorcycles along with irregular on-street parking and encroachments aggravate congestion problem at this intersection.



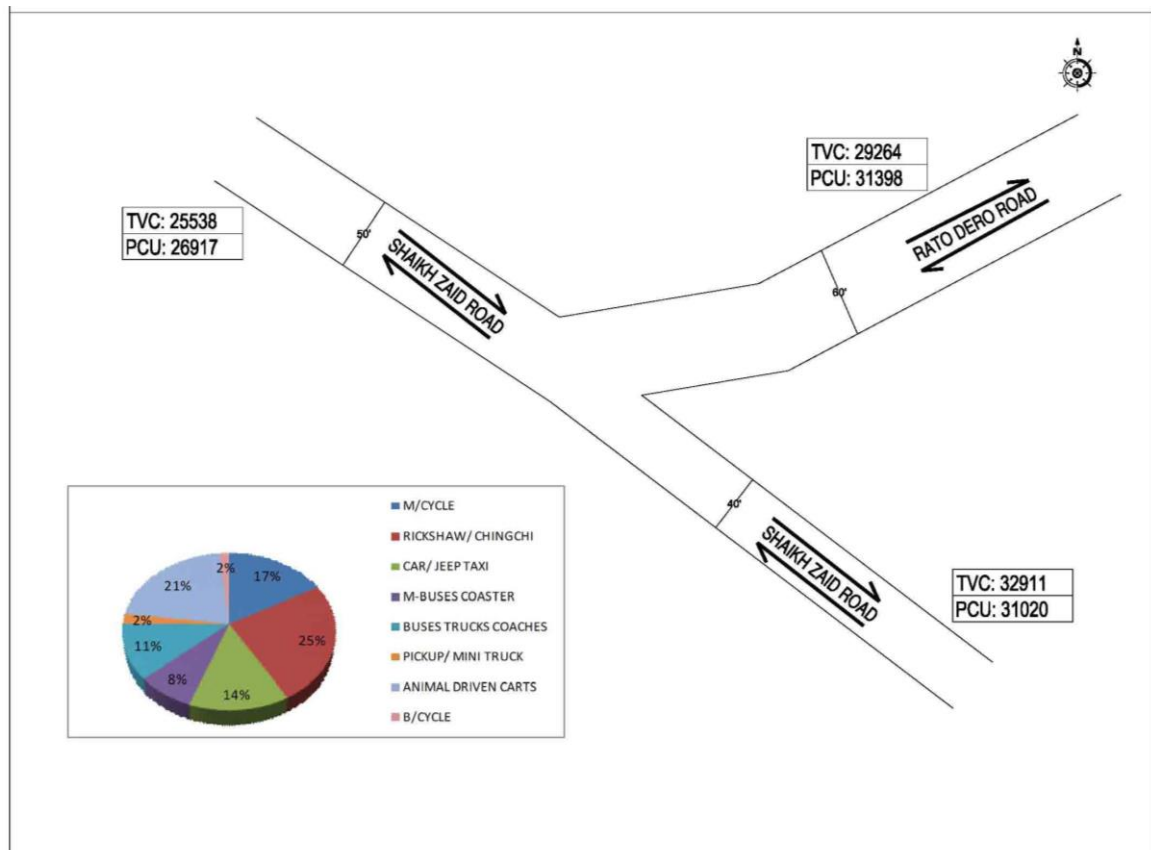
IV- Shaikh Zaid Chowk

Situated on west bank of Rice Canal, Shaikh Zaid Chowk is also a three legged non signalized intersection of Larkana City.

Traffic volume of this intersection has been observed as 63.46% LVs, 22.91% SMVs and 13.63% HVs as lowest. The traffic movement is slightly higher by Shaikh Zaid (Larkana) Road towards Naudero and Shaikh Zaid (Kamber) Roads.



The physical condition of all roads is very poor; asphalt bleeding and alligator cracks are common. On-street parking of public transport vans has also reduced the traffic circulation space of roads at this intersection.

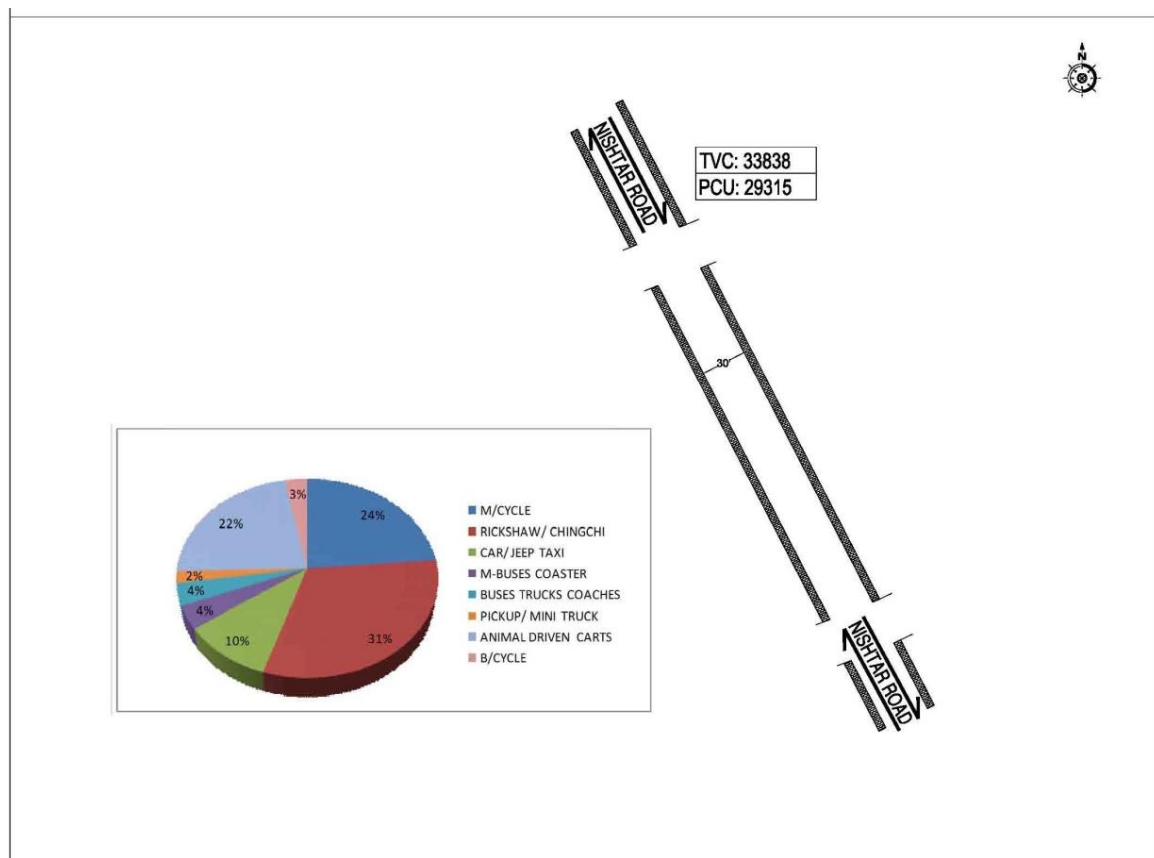


V- Canal Bridge Road

This is the most busy and congested road of the city. This road also offers a newly built bus terminal site which is not fully operational, as majority of bus & van operators park their buses along both sides of main Canal Bridge road just outside this bus terminal.



As a result the road space near the bus terminal is narrow and plays the role of bottle neck through which traffic flows at snail pace. Traffic volume of this road has been observed as 69.02% LVs, 25.42% SMVs and 5.56% HVs as lowest.



10.2.5 Volume/ Capacity Analysis

After calculating volume / capacity ratio, it has been observed that most of the roads have sufficient road widths and the available capacity can cater for the future traffic also. While some of the roads are almost utilizing their respective road capacities and may need expansion to accommodate future traffic. The further description is discussed below and shown in Table-T2:

- Bakhrana Tower, Qaim Ali Shah and VIP Roads are using about 30-40% of their available widths
- Ratodero and Shaikh Zaid (Larkana) Roads are using about 50% of their available road widths
- Bakrani, Airport, Station, Ghanti Phatak, Monument Tower and Murtaza House Roads are using about 70% of their road capacity
- SP and Shaikh Zaid (Kamber) Roads are using 90% of their available widths
- Only Tank and Canal Bridge/Nishtar Roads, are showing full utilization of their available widths, and may need expansion

TABLE-T2: TRAFFIC VOLUME CAPACITY RATIO

S. No.	Location	Average Traffic Volume (PCUs/hour)	No. of Lanes	Available capacity (100 PCUs/hour on 12'-0" Lane)	Volume Capacity Ratio
1	Bakhrani Road	2,325	2	3000	0.77
2	Bakhrana Tower Road	1,227	2	3000	0.41
3	Airport Road	4,301	4	6000	0.72
4	Tank Road	2,979	2	3000	0.99
5	Station Road	2,316	2	3000	0.77
6	Ghanti Phatak Road	2,282	2	3000	0.76
7	Qaim Ali Shah Road	2,454	4	6000	0.41
8	Monument Tower Road	2,229	2	3000	0.74
9	VIP Road	1,789	4	6000	0.30
10	Murtaza House Road	2,625	3	3500	0.75
11	SP Road	2,610	2	3000	0.87
12	Shaikh Zaid Road (Kamber)	2,692	2	3000	0.90
13	Rato Dero Road	3,137	4	6000	0.52
14	Shaikh Zaid Road (Larkana)	3,102	4	6000	0.52
15	Canal Bridge/Nishtar Road	2,930	2	3000	0.98

Source: Consultant's Survey 2013

Conclusions:

- As a regional service centre, Larkana suffers from poor transportation management system. Encroachment in the city centre has overburdened the infrastructure of CBD area. It is observed that open drainage further contributes to increased level of the problem. Illegal bus and qingqi stands, private unplanned parked vehicles are narrowing inner-city roads. Encroachments have sprung up on both banks of the Rice Canal.
- There is sufficient physical infrastructure available for the road traffic. However, due to encroachments, illegal parking, in-disciplined behavior of the road users, the available capacity of the roads is about half to 1/3rd of the actual capacity.
- Traffic woes of Larkana are greatly exacerbated by abundance of qingqis on all major roads and freely parked anywhere, thus creating traffic congestion. It is imperative that qingqis growth should be regulated by:
 - Registration of existing qingqis with Excise Department
 - Suspension of registration of new qingqis for next three years
 - Levi of motor vehicle taxes on qingqis
 - Designation of qingqis parking places and levi of fines on qingqis parked outside the designated places

These problems can be resolved or mitigated through:

- A comprehensive Sustainable Public Transport System study to be undertaken
- Feasibility study of BRT around the old city
- Registration of qingqis and regulation of qingqi and heavy traffic
- Proper traffic management system is needed (enforcement of traffic rules, parking restrictions, removal of encroachments, lane distribution, etc.)
- After removal of encroachments, new cross-section of roads should be executed and forcefully enforced after completion
- Addition of city-scapes, street furniture to attract visitors is required
- Additional services to be providing in the new bus stand to make it operational
- Trucking Station close to the new bus terminal is needed

11. UTILITY SERVICES

The whole of the city has a flat topography. The Rice Canal and Railway Track passes through the centre of the town in such a way that continuation of utility lines across the canal is difficult. This has created a constraint in the development of an integrated sewerage and drainage network for the whole city. The city's topography dictates that localized system of drainage and disposal should be developed.

Under an agreement water supply, sewerage, drainage and solid waste management has been assigned to specially created corporation named North Sindh Urban Services Corporation (NSUSC). The NSUSC is organized on corporate model and has very little technical knowhow. At present NSUSC is mainly dependent on janitorial staff of LMC, which has been a source of friction between two organizations. Interview with concerned officials and general public revealed that NSUSC has been greatly constrained in carrying out the job assigned to it in last two years and thus has earned irk of local administration and general public. In order to increase effectiveness of NSUSC, it would be important to delink it from TMA and make independent in term of staff and financing for the services assign to it.

The latest development of putting both NSUSC and Larkana Municipal Corporation under the Dy. Commissioner Larkana raises hope for better coordination and effective operation of sanitation and sanitation assets.

11.1 Water Supply³⁸

It is quite surprising that a city of the size and importance of Larkana has almost no piped water supply at present. A water supply scheme for supply of 2.5 mg/d potable water supply to Larkana was implemented by Public Health Engineering Department in 1970s, with 1.0 million gallon capacity overhead tank, pumps and distribution pipes, which has been completely deteriorated due to poor maintenance. The only residue of that scheme is the overhead tank and staff housing around it. The ground level structure of the over head tank is currently being used as offices of the PHED by filling the column grid with block walls. There is no proposal for the rehabilitation or reconstruction of piped water supply scheme in Larkana. All households and other establishments use ground water accessed through tube-wells or shallow wells with 0.5 horse power pumps or even hand pumps.

The water table is quite high and ranges between 4 to 10 feet with seasonal fluctuations. During summers (May to September), when Rice and Ghaar Canals



³⁸ Updated status is given in the Addendum - 2018 - page no. 35

have water, the water table rises to 4 feet, while in winters, when the canals are dry, the water table goes down to 10 feet. Tubewells are however sunk up to 200 feet depth.

11.1.1 Quality of Ground Water

The problem with the direct use of ground water is that the quality of water cannot be monitored at the household level. There is no information on the chemical and bacteriological quality of water and it may not be safe for drinking purposes. The TDS levels have been tested (by SCIP Consultants) around five years ago which gave a figure of 500 to 1000 mg/liter which meant water is only marginally potable. However, latest testing done in 2013 by PHED shows TDS levels have sharply increased and range from 1500 to 2200 depending upon the distance from the river / canal. For example samples tested by Global Environment Management Service in 2013 taken at Arija shows TDS level only 980.³⁹

11.1.2 Need Assessment / Supply-Demand Gap⁴⁰

There is no verifiable figure of the water consumption in Larkana. The SCIP Consultants have estimated the daily water consumption to be over 30 gallons per capita per day or 136 liters / capita / day. On this basis, the present water demand is likely to be about 13.8 million gallons per day. As city's population increases, water demand will also increase due to population growth and changes in life style. It is expected that in next 20 years, water demand will rise to 40 gallon per capita per day, due to wider use of flush toilets and changes in living habits and urban landuse. Therefore, the total water demand in the city estimated to be 34.2 million gallons per day by 2033.

11.1.3 O&M Cost and Tariff System

As there is no piped water supply system exists in the city, therefore there has been no conservancy tax collected, similarly no tariff structure exists for water billing. Operation and maintenance has been done from the LMC budget. Operation cost is covered from establishment (salaries) and contingency funds, while maintenance and repairing of hand pumps has been done from M&R Development Works funds.

11.2 Sewerage and Drainage⁴¹

Sewerage and Drainage is Larkana's biggest problem and from administration to common citizens every one considers, the waste water and storm water drainage a matter of highest priority. The lack of drainage not only causes extreme inconvenience to residents after every rain, but the standing water causes damage to the infrastructure, which is already in poor condition.

A detailed study of Larkana drainage has been done by RCC Consultants under SCIP programme with the findings included in the "Sanitation Drainage and Sewerage Strategy and Prioritized Action Plan Report". The assessment of existing drainage by RCC Consultants is as follow.

³⁹ For detail refer Section 14.9.3

⁴⁰ Updated status is given in the Addendum - 2018 - page no. 35

⁴¹ Updated status is given in the Addendum - 2018 - page no. 35

11.2.1 Existing Drainage Facilities

Larkana is served by a combination of open drains, sewers and covered collector drains. In general, open drains were provided first. Even in areas served by collector sewers and covered drains, much of the tertiary system consists of standard open drains. The main sewer system was initially laid in 1972 to serve a population of about 100,000. It incorporated about 6.1 km of RCC pipe sewers ranging from 12 to 36 inches diameter, together with several kilometres of surface drains. The main outfall pumping station, which pumped waste water into a waste stabilization pond, which finally discharged effluent to a SCARP drain. This system was expanded in 1980 and 1983 to bring the population served to an estimated 170,000. Most of the system is in old town area, with some sewers and open drains extending into Central Part.

Smaller sewer systems were also constructed in the early 1970s to serve Sachal Sarmast Colony in the south-west and in the early 1980s to serve Sheikh Zaid Colony in the north-west of the town.

In 1995, three new open drains were constructed in the north-eastern zone to convey water to new waste stabilization pond (WSP), constructed under the same scheme and located to the east of the city. Each of the three drains is served by a pumping station at its western end, which lifts wastewater into the waste stabilization pond and from where it was planned to pump the treated waste water through a long rising main into Dadu Canal. But it is alarming that presently most of these WSP either not in working condition or not exist in the city.

By early 2000s, all sewers were in poor condition, with many completely blocked. The consultants RCC was commissioned to develop a scheme to replace non-functional sewers and opted to use a system of covered drains, referred to as brick lined concrete covered sewers or BLIS.

BLIS drains have been installed to replace most of the existing sewers in the Central Part and Old Town Area and have also been used to replace parts of the Sheikh Zaid Colony system in the north-west zone. Implementation of the new system began in November 2006 and was completed by end June 2009.

The 'planned' drainage systems described above covers approximately 50% of Larkana's area and population. Other areas include; Railway Staff Colony, Police Head Quarter, Rehmatpur Muhallah, Labor Colony, Murad Wahan, Khaliq Colony, Allahabad Muhallah and Khudabad Muhallah, are served by local systems, developed in a generally ad-hoc



manner terminating to small pumping stations. Many of the latter are in poor condition and few have standby pumping capacity. Many of pumping / disposal stations discharge (raw) waste water to the Rice Canal or SCARP Drain.

At present there are 39 pumping / disposal stations in the city out of which 34 are in full operation. The locations of these disposal stations are given in Table-UI and shown in the map titled 'Larkana Drainage Master Plan'.

TABLE-UI: DISPOSAL STATIONS

S. No.	UC's	Description
1	6	Aqil Road DS
2	9	Baitulmal Colony DS
3	5	Bhurgiri Colony DS
4	4	Cattle Colony DS
5	10	Police Station DS
6	3	Degree College DS
7	7	Ghulam Ali Bhutto DS
8	3	Khosa Muhalla DS
9	6	Kosar Mill DS
10	6	Luhur Colony DS
11	11	Main DS Bakhrani Road
12	1	Jamia Masjid DS
13	1	Moazam Colony DS
14	4	Nazar Muhalla DS
15	9	Phull Road DS
16	7	Pir Sher Road DS
17	1	Rasool Abad
18	5	Railway Rehmatpur DS
19	2	Sachal Colony DS
20	2	Shahbaz Colony DS
21	1	Yousif Abad DS
22	7	Zulfiqar Bagh DS
23	1	Rasool Abad DS
24	5	Stadium DS
25	5	SDM Office DS
26	2	Ghareeb Abad DS
27	5	Lahori Muhalla DS
28	2	Darol Aman Sheikh Zaid DS
29	2	Sheikh Zaid Colony DS
30	5	Police HQ DS
31	5	Collectorate DS
32	11	Golimar DS
33	5	Railway Colony DS
34	11	NHA DS
35	11	Attaturk DS
36	1	Ali Abdullah Shah DS
37	2	PHED DS
38	1	Jail Colony DS
39	11	Allah Abad DS

11.2.2 NSUSC Capacity

At present the newly created corporation NSUSC is responsible for disposal of waste water, collection and disposal of solid and liquid wastes.

NSUSC is equipped with two suckers, a jetting machine and one set of winch machine for disposal of the waste water from the affected areas and cleaning of drains. There are also sixteen dewatering sets for dewatering of ponding areas to avoid water stagnation. In terms of manpower NSUSC has 120-130 numbers of staff responsible for waste water system maintenance including; disposal operators, nalla and gutter line teams, field workers and rising main repair staff.⁴²



Beside all these efforts and available facilities, still broken sewers and water ponding found in the city. The main reasons causing all these visible problems are:

- Lack of funds for maintenance and repairing
- Large financial liabilities of salaries and payments
- Short fall of primary workers



11.2.3 Need Assessment / Supply-Demand Gap⁴³

The present amount of waste water cannot be measured, as it contains both sewage and storm water. Considering SCIP Consultants estimates for present water demand, about 9.7 million gallons per day (70%) is estimated as the present waste water production. With the urbanization, water demand and discharge will also increase due to changes in life style. It is assumed that by 2033 sewerage water discharge in the city will reach to 23.9 million gallons per day approximately.

⁴² NSUSC Larkana

⁴³ Updated status is given in the Addendum - 2018 - page nos. 35-36

11.2.4 O&M Cost and Tariff System⁴⁴

Similar to water supply, no conservancy tax has been collected by revenue department and no tariff structure exists for sewerage and drainage billing. Even NSUSC being liable has no financial capacity to generate its funds, therefore operation and maintenance has been done from the LMC budget. Operation cost covered from establishment (salaries) and contingency funds, while maintenance and repairing of drains, manholes, pumping stations and machinery has been done from M&R Development Works funds.

11.3 Solid Waste⁴⁵

TMA was responsible for collection of solid waste and its disposal. However, the LMC does not have enough human or financial resources to carry out the responsibility. At the time of partition Larkana Municipality had 1,000 sweepers; today they hardly have one fourth of that number even though the city size has grown substantially. The result is that roads and streets are not swept for days. LMC had three dumping sites, which have now been fully filled. The new site is yet to be finalized.



11.3.1 NSUSC Capacity

The NSUSC working in collaboration with Taluka Municipal Administration is serving with 491 SWM (solid waste management) staff. The operation mechanism is based on primary, secondary and tertiary collection to disposal at sanitary landfill. The Primary Collection includes sweeping of streets and roads, cleaning drains from silt and waste collection with wheel barrow in two shifts. The Secondary Collection includes 160 skips, 12 different types of loader trucks, 10 tractor trolleys and loader, new dumper and master (hook lift), to carry solid waste to disposal stations. In the Tertiary Collection back mounted crane is supposed to transport solid waste to the transfer stations by lifting skips, from where waste is finally dumped into Sanitary Landfill Site. They are also equipped with blade tractor and excavator machine for the formation of landfill site.⁴⁶



⁴⁴ Updated status is given in the Addendum - page no. 36

⁴⁵ Updated status is given in the Addendum - page no. 37

⁴⁶ NSUSC Larkana

With all these efforts, designated Sanitary Landfill Site for further disposal is still missing and in the meantime, the garbage is dumped everywhere possible. Most of this garbage finds its way into the drains and chokes them, further aggravating the drainage problem. The choked drains cause flooding in the town and need to be desilted.

11.3.2 Hazardous Wastes

Larkana serves as the regional health centre for a large catchment area and thus has several health facilities. The hazardous waste management system has been relying on two old incinerators, present in the Chandka central laboratory. Out of which, one is of larger capacity but it is not functional due to low pressure of gas, while other with much smaller capacity is operational. This small incinerator is serving all hospitals in the city while LINAR Hospital is manually dumping its waste within its own premises and later burns it out. These incinerators are of insufficient capacity and secondly are of outdated technology, causing nuisance in the process of safe disposal of harmful waste.

11.3.3 Need Assessment / Supply-Demand Gap⁴⁷

By assuming solid waste generation at the rate of 0.5 kg per capita per day (as per NRM), it is estimated that at present city population of 460,000 generates 230 tons solid waste per day (84,000 tons per year). This require approx 6 acres landfill site (0.5 acre per year per 10,000 population as per NRM)⁴⁸ at present to accommodate disposal in four layers. While by 2033, there is a need of approx 11 acres landfill site to accommodate 430 tons per day (156,000 tons per year) of 854,000 population, disposal in four layers. Sanitary landfill site is required to be allocated away from any residential area.

11.4 Fire Fighting System

The Fire Brigade Station is situated in TMA office Larkana. This station is consisting of two functional and four out of order fire vehicles. While there is a current need of five sub-stations to accommodate ten fire vehicles more. The LMC has very low budget for the maintenance of vehicles and at times has no diesel in the stock to run the vehicles.⁴⁹

11.5 Energy (Gas, Electric Power, Alternate Energy)

Natural gas and electric power network exist in the city but the supply of gas and production of electric power is going through a national energy crisis and the supply has become erratic.

11.5.1 Natural Gas

The natural gas has been supplied to almost entire city. The main gas supply is through an eight inch dia PE⁵⁰ pipeline, passing through the middle of the city. The secondary and tertiary distribution of PE pipeline varies from five inches to one inch dia, out of which four inch dia

⁴⁷ Updated status is given in the Addendum - page no. 38

⁴⁸ Refer National Reference Manual: Section 8.4.6, Table 8.10 on page no. 243

⁴⁹ TMA Office Larkana

⁵⁰ PE: Polyethylene

pipelines are of steel and found rarely. The following Table-U2 shows location of existing gas pipelines in the Larkana City:

TABLE-U2: EXISTING GAS PIPELINES

S. No.	Dia Thickness (inches)	Material	Roads / Areas
1.	8"	PE	Bakhrana Tower Road, Ataturk Chowk, Station Road, College Road, Jailus Road, Nishtar Road, Indus Highway N-55
2.	5"-2.5"-1.5" (125mm-63mm-40mm)	PE	Airport Road, Allahabad Muhallah, Khudabad Muhallah, Ali Goharabad, Khaliq Colony, Rind Colony, Lailabad Muhallah, Darwaish Wahan Muhallah, Karamabad Muhallah, Dari Muhallah, Jhangal Shah Tona Colony, New Muhammad Pir Muhallah, Sheikh Muhallah, Mero Dero Muhallah, Jafri Muhallah, Peoples Colony, Brohi Muhallah, Dhomki Colony, Zulfiqar Colony, Murad Wahan Colony, Sarwar Colony, Surra Paddar Muhallah, Mirani Colony, Ayub Colony, Hussani Muhallah, Murtaza Colony, Yousufabad,
3.	4"	Steel	VIP Road near SDM office, Dargah Shah Road near Pakistan Chowk, Pir Shah Road
4.	2"-1"	PE	Bakrani Road, Moazam Colony, Muhallah Baharpur, Faisal Colony, New Shahbaz Colony, City Colony, Ghaziabad Colony, Somro Muhallah, Luhar Colony, Rasoolabad Muhallah, Saif Colony, Ali Asghar Colony, Ali Abbas Colony, Siddiqui Colony, Channa Muhallah

11.5.2 Electric Power

In the city of Larkana, electric problems like most cities nationwide, serious power shortage is being faced by the people and economic activities have suffered heavy losses; due to load shedding, low voltage and continuous tripping.

The main problems cited by WAPDA officials are:

- The distribution network is overloaded and need up-gradation. WAPDA officials suggest the overhead cables should be replaced with ABC cables, which have longer life and have less line losses.
- WAPDA has run into huge arrears of unpaid bills, which has reached a staggering amount of Rs.4.0 billion. Government's intervention is required to get the arrears paid by consumers.

At present there are 142 feeders in the Larkana District, out of which 22 feeders are supplying electric power to 1,540 PMTs in the Larkana City.⁵¹

⁵¹ WAPDA Office Larkana



There are three grid stations in Larkana: two are 132/11KV, while one is 66/11KV supplying a total of 448 MW power, not only to Larkana city but also to some other areas of Larkana District. To overcome electric power and supply issues, a request of 132/11 KV grid station by LCCI is under consideration. This grid station is supposed to be located along Larkana Kamber Road, from where the double circuit 220 KV line from Dadu to Khuzdar (under construction) is approximately 16 kilometers away.⁵²

The details of existing Grid Stations are as shown in the Table-U2:

TABLE-U3: EXISTING GRID STATIONS

S. NO.	Capacity	Location
1	66/11 KV	Miro Khan Chowk
2	132/11 KV	Rato Dero Road
3	132/11 KV	Airport Road

11.5.3 Need Assessment / Supply-Demand Gap

According to local WAPDA officials, the supply to Larkana city is about 264 MW (on average 12 MW per feeder) including the street lights. This shows that WAPDA supplies 574 watts per person or 4.23 KW per household approximately.

The demand is steadily increasing at the rate of 10-15 percent per annum.⁵³ Therefore, the energy demand in 2033 estimated in range of 792-1056 MW, to fulfill the future demand.

11.5.4 O&M Cost and Tariff System

WAPDA has its tariff system similar to other electric power supply corporation in Pakistan, but in Larkana rate of defaulters is quite high. The generated revenue is used for the operation and maintenance. But due to high rate of defaulters financial capacity is low to enhance the quality of service.

11.5.5 Alternate Energy

The power demand is not only for houses and business, but also for street lighting, industry and irrigation. WAPDA has already experimented with alternate technology and installed solar street lights on some streets. The results are not satisfactory. Besides vandalism and theft, the light intensity from solar lights is low. The solar energy has better chance of success in its application in tubewells, where they are less vulnerable to vandalism. It is proposed that, the dependence on the thermal and hydro power may be reduced and the government should provide incentives for alternate energy such as wind, solar and bio gas etc.



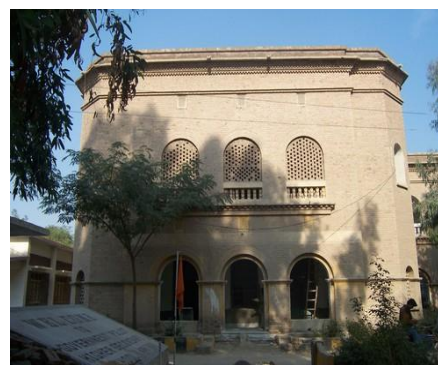
⁵² Letter from Larkana Chamber of Commerce and Industry

⁵³ WAPDA Office Larkana

12. COMMUNITY FACILITIES⁵⁴

12.1 Education⁵⁵

Larkana is the most important settlement in the northern Sindh, performing high-order functions in the education sector. The beneficiaries of the education services come not only from within the district but from the entire Larkana Division and even beyond. Thus, Larkana has been growing into a city of universities and colleges and becoming an educational capital of entire north Sindh.



12.1.1 Educational Attainment

The literacy rate of Larkana in 1998 census was 34.9%, compared to 1981 census showing an increase of 12.83%. Out of total educated persons, 33.69% had passed primary, 15.39% middle, 30.7% matriculation and 7.89% intermediate, besides 5.96% were graduates and 3.53% post graduates.⁵⁶

As per the consultant's sample survey results shown in Table-C1, the literacy ratio is 46.88%. There is sharp difference in the literacy ratios by sex. The 63.89% of males are literate against only 27.64% females, out of which 37.4% females have education only up to primary level. But overall 29.18% educated persons passed primary, 12.62% middle, 14.81% matriculation, 20.94% intermediate, 14.21% graduates and 8.24% post graduates.

TABLE-C1: EDUCATIONAL ATTAINMENT

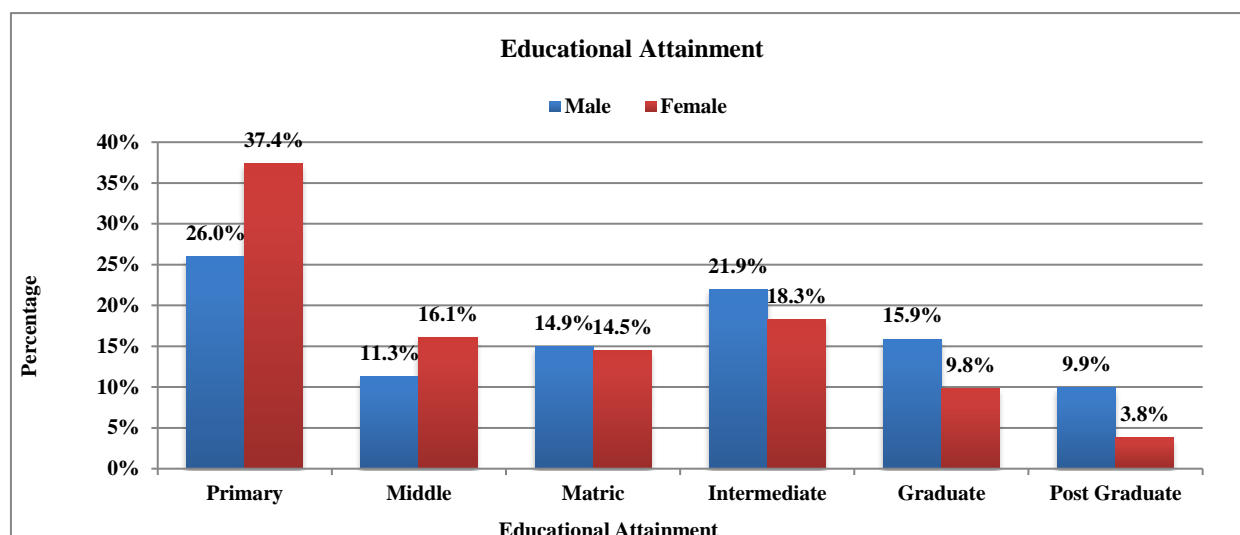
S. No.	Description	Male %	Female %	Total %
1.	Primary	26.0	37.4	29.18
2.	Middle	11.3	16.1	12.62
3.	Matric	14.9	14.5	14.81
4.	Intermediate	21.9	18.3	20.94
5.	Graduate	15.9	9.8	14.21
6.	Post Graduate	9.9	3.8	8.24
A.	Literate	63.89	27.64	46.88
B.	Illiterate	36.11	72.36	53.12

Source: Consultant's Survey 2013

⁵⁴ Updated status is given in in the Addendum - page nos. 44-78

⁵⁵ Updated status is given in in the Addendum - page no. 44

⁵⁶ 1998 District Census Report of Larkana



12.1.2 Educational Institutions

The first Higher Secondary School (Government Pilot HSS) was established in 1926. In 1947, there were only 9 primary and 3 secondary schools in Larkana. The number increased up to 30 primary and 4 secondary (middle & high) schools by 1970s. By 1985, Larkana had already become a regional centre for education with 44 Primary, 9 Secondary, 6 Colleges and four Vocational institutes; with the passage of time these number are rising. The Table-C2 below shows number of public and private educational institution, enrolment and teaching staff in the Larkana District in 2011:



TABLE-C2: EDUCATIONAL STATISTICS OF LARKANA DISTRICT

S. No.	Level Of Education	Numbers			Enrollment			Teachers		
		Boys	Girls	Total	Boys	Girls	Total	Male	Female	Total
1	Primary Schools	975	248	1,223	94,449	71,892	166,341	3,694	1,285	4,979
2	Middle Schools	43	24	67	3,789	4,331	8,120	172	103	275
3	Sec.& Higher Sec. Schools	41	20	61	32,690	18,768	51,458	1,117	472	1,589
4	Intermediate Colleges	1	-	1	1,105	-	1,105	18	-	18
5	Degree Colleges	4	1	5	8,432	4,021	12,453	171	61	232
6	Technical Colleges	2	-	2	763	-	763	19	-	19
7	Vocational Institutes	-	7	7	-	275	275	-	8	8
Grand Total		1,066	300	1,366	141,228	99,287	240,515	5,191	1,929	7,120

Source: Development Statistics of Sindh 2011, Bureau of Statistics Planning and Development Department.

In Larkana District, the average number of pupils per classroom is 56.65, while average number of pupils per teacher is 34; ranging from 27 pupils per male teacher and 51 pupils per female teacher.

**TABLE-C3: LIST OF GOVERNMENT SCHOOL IN LARKANA CITY
(UC-1 TO UC-11)**

Larkana UC's	No. of Govt. Schools			No. of Class Rooms			Enrollment			Govt. Boys Schools				Govt. Girls Schools			
	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	GBPS	GBLSS	GBHS	GBHSS	GGPS	GGLSS	GGHS	GGHSS
UC-1	10	8	2	62	45	17	4,926	4,418	508	6	1	1		1	1		
UC-2	16	10	6	114	77	37	6,541	4,183	2,358	8		2		5			1
UC-3	4	3	1	42	37	5	2,688	2,067	621	3						1	
UC-4	15	8	7	62	37	25	4,893	2,340	2,553	7	1			6	1		
UC-5	11	7	4	182	144	38	13,413	11,284	2,129	4		1	2	2	1	1	
UC-6	10	7	3	50	33	17	4,433	2,304	2,129	6		1		2		1	
UC-7	4	3	1	14	12	2	1,909	1,419	490	2		1			1		
UC-8	13	5	8	146	83	63	12,850	6,157	6,693	3		2		5		3	
UC-9	7	3	4	45	24	21	2,376	1,517	859	2		1		3	1		
UC-10	6	4	2	48	30	18	1,946	1,651	295	4				2			
UC-11	5	2	3	35	21	14	3,101	1,864	1,237	2				3			
Total	101	60	41	800	543	257	59,076	39,204	19,872	47	2	9	2	29	5	6	1

Source: Education Works Department, Larkana 2014.

Some important public sector schools and colleges in Larkana City are listed below:

- Government Pilot Higher Secondary School
- Municipal High School
- District Council High School
- Girls High School
- Public School, Larkana
- Government Degree College
- Government Pilot College
- Municipal College
- Government Girls College
- Cadet College, Larkana



Beside public institutions, the city also has several private schools, colleges, institutes and universities; which cater for middle and high income groups and include:

- The City School
- The Educator
- Elite English High School



Higher Education

In the field of professional education Larkana is playing a vital role in north Sindh by having institutes like, Chandka Medical College (1973) which is up-graded to Shaheed Mohtarma Benazir Bhutto Medical University, for which a new campus is being built on 220 acres land acquired at Airport Road and the construction work is in progress.



Other important institutions are:

- Zulifqar Ali Bhutto Agricultural College
- Arts & Commerce College
- Law College
- Polytechnic Institute
- Teachers Training College
- Nursing School
- Paramedical School
- Police Training School
- SZABIST-Campus
- Quaid-e-Awam University of Engineering &



Technology (for which 250 acres of land has been acquired on Airport Road and the work is in progress)



There is an old library in the city named Shahnawaz Bhutto Library near SP Chowk. This library is serving the whole city.



12.1.3 Physical Conditions

According to the statistics provided by Education Works Department Larkana, conditions of school buildings cut a sorry figure. Only 33.95% school buildings are in satisfactory condition, 46.68% buildings need minor repairs, about 13% of building structures are in dangerous condition and 6.37% schools are running without any building at all. Even the first school building of Larkana city (The Pilot High School, 1926) is still in better condition compared to structures of school buildings which were constructed much later. The school buildings are however, better served with basic facilities as; 75.33% schools have toilet facilities, 88.86% have access to water and 91.78% have provision of electricity.

TABLE-C4: PHYSICAL CONDITIONS OF GOVERNMENT SCHOOLS IN LARKANA CITY

School Level	Condition of Schools Building				Services provided in Schools		
	Satisfactory	Need Repair	Dangerous	No Building Exist	Toilets	Water	Electricity
GBPS	30.9%	47.7%	13.4%	8.0%	72.5%	87.8%	93.5%
GBLSS	37.5%	62.5%	0.0%	0.0%	37.5%	87.5%	87.5%
GBHS	40.0%	46.7%	13.3%	0.0%	100.0%	100.0%	100.0%
GBHSS	66.7%	33.3%	0.0%	0.0%	100.0%	100.0%	100.0%
GGPS	38.0%	45.1%	14.1%	2.8%	83.1%	88.7%	85.9%
GGLSS	37.5%	37.5%	12.5%	12.5%	62.5%	100.0%	75.0%
GGHS	55.6%	33.3%	11.1%	0.0%	88.9%	88.9%	88.9%
GGHSS	100.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%
Total	33.95%	46.68%	13.00%	6.37%	75.33%	88.86%	91.78%

Source: Education Works Department, Larkana 2014.

School furniture also needs to be repaired/ replaced and additional furniture and other educational aid materials according to requirement also need to be added to enhance the functional efficiency of schools. In respect of extra-curricular/ physical activities, students are suffering from lack of play grounds in school premises. Unfortunately very few schools at primary level and only one school at secondary level, have playground.

12.1.4 Need Assessment⁵⁷

Assuming an occupancy of 30 students per class room for primary & middle level (GBPS, GGPS, GGLSS, GBLSS) and 40 students per class room at secondary and higher secondary level (GBHS, GGHS, GBHSS), total enrollment and available number of class rooms shows that there is a present shortage of class rooms 50.7% and 61.93% at primary/middle level and secondary/higher secondary respectively. The need can be fulfilled by providing new class rooms in existing school buildings or providing new school buildings with provision of play grounds and other facilities.

TABLE-C5: PRESENT NEED ASSESSMENT OF LARKANA CITY

S. No.	Description	LEVEL	
		GBPS, GGPS, GBLSS, GGLSS	GBHS, GGHS, GBHSS, GGHSS
1	Total Enrollments	34,384	24,692
2	Total Number of available Class Rooms	565	235
3	Capacity (students/class) standard limit	30	40
4	Present Load of Students per Class Room	61	105
5	Class Rooms Required for present need	1,146	617
6	Shortage of Class rooms	581 50.70%	382 61.93%

Source: Consultant's estimates based on statistics provided by Education Works department, Larkana – 2014.

Therefore, for the short term plan, provision of 963 classrooms at different levels is required with the repairing of existing buildings and training of teaching staff is required. The long term plan target is to achieve 100% enrolment with 1:1 male female ratio by 2033; therefore 4,900 additional classrooms will be required to accommodate upcoming generation. This need could be fulfilled either by addition in existing buildings or more new schools and colleges will be need to constructed in future to serve additional estimated population of 158,000.

12.2 Health⁵⁸

Health is a very crucial need for socio-economic development of human capital. Larkana having a very strategic position in north Sindh provides high level of health services to the region.

12.2.1 Medical Facilities

Some important hospitals & dispensaries providing medical facilities in Larkana are:

- Hospitals working under Chandka Medical College:
 - Civil Hospital
 - Teaching Hospital
 - Shaikh Zaid Hospital for Women
 - Shaikh Zaid Hospital for Children
 - LINAR Hospital / Nuclear Medical Center



⁵⁷ Updated status is given in in the Addendum - page nos. 44-45

⁵⁸ Updated status is given in in the Addendum - page no. 60

- Government Hospital (Mohallah Murad Wahan)
- Railway Hospital
- Red Crescent Hospital
- Police Dispensary
- Govt. Dispensary Nazar Mohalla
- Govt. Dispensary Gajjanpur



The people of Larkana have had benefits of Chandka Medical College along with Chandka Medical Hospital since 1973. The College was upgraded to a medical university in 2008. Most of the above mentioned hospitals work under the Chandka Medical College Hospital as different units serving not only the city but the region as well.



The Civil Hospital block of Chandka consists of the following units:

- Casualty Unit
- CCU (Coronary Care Unit)
- Surgical Ward
- ENT and Eye Ward

Currently, Chandka central laboratory has two old incinerators out of which one is of larger capacity but not functional due to low pressure of gas, while other having smaller capacity, is operational, meeting a fraction of the requirement.

LINAR Hospital (Larkana Institute of Nuclear Medicine and Radiotherapy) is a specialized hospital for cancer treatment. This hospital consists of 150 staff with 50 beds having almost 80 percent bed occupancy. But this sensitive treatment hospital is manually dumping its waste within its own premises and later burns it out.

Some important medical centers purely in private sector are:

- City Medical Center
- Almas Medical Centre
- Latif Medical Centre
- Mehran Medical Centre
- Sindh Medical Centre
- Batool Medical Centre
- Farooq Medical Centre
- Abbasi Medical Centre
- Al-Shifa Medical Centre (Orthopedic)
- Sujjal Medical Centre



The total bed strength in the private medical centres is 250. The most alarming part of the private medical centres is that they are not regulated and controlled by any agency. Thus the standard of service provided is left for the consensus of the owner. Some regulatory body is required to control their standard of service.

12.2.2 Hospital / Bed Ratio

In 1990 the provision of hospital beds in Larkana was 1.0 bed per 1000 catchment population, which was much above the Sindh provincial average of 0.34 hospital beds per 1000 inhabitants and Pakistan's average 0.63 beds per 1000 population at that time.

TABLE-C6: NUMBER OF BEDS IN PUBLIC HOSPITALS OF LARKANA CITY

S.No.	Name Of Hospital	Number of Beds		
		Male	Female	Total
1.	City Block	298	247	545
2.	Teaching Block	180	219	399
3.	Paeds Medicine	92	108	200
4.	Paeds Surgery	25	25	50
5.	SZWHL	-	200	200
Sub-Total		595	799	1394
6.	LINAR	-	-	50
Total				1,444

According to official sources, there are currently 1,444 beds in Larkana City, including 595 beds for male patients, 799 beds for female patients, while 50 beds in specialized hospital (LINAR Hospital).⁵⁹ The present hospital bed ratio has thus increased to 3.14 beds per 1000 city population. This ratio is exclusive of private hospitals and medical centres and far above the NRM medium term target of 2.0 beds per 1000 population for Pakistan.

As per District Health Officer, Larkana, there is 90% bed occupancy in Larkana City along with two to three weeks waiting time to avail bed.⁶⁰ This clearly shows that the catchment population is not limited to Larkana City and covers entire Larkana District and even beyond.

Larkana District at present has 1659 beds in different level of hospitals (teaching, city, specialized, taluka), dispensaries, rural health centres and basic health units.⁶¹ These numbers of beds serves present district population i.e. 1,594,400.⁶² Thus, the present hospital bed ratio is estimated as 1 bed per 1000 persons for the district population, which is actually the catchment population.

⁵⁹ Planning and Development Department, Civil Hospital Larkana

⁶⁰ Medical Superintendent Chandka Medical College, Larkana/ District Health Officer, Larkana-2013-14

⁶¹ Development Statistics of Sindh 2011, Bureau of Statistics Planning and Development Department

⁶² As per 1998 census with AGR 3.14%, at present Larkana District (reconstituted) population is estimated as 1,594,400

Therefore, the target for the year 2033 is to provide 2 beds per 1000 projected district population⁶³ as per standard given in the National Reference Manual on Planning and Infrastructure Standards (NRM). To achieve this target of hospital bed ratio, around 4,300 more beds will be required to fulfill future bed requirement.

The city has various specialized facilities, however, the district health authorities have emphasized on the urgent need of establishing a Paeds Surgery Department (extension) and a separate Urology Centre. While the new facilities are created, the proper maintenance of existing facilities and effective operational services should be undertaken and improved with the timeline.

12.2.3 Preventive Health Care

Larkana District Administration is quite active in preventive health measures and from time to time has run various campaigns such as:

- Polio Eradication
- National Program for FP & PHC Larkana
- Malaria Control Program
- Epidemiological Data Collection
- TB Control Program DOTs
- Leishmianiasis
- Leprosy Control Program
- Aids Awareness Program

According to Deputy Commissioner Larkana, during polio campaign some 40 to 50 thousand children could not be vaccinated as parents refused polio drops for different reasons and religious beliefs. So along with provision of vaccination medicines, there is a need for arranging awareness programmes for the people to avail the facility & prevent new generation from diseases.

⁶³ Projected population 2033 of Larkana District is estimated as 2,959,000 with AGR 3.14%

12.2.4 Medical & Para Medical Staff

Larkana is unfortunately losing doctors and para-medics as their number has decreased over the past few years. At present, Larkana city has 429 doctors including male and female doctors; 86 nurses and 1,062 paramedical and other staff providing services in government sector. This number of medical staff is exclusive of private practicing doctors and paramedics. Larkana need 628 doctors, 136 nurses and 1,085 paramedical and other staff as per requirement.⁶⁴

TABLE-C7: CHANDKA MEDICAL COLLEGE AND AFFILIATED FACILITIES

Posts	Sanctioned	Filled	Vacant
STAFF UNDER CHANDKA MEDICAL COLLEGE			
Doctors (BPS-17 to 20)	495	333	162
Staff Nurse (BPS-16)	136	86	50
Paramedics & Other Staff (BP-01 to 15)	1085	1062	23
STAFF UNDER DHO LARKANA			
Doctors (BPS-17 to 20) under DHO Larkana	133	96	37

Source: Medical Superintendent Chandka Medical College, Larkana/ District Health Officer, Larkana-2013-14

Generally in all hospitals, there is a shortage of nurses. While Paeds Medicine (Children Hospital) is facing extreme shortage of staff, as there are 136 staff sanctioned including 36 doctors and 100 paramedics for 200 beds. But there has been no appointment of the required staff so far. According to District Health Officer, Larkana, the total number of OPD patients per day is 4,256.

For the upgradation of para-medical staff, various on job training courses for ward boys, midwives and other paramedical staff are also being offered through Benazir Bhutto Shaheed Youth Development Program. The statistics regarding the medical and paramedical staff received from the government agencies need to be used with caution as the prevalent absenteeism is not reflected in their figures.

12.3 Recreational /Cultural Facilities⁶⁵

At the moment city is served with sufficient recreational spaces like; parks, clubs, playgrounds, stadium and theatres. These facilities lack zoo, amusement park and Water Park etc. However, the existing facilities are not well maintained and there is no financial mechanism to make them self sustaining like charging.

⁶⁴ Medical Superintendent Chandka Medical College, Larkana/ District Health Officer, Larkana-2013-14

⁶⁵ Updated status is given in in the Addendum - 2018 - page nos. 61-62

12.3.1 Public Parks

Larkana had been famous for its gardens and had been known as Eden of Sindh. Although it has lost some of its green glory, Larkana still has several gardens and parks to provide passive recreation to its residents.



The government recently created a new Urban Forestry Department which is charged with development of parks and plantation in incidental open spaces. The efforts of this department, if directed properly can bring back the past image of green city of Larkana.

TABLE-C8: PUBLIC PARKS

Sr. No.	Name	Location	Approx Area (in acres)
1.	Jinnah Bagh	Jinnah Road, Press Club Road, College Road	1.10
2.	Zulfiquar Bagh	Akil Road	2.38
3.	Shahnawaz Bhutto Children Park	Shahnawaz Park Road	0.4
4.	Railway Park	Jail Road	1.51
5.	Bhakhtawar Bhutto Park	SZABIST Road	0.56
6.	Rice Canal Park	Linar Cancer Hospital Road	2.13
7.	Triangle Park	Dari Raod	0.23
8.	Asifa Bhutto Zardari Park\	Stadium Road	0.5

12.3.2 Clubs

The city has several clubs providing community recreation, passive as well as active, to its members.

- Officers Club
- Citizens Club
- Ladies Club
- Nizamani Labour Hall
- Pakistan Medical Association House (under construction)



The officers club mentioned above has the facilities of a Squash Court, Badminton Court and Gymkhana.

12.3.3 Active Recreation / Play Ground

Larkana has some sports and recreation activities for its youth.

Some of important facilities are:

- Khuhra Sports Complex and Stadium in Sachal Sarmast Colony
- Municipal Stadium and Gymkhana near Peoples Colony
- PCB Stadium at Sheikh Zaid Colony
- CMC Stadium opposite to CMC Hospital
- Cricket Ground at Police Training School
- Pilot School Play Ground
- Municipal School Play Ground
- Degree College Play Ground



12.3.4 Entertainment

Films and theaters are the most common and affordable means of entertainment. There are cinemas that have the facilities to serve as theaters as well like Pakistan National Center and also some parks are used as open air theaters. In the past, there were four major cinemas in the city are Al-Manzar, Empire, Cleopatra and Nigar.



Al-Manzar cinema which was established at Station Road Larkana has now been demolished and other buildings are constructed. Empire cinema which was built at Empire Road now has been converted into a shopping plaza. Cleopatra cinema in Nazar Muhalla of Larkana can still be found but in a very pitiful condition. This cinema is not showing movies regularly except on a few occasions like Eid, New Year, Eve and such type of big occasions.

Beside these, an Arts Council adjacent to SZABIST in Sachal Sarmast Colony is under construction.

12.3.5 Tourism / Archaeology

One of the world's oldest archaeological sites, Moen-Jo-daro, lies 28 km away from the city. As a major archaeological site, it has its own airport, which is shared by Larkana. Moen-Jo-Daro is a major tourist attraction on a global basis, but it is not properly marketed or facilitated.

12.4 Religious Facilities

In spite of having 98.5% Muslim population, Larkana caters for religious buildings for other religions also. There are 45 Mosques, 20 Imam Bargahs, 02 Hindu Temples and 02 Churches in Larkana. The names of some famous religious places are as follow:

- Eid Gah Jamia Masjid
- Lahori Jamia Masjid
- Qasmia Masjid
- Allah Wari Masjid
- Jafri Imam Bargah
- Shia Madarsa
- St Joseph Catholic Church
- Protestant Church



13. GOVERNANCE

In the absence of Local Bodies elections, the governance at present is focused at the office of Deputy Commissioner, who is also the Project Director of Larkana Development Package and at present heads the Larkana Municipal Corporation and NSUSC, among various other institutions. The Sindh Local Government Act, 2014 has been recently promulgated but local bodies elections are yet to be held.



Issues:

- 1- Development functions are performed by various agencies depending on source of financing. This includes line departments of federal and provincial governments District Administration for Larkana Package and Larkana Municipal Corporation, Larkana Development Authority and several private developers. There is no institutional arrangement to coordinate and monitor the city development work and avoid unnecessary re-work. May be this is because the Municipal Corporation is defunct at present (June 2014), situation will hopefully improve after the installation of local bodies.

- 2- The Municipal Corporation is mandated to operate and maintain the urban infrastructure. Parts of municipal functions relating to drainage and sanitation have been transferred to NSUSC, which still having teething troubles. Whereas, O&M costs are increasing, there is no proportionate increase in the municipal funds. On the other hand NSUSC also gets a big chunk of funds that Municipal Corporation receives from provincial government, thus further weakening the financial position of the Corporation. A study of LMC budget document of 2012-13 indicate, while total income is expected to be Rs. 345.8 million, the total expenditure is projected to be Rs. 372.2 million leaving a deficit of Rs. 26.4 million.
- 3- The Local Government Act 2014, indicate several avenues for funds generation, which have not been properly exploited by LMC. For sustainable governance, MC should generate additional local funds tapping all possibilities raising taxes, levy, cess and fees. Funds generating projects may also be launched.
- 4- The office of the Dy. Commissioner Larkana, is most effective for bring in required coordination among all the line departments, local bodies and private sector. The office of the Dy. Commissioner Larkana is allowed to play its role in the new local bodies' setup.

The summary of LMC Budget Estimates for the year 2012-13 is as follow:

TABLE- G1: LMC ABSTRACT OF INCOME (Rs. Millions)

S. No.	Head	Estimated 2012-13	Revised 2011- 12	Actual 2010-11
A	REVENUE INCOME			
1	Taxes	308.0	169.6	246.5
2	Fees	19.3	10.0	7.3
3	Rents	9.7	7.0	3.3
4	Others	1.6	25.8	0.6
	TOTAL REVENUE INCOME	338.6	212.3	257.8
B	CAPITAL INCOME			
	TOTAL CAPITAL INCOME	6.8	8.0	2.2
C	NON DEVELOPMENT INCOME			
	TOTAL NON DEVELOPMENT INCOME	0.4	18.6	0.5
	GRAND TOTAL	345.8	238.9	260.4

Source: Larkana Municipal Corporation, Larkana Budget Estimates for the Year 2012-13 & Revised for 2011-12

TABLE- G2: LMC ABSTRACT OF EXPENDITURE (Rs. Millions)

S.No	Head	Estimated 2012-13	Revised 2011-12	Actual 2010-11
A	REVENUE EXPENDITURE			
1	Establishment Charges	236.3	96.3	101.0
2	Contingencies	44.7	27.1	37.5
3	Other Expenditure	18.6	16.3	18.2
4	Charged Expenditure	11.0	9.8	10.5
5	M&R Development Works	27.8	37.1	53.3
6	Revenue Liabilities	5.0	7.2	11.1
	TOTAL REVENUE EXPENDITURE	343.4	193.8	231.6
B	CAPITAL EXPENDITURE			
1	Development Expenditure	8.0	5.5	
2	Development Liabilities	20.0	20.3	31.4
	TOTAL CAPITAL EXPENDITURE	28.0	25.8	31.4
C	NON-DEVELOPMENT EXPENDITURE			
	TOTAL NON-DEVELOPMENT EXPENDITURE	0.8	18.5	0.5
	GRAND TOTAL	372.2	238.1	263.5

Source: Larkana Municipal Corporation, Larkana Budget Estimates for the Year 2012-13 & Revised for 2011-12

14. DISASTER RISKS IN LARKANA DISTRICT⁶⁶ *

14.1 History of Disasters

The district of Larkana is characterized by a tropical to subtropical climate with hot weather throughout the year which turns mild to cold in winters. The entire district has this kind of metrological attributes except weather hazard like monsoon rains that take place between the months of June and August and results in severe floods. This extreme pattern of monsoon rains creates hazard like situation in villages located in low laying area near main course of River Indus. District Larkana is also exposed to series of disaster risks including; droughts, epidemics and contagious diseases, etc.

The most threatening disaster in Larkana in last 5 years was overflow of the river Indus water across its protective bunds in 2010, which had caused catastrophic flooding situation causing major loss to human life, infrastructure, standing crops and arable land.

TABLE- DRM 1: HAZARD MATRIX OF DISTRICT⁶⁷

Hazard	Frequency	Area affected/union council	Severity/Force	Year
Riverine Floods	Monsoon	Mostly Eastern part of the district	Medium	2010,2011,2012
Flash floods	Seasonal	Western part of the district	Low	-----
Heavy Rain	Monsoon	Entire district	Medium	2011,2012
Epidemics	Seasonal	Entire district	Low	Any time
Earthquake	Rare	Entire district	Low	-----
Transport accidents	Frequently	Entire district	Low	Every year

14.2 Floods/ Rains

Flooding in Larkana is generally caused by overflow of surface water of *River Indus* and sometimes it is also caused by runoff from heavy spells of rainfall due to poor storm water drainage system.

⁶⁶ Detailed Strategy for Disaster Risk in Larkana District is discussed in Part-II of Volume-II i.e. Disaster Risk Management Plan

⁶⁷ Rehman, M., et al, 'Pakistan Emergency Situation Analysis- A Profile of Larkana District', USAID - Bureau of Crisis Presentation and Recovery, Annual Report-2011

* As per PDMA Sindh, no such disasters occurred in Larkana after 2013, therefore data reported in the captioned document is considered to be valid. (Letter of PDMA is attached in Addendum-2018 as **Annexure I**)

In Sindh Contingency Plan Report (2012)⁶⁸, Larkana district is marked in lowest bottom quintile of high flood zone area of province Sindh. Despite its low standing as compared to other districts of Sindh, series of several high risk floods struck the district between 2010 -2012 during monsoon seasons.

14.2.1 The Flooding of 2010

The 2010 floods of Pakistan, which has been considered as the most drastic flood calamity of country's history, severely shattered 115 villages of Larkana district, mostly located in eastern ward of District. The NDMA Pakistan's 2012 statistics reveal that during this disaster situation 490,000 person were displaced, 22,000 houses were demolished and 7 people lost their lives.

TABLE- DRM 2: FLOODING OF 2010⁶⁹

Disaster Risk Category	Larkana
Lost to Human Life	7
Villages Affected	115
Cattle Lost	Not Available
Houses Damaged	22000
Persons Affected	490,000
Relief Camps Established	710
Persons in Shelters	141,341
Area Affected (acres/Sq. mile)	101 Sq. miles (64640)
Crops Affected (in acres)	8,550 Acres

14.2.2 The Monsoon Rains Flood of 2011

The District of Larkana experienced severe flooding after torrential monsoon rains in Sindh in two spells in August 2011. The excessive amount of rain water exceeded the drainage capacity of surface system which has not been designed to accommodate storm water drainage of this magnitude. As a result, a large area of district, including 5,400 acres of crops was inundated. The 2011 monsoon rain flooding affected more than 54,555 people, demolished 408 villages, destroyed 5,794 homes and killed 6 people in the district.

⁶⁸ Sindh Monsoon Rains/Floods Contingency Plan Report (2012), Rehabilitation Department – Provisional Disaster Risk Management Authority –Government of Sindh

⁶⁹ Larkana 2010 Flood Statistics – DDMA - Larkana Statistics, Office of DCO –Larkana, 2012

**TABLE- DRM 3: SUMMARY OF LOSSES AND DAMAGES
IN FLOODS / RAINS 2011**

Attribute	Figures 2010	Figure 2011	Source
Total Household 2010	-	249,137	Estimated
Affected Households	83,051	9,213	Contingency Plan 2012
Total UCs	-	51	FAO
UC Affected	2	46	PDMA Sindh
Total Villages	-	148 Mouzas	ACO
Villages/Settlements Affected	115	408	Sindh Contingency Plan 2012
Total Houses Affected	22,000	5,794	Sindh Contingency Plan 2012
Total Houses Population	-	1,476,209	Estimated
Affected Population	490,000	54,355	PDMA Sindh
Male	N/A	17,323	
Female	N/A	37,032	
Deaths	7	6	
Injuries	N/A	1	
Total Area (acres)		476,883	PCO
Total Affected Area (acres)	N/A	12,793	FAO
Area Sown	N/A	251,081	FAO/PDMA Sindh
Crop Area Damaged	25,028	5,396	

14.2.3 Impact of 2011 Floods on Livelihood & Agriculture

The 2010 and 2011 flood/rains caused losses to agriculture sector of the district, as shown in Table DRM 4.

TABLE- DRM 4: SUMMARY OF LOSSES AND DAMAGES IN FLOODS/RAINS 2011⁷⁰

Major Crops	Area	
Cotton	Area sown (Acre)	2,367
	Area Damaged (Acre)	118
	%	5%
Rice	Area sown (Acre)	246,853
	Area Damaged (Acre)	4937
	%	2%
Sugarcane	Area sown (acre)	1,105
	Area Damaged (Acre)	0
	%	0%
Other	Area sown (Acre)	756
	Area Damaged (Acre)	340
	%	45%
Total Area Sown		251,081
Total Area Damaged		5,396

As mentioned above, 5% of cotton and 2% to 7% rice crops were damaged along with 45% of the other crops. Besides, 92 livestock heads died due to this hazard.

14.3 Cyclones/ Tsunamis

The district of Larkana is yet to experience any unpleasant event caused by cyclone or Tsunami. The tropical cyclones in South Asian region normally form over Arabian Sea and hit coastal areas of Sindh. Due to its remoteness from Arabian Sea, Larkana is safe from this hazard.

14.3.1 Hot Wind Twisters

Small scale twisters of this category randomly appear in extreme summer season. However, hazard risks arising from this type of disaster are minimal in terms of damage and cause minor loss to local crops or farm trees.

14.4 Droughts

Sixty percent area of Sindh is arid which receives an average annual rainfall of 5 inches during monsoon season. The livelihood of its inhabitants, horticulture, livestock and crops totally depends upon source of water coming from the river Indus.

⁷⁰ Rehman, M., et al, 'Pakistan Emergency Situation Analysis- A Profile of Larkana District', USAID - Bureau of Crisis Presentation and Recovery, Annual Report, 2011.

River Indus had experienced scarcity of water supply at many occasions, largely affected by rainfall shortage. The negative externalities of global warming which recently has affected the rainfall patterns of many localities in South Asian sub-continent also created a drought like situation due to shortage of rainfall in Sindh between 1998-2002.

The district of Larkana experienced worst drought situation in 1998-2002, when basin of River Indus shrank down due to absence of rains, leaving a large number of cattle dead and agricultural area barren. In this disaster situation, a number of disease erupted due to malnutrition and the crops of rice and wheat were severely affected.

14.5 Earthquakes

Larkana is located inside Moderate Earthquake Hazard Zone of Pakistan. Majority of land in this zone is plane surface and exposed to very low risk of earthquakes.

14.5.1 History of Earthquakes

There has been no loss of life or property due to earth quack recorded in Larkana.

TABLE- DRM 5: HISTORY OF EARTHQUAKES

S. No.	Date/Year	Magnitude	Risk level	Casualties
1	21 Dec/ 2013	5.6 mag, 5 kms depth	Low	None
2	Oct 2013	4.9 mag, 21km depth	Low	None
3	Oct 2013	4.8 mag, 22km depth	Low	None
4	Oct 2013	4.9 mag, 27km depth	Low	None
5	Oct 2013	4.7 mag, 10km depth	Low	None
6	2011	4.9 mag, 3km depth	Low	None
7	2010	4.5 mag, 24km depth	Low	None

14.6 Accidental Fires

Conflagrations are rare in Larkana, as forest area density is very low inside district boundary. However, incidental fires are common in both, urban and rural areas of district, which normally cause minor loss.

14.6.1 Minor Fire Accidents -2013

In April 2013, a fire broke out engulfing 30 Katcha houses at Rasool Abad Muhalla of Larkana City. The fire destroyed several houses, and reduced valuables / property worth millions of rupees to ashes.⁷¹ In June 2013, an incident of fire happened on ‘Empire Road’ of Larkana city which destroyed seven shops doing wood business in Larkana.⁷² Similarly, in October 2013, a

⁷¹ Retrieved from: The Lahore Times Read more: <http://www.lhrtimes.com/2013/04/15/fire-engulfs-30-houses-in-larkana-161574/#ixzz2oIfZoid1>

⁷² Retrieved from <http://www.demotix.com/node/2196363>.

fire hazard situation suddenly erupted into stock of wood stored at ‘Pir Sher Road’ which resulted in loss of 5-6 million rupees.⁷³

14.7 Communal Strifes

Larkana is exposed to series of serious communal strife raising security issue of local communities and economic loss. The incidents of tribal clashes, honor killing, robberies and armed clashes are common. The significance of problem can be estimated from the fact that more than 40 primary schools in Larkana district have been closed due to volatile law and order situation created by tribal conflicts. In 2013, there were 11 ongoing tribal disputes that engage 22 tribes, According to Larkana Police Department, in year 2013, 147 people died and 71 got seriously injured due to tribal wars. A total of 1,478 tribesmen have been booked in 151 tribal clashes lodged at different police stations across the division⁷⁴.

Larkana is located near Sindh - Baluchistan boarder which creates a difficult geo-political position for its governing authorities dealing with people belonging to two different descents, i.e. ‘Balochi’ and ‘Sindhi’ residing in one common area, creating tribal feuds.

14.8 Epidemics

In recent years, under many programs of United Nations (UN) and World Health Organization (WHO), several cases of diseases like Polio, cholera and small pox have been successfully treated within the district.

TABLE- DRM 6: EPIDEMICS EFFECTED PERSON STATISTICS

S. No	Disease	Effectuated Person
1	HIV (infected)	354
2	AIDS (demised)	3
3	Leishmaniasis	6000
4	Leprosy	660

Epidemic diseases like Malaria, Tubular Chlorosis, Hepatitis and Dengue Fever are still jeopardizing the health of local communities. During last few years, numbers of cases suffering from incurable diseases like HIV (AIDS), Leishmaniasis and Leprosy have been increasing which is a disquieting sign for health profile of the district.

⁷³ Retrieved from <http://dailyexplorer.net/2013/10/fire-erupted-into-ara-machine-at-pir-sher-road-larkana-wood-worth-of-5-to-6-million-were-reduced-to-ashes-here-on-Friday/>.

⁷⁴ Retrieved from, <http://www.dawn.com/news/1028315/tribal-feuds-in-larkana-spiralling-out-of-control>, The Daily Dawn Newspaper, 12.07.2013.

14.9 Environmental Degradation

The River Indus Basin across Larkana district is contaminated by wastes coming in the form of waste water drainage, waste disposal and other toxins. These toxins adversely affect human and livestock health, agriculture crops, fishing, land and water quality.

Water Contamination during droughts had also threatened the habitat of many native species within district. Also live stock has also been seriously affected by this situation. The negative externalities of these disasters have now appeared in form of economic loss resulting in the increase of poverty.

14.9.1 Noise Pollution

The study was carried out to measure the intensity of traffic noise pollution in the city Larkana. It was concluded that high level of traffic noise levels was observed due to un-planned and lack of sustainable planning. Environmental quality has been deteriorated due to ribbon developments.

The data was collected from the nine different roads. As per noise guide lines of National Environmental policy the standard of Noise in Pakistan 85 dB. Noise pollution can be minimized through sustainable national development control approach in terms of sustainable physical planning. Following are the maximum and minimum levels of sound pressure:

TABLE- DRM 7: TRAFFIC NOISE POLLUTION ⁷⁵

S.No	Location Name	Sound Pressure Level	
		Min:	Max:
1	Sheikh Zaid Hospital Road	73	91
2	Lahori Mohalla Road	73	100
3	VIP road	70	91
4	Municipal High School Road	72	100
5	Bakrani Road	70	91
6	Bandar Road	72	91
7	Miro Khan Road	73	101
8	Jinnah Bagh Chowk	75	91
9	Qambar Road	72	100

14.9.2 Air pollution

At present, monitoring of urban air pollution in Pakistan is limited to isolated instances where air pollutants measured for brief periods at selected locations. Urban locality, city, region or country wide continuous or repeated air quality monitoring data does not exist. Similarly, there is no formal system of air quality data storage and reporting. The result of EIA study conducted at Arija which is 18km away from the Larkana city is as followed:

⁷⁵ Source: Critical study of roads traffic noise and land use, Research gate, Sep 2010

TABLE- DRM 8: AIR QUALITY⁷⁶

S. No	Parameter	Units	NEQS Limits	Concentration	Method
1	Carbon Monoxide	mg/m ³	10	0	EVM7
2	Carbon Dioxide	ppm	.....	330	EVM7
3	OXIDE Of Nitrogen	ug / m ³	120	0	VRAE PGM-7840
4	Sulphur Dioxide	ug / m ³	120	O.O	VRAE PGM-7840
5	Particular Matter	ug / m ³	250	65	EVM7

14.9.3 Water Quality

Six nos. of water samples were collected from water courses, hand pumps, and stream sites during the field survey of various locations for water quality analysis. The water samples were measured using “pH” and “TDS” meter that was calibrated before being used in the field. The water samples from various locations/points were handled as per USEPA (US environmental protection agencies) sampling procedures. The parameters tasted for the water quality were pH value, TDS (total dissolved solids), Total Suspended Solids, Chloride, Total Hardness, BOD (Biochemical oxygen demand), COD (Chemical oxygen demand), Iron, Copper, Chromium, Phenolic Compounds, Alkalinity, Ammonia, Oil and Greases.

TABLE- DRM 9: WATER QUALITY ⁷⁷

S. No	Parameter	Units	NEQS Limits	Concentration	Method	Remarks
1	pH value	.....	6.5-8.5	7.09	pH	
2	Total Dissolved Solids	mg/l	< 1000	980	APHA 2540 C	
3	Total Suspended Solid	mg/l	< 5	< 5	HACH METHOD 8006	
4	Chloride	mg/l	< 250	202.35	APHA 4500 Cl C	
5	Total Hardness	mg/l	< 500	342.65	APHA 2340 C	
6	BOD	mg/l	-----	< 5	HACH BOD TRAK 10099	
7	COD	mg/l	-----	< 5	HACH METHOD 8000	
8	Iron	mg/l	-----	BDL	AAS	
9	Copper	mg/l	2.0	BDL	AAS	
10	Chromium	mg/l	< 0.05	BDL	AAS	
11	Phenolic Compounds	mg/l	< 0.002	0.18	MERCK CELL TEST 14551	Higher
12	Alkalinity	mg/l	-----	BDL	APHA 2320 B	
13	Ammonia	mg/l	-----	0.40	HACH METHOD 8038	
14	Lead	mg/l	< 0.05	BDL	AAS	
15	Oil & Grease	mg/l	-----	BDL	SOLVENT EXTRACTION	

⁷⁶ Source: Air quality data available in EIA study for Larkana Industrial Estate on Airport road 2013.

⁷⁷ Source: EIA study for Larkana Industrial Estate, Arija city, Global Environment Management Service, 2013.

14.10 Larkana Environmental Settings

Larkana environmental setting has been discussed in detail, in the initial chapters of this report, including climate, forests, flora and fauna, rivers and streams, topography and drainage pattern.

The flood water in Larkana enters through main course of River Indus, flowing from north to south direction of the district. The ‘Guddu Barrage’ installed near Kashmore, controls irrigation supplies to 2.9 million acres (12,000 km²) of agricultural land in the Jacobabad, Larkana and Sukkur districts of Sindh province and the Naseerabad district of Balochistan province. The barrage has 64 bays, each 60 feet (18 m) wide. The maximum flood level height of Guddu Barrage is 26 feet (8 m).

The flooding situation generally takes place at River Indus when river water exceeds the water storage capacity of Guddu Barrage which creates havoc condition to its serving districts. ‘Akil’ (in Larkana taluka) and ‘Abad Mungli’ (in Dokri taluka) are two most vulnerable points of Larkana District that because of flood based disaster damages. ‘Aakil-Aagani’ and ‘Nusrat Loop’ bunds are the two vital flood protection embankments installed at these points to provide protection against flood water.

TABLE- DRM 10: VULNERABLE AREAS OF THE DISTRICT

Sr. No.	Taluka	No of UC's	No. of Deh's
1	Larkano	2	7
2	Bakrani	1	10
3	Ratodero	1	4
4	Dokri	2	9
	Total	6	30

14.10.1 *The Indus River & Vulnerability of the District*

According to the Disaster Risk Management Statistics of the office of the Deputy Commissioner, areas located near following embankments of River Indus passing through Larkana are vulnerable to flooding:

- Nusrat Loop Bund Mile 1/6
- Agani Akil Loop Bund Mile 2/3 to 2/6
- Akil Loop Bund Mile 0/0 to 0/7
- Abad Manguli Extension Bund Mile 0/0 to 1/5
- LS (Larkana-Sehwan) Bund Mile 17/1 and 34/4 (seri)

TABLE- DRM 11: PROTECTIVE BUNDS AND EMBANKMENTS

1 st Line of Defence River Protective Bund	2 nd Line of Defence River Protective Bund
<ul style="list-style-type: none"> • Sukkur Larkana Bund • Ghumra Loop Bund • Ruk Loop Bund • Nusrat Loop Bund • Agani Loop Bund • Akil Loop Bund • Moria Loop Bund • Larkana Sehwan Bund • Alias Loop Bund • Shaikh Nara Loop Bund • Palija Loop Bund • Abad Ring Bund • Abad Mangoli Bund • Gaji Dero Link Bund • B.K Loop Bund • Abad Manguli Extension 	<ul style="list-style-type: none"> • Bagriji Loop Bund • Sukkur Larkana Bund • Sethar Loop Bund • Agani Abad Loop Bund • Samtia Loop Bund • Pir Sher Loop Bund • Phull Link Bund • Mahar Wada Loop Bund • Abad Link Bund • Abad Loop Bund • Gud Loop Bund • Nara Loop Bund • H.K Loop Bund • Hassan Wahan Loop Bund • Balreji Loop Bund • F.G Link Bund • Moen-Jo-Daro Protection Bund

14.10.2 Soil loss and Degradation

In Larkana, the rice – wheat areas have serious drainage problem. The presence of extensively depressed areas, clayey soils and slow permeable deep strata are mainly responsible for the impeded drainage, which has further deteriorated due to improper irrigation practices and the overuse of irrigation water. Consequently, there is widespread problem of water logging and salinity which causes considerable reduction in the wheat and rice yields.

Thus, Salinity is one of the major problems for soil loss in Larkana District. Approximately 15 percent of the district area is either underwater or is made up of swamps. In seasonal swamps, the evaporation of standing water causes the development of the extreme type of salinity.⁷⁸

⁷⁸Aslam, M., 'Water logging and salinity management in the Sindh Province, Pakistan', Pakistan National Program, International Irrigation Institute Lahore, 1998.

14.11 Relative Severity of Various Hazards in Larkana - Risk Assessment ⁷⁹

TABLE- DRM 12: SEVERITY OF VARIOUS HAZARDS IN LARKANA

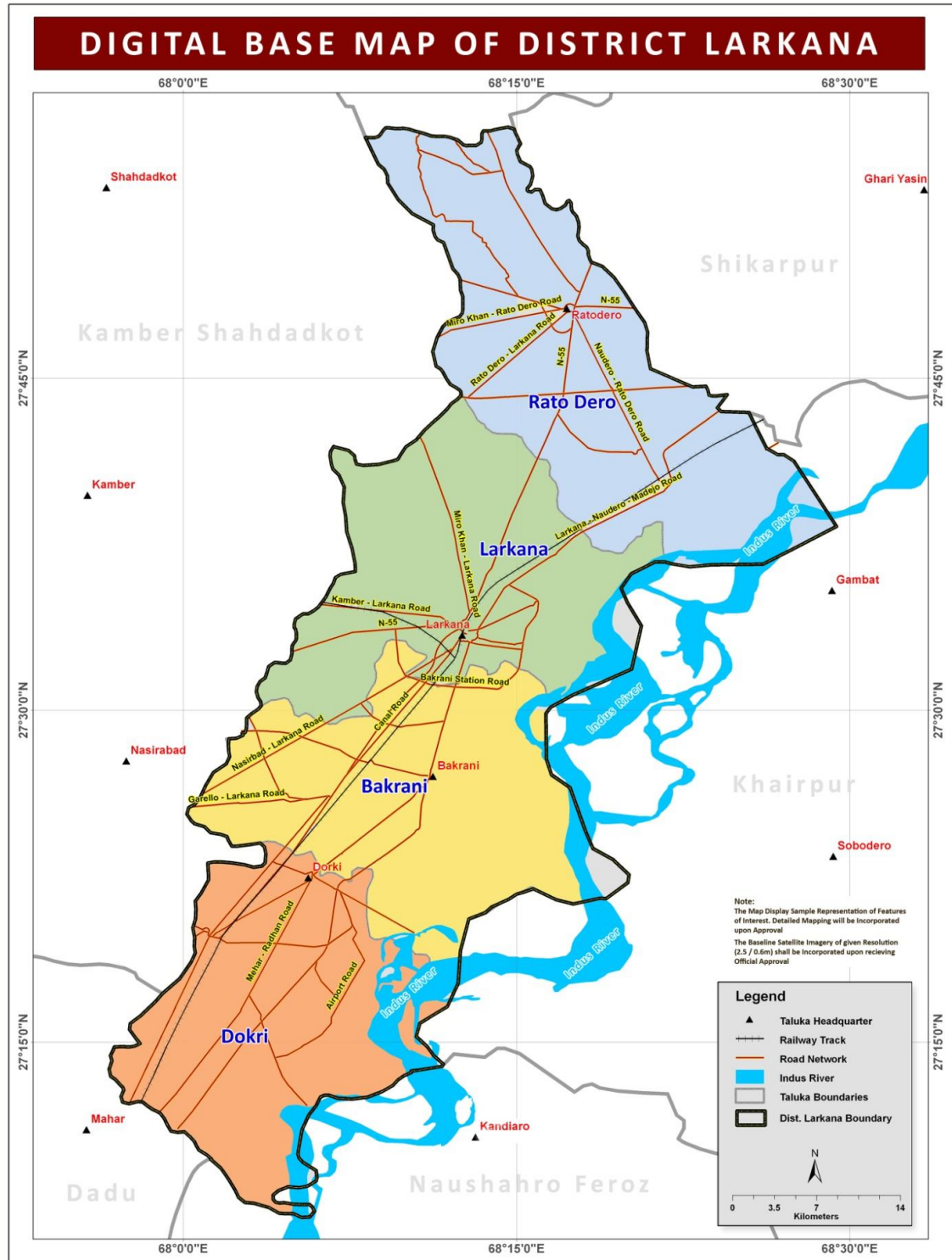
Sr. No.	Hazard Category	Disaster Hazard Level
1	Droughts	3
2	Floods	2
3	Earthquakes	2
4	Landslides	--
5	Pandemic Disease	3
6	Fire	1
7	Crisis Situation	4
8	Industrial/ Mining Incidents	1
9	Cyclones	1
10	Tsunamis	--
11	Refugees IDP's	1

Scoring Keys NB: Ranking based on deliberation with staff from Relief Commissioner's Office-Sindh.

5-Very High 4-High 3-Medium 2-Low 1-Very low

⁷⁹Disaster Risk Management Plan Sindh Province-- Report', PDRMA-SINDH (2008).

HEALTH FACILITIES MAP



PART-II



SWOT Analysis and Future Vision

15. SWOT ANALYSIS MATRIX

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
1	DEMOGRAPHY			
1a	Composition			
	1. Sizeable potential work force as 50 % population in age group 15 to 64 years including females 2. High growth rates provide a large base for future population 3. Different ethnic groups live in harmony	1. High rate of un-employment 2. Fewer skills and lack of training 3. Lack of job opportunities due to constraints of economic growth	1. Human capital is a potential resource for boosting economy 2. Offers opportunities for economic diversification 3. Could produce quality professionals through opportunities available for education and health	1. Intra state migration of skilled professionals 2. Unemployment (can give birth to social crime) 3. Possibilities of tribal strife.
1b	Distribution			
	1. Population redistribution has started 2. Sufficient land available	1. Housing industry is not fully geared to meet demand 2. Government not taking measures for providing low income housing	1. Townships may develop on the outskirts 2. Private developers to be encouraged for developing low income housing	1. Higher room densities and house hold size 2. Uncontrolled informal development
1c	Change			
	1. Large number of highly educated and trained manpower in education and health sectors 2. Tertiary education and health services provide a strong focus for migration to Larkana	1. Migration of skilled professionals to larger cities	1. Health and education sectors can attract migrants from surrounding localities 2. Opportunities for turning Larkana in to a strong regional centre	1. Infrastructure deterioration

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
2	ECONOMY			
2a	Agriculture			
	<ol style="list-style-type: none"> 1. Availability of rich and fertile agricultural land 2. Major rice production area 3. Larkana is famous for guava production 4. Healthy environment 5. Agricultural land is well served by irrigation / canal network 	<ol style="list-style-type: none"> 1. Low productivity 2. Low yield varieties such as Irrigation-6 3. More than 50% of guava crop is lost 4. Improper use of cultivated land parcels 5. Poor transportation for delivering agricultural products from field to market 	<ol style="list-style-type: none"> 1. Potential for higher production through Increased yields. 2. Introducing certified seeds. 3. Processing industry, cold storage and exports should be encouraged for guava. 4. Well organized delivery of agricultural goods in regional and international markets will also boost local economy 	<ol style="list-style-type: none"> 1. Disaster (flood & drought). 2. Conversion of agricultural land into housing estates at periphery. 3. Monopoly of landlords in seed distribution 4. Land grabbing mafia. 5. Losing agricultural land to urbanization pressure. 6. Rice being the major crop and life line of Larkana's economy will lose production if hybrid varieties not used. 7. Farmers losing profits may turn to other crops.
2b	Trade & Commerce			
	<ol style="list-style-type: none"> 1. Very active Chamber of Commerce & Industry 2. Financial institutions are present in Larkana 3. Strong local retail 4. Large number of local skilled artisans available 	<ol style="list-style-type: none"> 1. No control over crop market rates 2. Unplanned local business activities 3. Less participation of women in labour force for industrial sector 4. Lack of awareness regarding micro finance opportunities offered by financial Institutions 5. Lack of market mechanism 6. Banks are reluctant to open L/C for local traders 7. Trade mostly through outsider traders 	<ol style="list-style-type: none"> 1. Market network for direct export from Larkana 2. Local economy will improve if banks are more progressive 3. Agricultural surplus available for trade 4. Homegrown handicrafts can be promoted through proper exposure to export markets 5. Large number of business interest groups available 	<ol style="list-style-type: none"> 1. Farmers/ local traders are exploited by middle men or Karachi traders 2. The producer does not get good returns of exportable surplus 3. Security issues (which lead a large number of agriculturists and business persons to migrating from the city) 4. Low subsidies provided by local and provincial government

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
2c	Industrial			
	<ol style="list-style-type: none"> 1. Raw material for agro-processing industries available 2. 500 Acres land allotted for Industrial estate on Airport Road 3. Availability of labour force 4. Active participation of SSIC (Sindh Small Industrial Corporation) 	<ol style="list-style-type: none"> 1. Lack of proper infrastructure 2. No development has taken place in the new Industrial Estate 3. Shortage of large scale developed Industrial land 4. Inadequate infrastructure provisions at existing small industrial estate 5. Lack of proper administrative setup to guide industrial activities & update business record of production 6. Lack of warehousing space 	<ol style="list-style-type: none"> 1. Industrial estate should be developed which will increase investment and job opportunities 	<ol style="list-style-type: none"> 1. Larkana's economy could face stalemate and people would lose jobs 2. Lack of security and enforcements 3. Shortage of power supply & gas 4. Industrial development in unplanned manner
2d	Tourism			
	<ol style="list-style-type: none"> 1. Moen-Jo-Daro is a world heritage site and a potential tourist attraction 	<ol style="list-style-type: none"> 1. Touristic infrastructure in lacking 	<ol style="list-style-type: none"> 1. Moen-Jo-Daro should be developed as world class tourist resort to generate income and foreign exchange 	<ol style="list-style-type: none"> 1. Salinity water logging in Moen-Jo-Daro 2. Security environment 3. Drought / floods
2e	Livestock & Fisheries			
	<ol style="list-style-type: none"> 1. Local skills and vet services available 2. Mechanism for milk collection available 3. Favorable environment for livestock growth (Pasture) and poultry farming in surroundings of city 	<ol style="list-style-type: none"> 1. Large scale breeding has not developed 2. Lack of facilities to industrialize livestock based products 	<ol style="list-style-type: none"> 1. Cooperative dairy farming and in-land fisheries has sufficient scope 2. Large pasture land and labour force available for livestock growth 3. Livestock based products can enhance economic activities if produced through appropriate industries 	<ol style="list-style-type: none"> 1. Theft and security issues 2. Losses due to Disasters (floods and epidemics)

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
2f	Forestry			
	1. Approximately 25,500 Hectares (63,000 Acres) area of forest land available	1. Over cutting / thinning out of density	1. Aggressive plantation to increase timber and fuel wood	1. Theft 2. Over cutting, deforestation
2g	Informal Sector			
	1. Very active informal sector in retail and housing 2. Significantly contributes in local economy 3. Offers job opportunities to youth 4. Contributes in small scale industrial development	1. Lack of resources and public control. 2. Lack of effort to regularize informal sector (Katchi abadis) into formal sector and provide basic facilities 3. Conversion to commercial use particularly in residential areas 4. Land grabbing	1. With proper guidance and financial help can make positive contribution in local economy	1. Spread of road side encroachments and Katchi Abadies (slums)
2h	Business Climate			
	1. Progressive entrepreneurship available 2. Strong financial services	1. Lack of infrastructure 2. Dependent on regional market products due to lack of local production 3. Unplanned growth of business sector along inner city streets 4. Gave birth to encroachments	1. Larkana Chamber of Commerce & Industry needs to be guided and assisted with incentives	1. Local entrepreneur would be encouraged to invest in larger cities. 2. Security Issues.

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
3	SOCIAL SERVICES			
3a	Public Safety			
	1. Good administrative & law enforcement setup exists for public security purpose	<ol style="list-style-type: none"> 1. Law enforcement agencies failed to apply safety impediments for the protection of local communities 2. Adoptability of poor administrative mechanism for operating local security matters 3. Political Influence is an impediment in governance and administration 	<ol style="list-style-type: none"> 1. Improvements in public safety measures implemented through proper security mechanisms will ultimately produce maximum economic benefits 	<ol style="list-style-type: none"> 1. Theft 2. Law & order Situation 3. Communal strife/ tribal clashes
3b	Sports & Recreation			
	<ol style="list-style-type: none"> 1. Sports and recreation facilities are available within city 2. Interest groups exist s to avail these facilities 	<ol style="list-style-type: none"> 1. Poor maintenance 2. Unplanned landuses in grounds 	<ol style="list-style-type: none"> 1. Properly maintained and managed sports & recreation infrastructure will improve health and livelihood of local communities 2. Engage youth in positive social activities that builds peaceful societies 	<ol style="list-style-type: none"> 1. Land grabbing. 2. Poor health and efficiency of youth and labour 3. Crime/ frustration 4. Lack of healthy activities attracting youth towards unhealthy and anti social activities
3c	Culture			
	<ol style="list-style-type: none"> 1. The indigenous cultural activities of various social groups and minorities in Larkana comprise many events that attract people from its surrounding localities 2. Strong potential for producing culturally ornamented products used in daily life 	<ol style="list-style-type: none"> 1. Poor Management for organizing cultural events 2. Lack of infrastructure to accommodate visitors into such events. 3. Lack of opportunities to commercialize / merchandize cultural goods 	<ol style="list-style-type: none"> 1. If organized appropriately could generate handsome amount of revenues with other spin-off effects 	<ol style="list-style-type: none"> 1. Security Threats 2. Demise of cultural values and norms

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
3d	Health			
	1. Good quality health facilities infrastructure exist in the form of hospitals, clinics, dispensaries, and private clinics, etc	<ol style="list-style-type: none"> Staff shortage Poor administration Absenteeism of staff in public institutions Shortage of appropriate medical equipments and medicines 	1. As a strong tertiary health service centre Larkana can become focus of urbanization	<ol style="list-style-type: none"> Poor health condition of local communities Spread of diseases Out migration Poor productivity
3e	Education & Literacy			
	1. With the presence of reputable professional educational institutes, city is serving a large number of regional population through its educational services and produces good quality professionals every year	<ol style="list-style-type: none"> Lack of consideration for merit appointment system of teaching staff Absenteeism Lack of appropriate teaching aids Poor condition of school buildings & shortage of class rooms Un-availability of play grounds within school buildings 	<ol style="list-style-type: none"> Education services mark steady growth in urbanization process Highly qualified professionals are intellectual assets 	<ol style="list-style-type: none"> Illiteracy, dropouts Discrimination (appointments of non-meritorious teaching staff) Poor health of youth Resistance to female education
4	HOUSING			
4a	Housing Situation			
	<ol style="list-style-type: none"> Approximately 70-80% population lives in self owned houses The trend of rental housing is low Private sector is active in providing housing 	<ol style="list-style-type: none"> Large house hold size Single or Two bedroom houses are high in quantity Poor quality of general housing 	<ol style="list-style-type: none"> Projects of low income housing with appropriate infrastructure & sufficient utility services can overcome the housing shortages & offer healthy living environment Opportunities for micro financing for house construction, repair & purchase through financial institutes will reduce the housing demand 	<ol style="list-style-type: none"> Homelessness/ poverty Slums Poor access to housing finance

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
4b	Housing Services			
	<ol style="list-style-type: none"> 1. 88% Pucca Houses 2. 80% of houses have toilets inside the house 3. Electricity is available to 97% of residents 4. Gas supply is available to 88% of residents 	<ol style="list-style-type: none"> 1. Lack of proper water supply system 2. Lack of efficient drainage system 3. Poor solid waste management system 	<ol style="list-style-type: none"> 1. Improvements in housing utility services will improve lifestyles 	<ol style="list-style-type: none"> 1. Environmental Degradation 2. Frustration among residents 3. Social disorders
4c	Affecting Policies			
	<ol style="list-style-type: none"> 1. Katchi abadies regularization policy in action 2. National Housing Policy 2011 (under revision) 	<ol style="list-style-type: none"> 1. Insufficient coverage for the lowest income groups 	<ol style="list-style-type: none"> 1. The proper application of housing policy levers will smoothly deliver housing supply to mitigates housing shortages for low income people 	<ol style="list-style-type: none"> 1. Development of slums & squatters 2. Homelessness/ poverty 3. Crimes and violence
4d	Major Programs & Projects			
	<ol style="list-style-type: none"> 1. SMBBT - Sheheed Mohtarma Benazir Bhutto Townships (low income housing project), 650 plots 2. PHC- Peoples Housing Cell at Naudero Road, construction of 600 low income housing units in Larkana & distribute free of cost 3. 5 to 10 number of housing schemes from private developers 	<ol style="list-style-type: none"> 1. Un-fair distribution of subsidized housing 2. Low construction quality and lack of utility services for housing 3. High cost of land and construction in Larkana is beyond the affordability of low income groups 	<ol style="list-style-type: none"> 1. Considerable scope in expanding subsidized housing projects by government /NGOS 2. New projects will provide planned developments 	<ol style="list-style-type: none"> 1. Transformation of fertile agricultural land into housing estates at periphery

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
5	ENVIRONMENT			
5a	Land			
	<ol style="list-style-type: none"> Flat fertile land suitable for development Rural rich fertile agriculture land that produces quality crops 	<ol style="list-style-type: none"> Unplanned land uses Limited availability of govt. land for future spatial growth Incomplete development of agricultural land parcels (scattered agricultural growth) Poor administration by agencies monitoring urban growth of the city 	<ol style="list-style-type: none"> If treated through appropriate urban design principals & standards, can be transmitted into mixed land uses and strong activity centres May increase productivity cultivated at full strength 	<ol style="list-style-type: none"> Land shortage for new development. Slum formation Contamination of land in un-irrigated areas
5b	Fresh Water Bodies			
	<ol style="list-style-type: none"> Huge irrigation canal based network available Main course of River Indus close by inland fisheries water ponds exist 	<ol style="list-style-type: none"> Water contamination due to waste disposal Rice Canal used for raw sewage disposal Contamination of standing water bodies created by rain and flood water at open lots is an invitation to malaria and dengue 	<ol style="list-style-type: none"> Temporary water bodies can be used for fish farming 	<ol style="list-style-type: none"> Contaminated water serious threat for human health Standing water gives birth to diseases Threat to agricultural land Affect agricultural production Water logging
5c	Climate			
	<ol style="list-style-type: none"> Suitable for producing crops 	<ol style="list-style-type: none"> Rainfall shortages affect the efficiency of canal system 	<ol style="list-style-type: none"> Agricultural practices can be changed in accordance with weather condition for maximum production 	<ol style="list-style-type: none"> Droughts Heavy rains <p>Climate change affects agricultural production</p>

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
5d	Air			
	1. Air quality in the rich agricultural belt is good for human health, and also keeps ecological balance in atmosphere	1. Inner city air is polluted by high volume of traffic 2. Rice production adds moisture in air	1. Development planned with respect to air circulation can provide relief to inner city's polluted environment	1. Air pollution 2. Respiratory diseases
5e	Urban Area & Areas Suitable for Urban Development			
	1. Land available for future development near Central Jail, Airport Road, Wagan Road upto Bugti Village and Ratodero Road	1. Loss of agricultural land through land development for housing purpose 2. Water logging 3. Unplanned growth in outskirts 4. Lack of utility services	1. Mixed land uses may create activity centres 2. High density will overcome housing shortages	1. Land grabbing 2. Slums 3. Unplanned growth 4. Threat to agricultural land
5f	Risk & Hazard Prone Areas			
	1. Can be used for disposal of industrial toxic wastes & garbage disposal	1. Two union council areas of Larkana city fall into flood prone area category 2. Urban areas exposed to flood due to low lying from the adjoining road 3. Lack appropriate measures for flood water control	1. Agriculture land near flood prone areas can be used for cultivating the crops that need more water 2. Temporary fish breeding ponds could be created to boost fisheries sector	1. Human safety 2. Livestock safety 3. Cultivated land

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
6	LAND USE & TRANSPORTATION			
6a	Land Use Pattern			
	1. Mixed landuses (residential, commercial, industrial, administration)	<ol style="list-style-type: none"> 1. Unplanned street network 2. Absence public transport 3. Ribbon type commercial development in residential neighborhoods 	<ol style="list-style-type: none"> 1. Workability 2. Promotes compact development. 3. Activity centers (support local business) 	<ol style="list-style-type: none"> 1. Encroachments 2. Congestion 3. On street parking (paid/unpaid) 4. Reduced flow of traffic (low speed)
6c	Modes of Transportation			
	<ol style="list-style-type: none"> 1. Good national / regional connectivity through railway , air and road networks 2. Local public transport provisions by auto-rickshaws 	<ol style="list-style-type: none"> 1. Poor traffic management. 2. lack opportunities for integrated transport provisions 3. Lack of coordination between different transport operating agencies 4. Possible use of rail for intra-city mass transportation 	<ol style="list-style-type: none"> 1. Opportunities in the form of wide roads available for mass transit system development 	<ol style="list-style-type: none"> 1. Security issues 2. Economic losses due to transporters strikes 3. Inconvenience due to traffic congestion
6d	Road Network			
	1. Strong network of inter and intra city	<ol style="list-style-type: none"> 1. Poor condition of roads 2. Default road geometry 3. Unplanned road space 4. Open drains / drainage overflow 	<ol style="list-style-type: none"> 1. Wider road space can be used to facilitate multiple transport activities by implementing road space design standards 2. Adequate space available for street furniture installation 	<ol style="list-style-type: none"> 1. Encroachments (political influence barrier against removal) 2. Rain water (disaster) 3. Un-authorized excavations

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
6e	Road Capacity			
	1. Sufficient road right of ways in most new areas	<ol style="list-style-type: none"> Poor traffic management Poor administration (municipal) controls Insufficient right-of ways in relation to surrounding activity in commercial areas No parking space earmarked On street parking reduces road capacity 	1. Proper management can promote public transport, workability, on-street parking and appropriate street furniture	<ol style="list-style-type: none"> Encroachments On-street parking Political involvement - barrier against encroachment removal
6f	Ancillary Road Facilities			
	1. Appropriate road space available for street furniture installation in most locations	<ol style="list-style-type: none"> Lack provision of street furniture Unaesthetic streetscape Haphazard on street parking reduces road capacity 	1. After removal of encroachments adequate space available for traffic signs, lane markings and foot paths	<ol style="list-style-type: none"> Encroachment Irregular on street parking
6g	Transportation Terminals			
	<ol style="list-style-type: none"> Multiple transport mode terminals available A new bus terminal has been constructed in north-east of the city 	<ol style="list-style-type: none"> Poor design of bus terminals Poor maintenance of airport and railway station Poor administration and management control Encroachments around terminal sites 	<ol style="list-style-type: none"> If properly administrated and space utilized, could promote smooth flow of traffic on nearby corridors A new transport terminal for goods transport will facilitate timely supply of industrial goods 	<ol style="list-style-type: none"> Give birth to illegal public transport stands within and outside city Encroachments Traffic congestion

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
7	INFRASTRUCTURE			
7a	Water Supply & Distribution			
	Nil	<ol style="list-style-type: none"> 1. Boring water only source of water 2. Absence of systematic water supply system and treatment plant 3. Defunct water supply overhead tank 4. Poor administrative setup for water supply management and distribution 5. Absenteeism of staff of local water board department 	<ol style="list-style-type: none"> 1. Adequate water resources available for water supply system development 2. Extension of existing irrigation system will boost agricultural productivity 	<ol style="list-style-type: none"> 1. Negative externalities on human and plant health 2. Depletion of water quality due to “drains down”
7b	Drainage & Flood Control			
	<ol style="list-style-type: none"> 1. Good administration setup and equipment exist to flood related disasters 2. A proper drainage network including man-force and machinery is existent 	<ol style="list-style-type: none"> 1. Existing drainage system has been choked due to siltation 2. Rice canal also used for sewage disposal 3. Open drain on street 4. Improper channelization of drains 5. Over flow of storm water drains 6. Lack of interest among stakeholders involved in disaster relief activities 7. Poor administrative control for operating existing drainage system of the city 	<ol style="list-style-type: none"> 1. The city's 50 year old drainage system needs revival through cleaning 2. Flood protection embankments on river Indus should be enhanced upto greater extent to provide maximum protection to surrounding villages 	<ol style="list-style-type: none"> 1. Rice canal's water has been contaminated by open drains 2. Flood disaster threat to local communities living near main course of river Indus 3. Open and overflowing drains impact human health and give birth to epidemic diseases

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
7c	Irrigation			
	1. A good network of irrigation system operated through barrage canals	<ol style="list-style-type: none"> 1. Negligence regarding timely desiltation 2. Weak banks of irrigation canals 3. Un-treated disposal of solid waste in rice canal (irrigation artery) 	<ol style="list-style-type: none"> 1. Support agricultural activities 2. Opportunities for enhancement of agriculture through tube well irrigation 	<ol style="list-style-type: none"> 1. Flooding / over flow of water 2. Water contamination
7d	Power Supply & Distribution			
	1. Strong electricity supply network	<ol style="list-style-type: none"> 1. Shortage of electricity & power supply 2. Poor maintenance of electricity supply infrastructure 3. Estimation of power bill defaults reached Rs. 4 billion 	<ol style="list-style-type: none"> 1. Increased capacity of grid station will minimize electricity shortage & maximize production 2. Opportunities available for alternative energy production through solar energy, bio-gas/ bio-fuels. (availability of sunny days thought the year) 	<ol style="list-style-type: none"> 1. Loadshedding 2. Threat to agriculture and industrial production and overall economy 3. Crime
7e	Information & Communication Technology			
	1. Strong networks available for advanced technologies, e.g. internet, cellular networks, broadcasting, satellite communication	<ol style="list-style-type: none"> 1. Lack of information dissemination regarding agricultural activities, public health, veterinary, disaster forecasting, etc 	<ol style="list-style-type: none"> 1. Media can play important role in economic development and prosperity 2. Immediate disaster forecasting through disaster emergency response centre 3. Can marketing campaign support of development initiative 	<ol style="list-style-type: none"> 1. Negative cultural and ethical exposure to young minds (youth), if not regulated properly

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
7f	Sewage Collection & Disposal			
	<ol style="list-style-type: none"> The existing sewerage system facilitates 50% urban area of the city 	<ol style="list-style-type: none"> Poor maintenance condition; garbage enters into sewers, which requires desilting Drain water is disposed of untreated into Rice Canal and SCARP drain Open sewers 	<ol style="list-style-type: none"> An appropriate sewerage system plan should be implemented Improvement of general hygiene/ public health by cleaning sewerage system Rice canal should be saved from toxic disposals The cleaning of rice canal will promote inland fisheries 	<ol style="list-style-type: none"> Public health Storm water flooding/ over flow of sewers Environmental degradation
7g	Solid Waste, Toxic & Hazardous Waste Management			
	<ol style="list-style-type: none"> Municipal Corporation & NSUSC are responsible for operating mechanism for solid waste management 	<ol style="list-style-type: none"> Poor financial and operational management Less awareness among local communities regarding household waste disposal There is no system to identify toxic wastes produced by various activities 	<ol style="list-style-type: none"> Appropriate measures should be adopted for collecting, sorting and re-cycling solid waste management SWM recycling will help to generate revenue Landfill sites should be identified for future disposals 	<ol style="list-style-type: none"> Sanitation Public health Drainage system Plant and animal Life

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
8	GOVERNANCE			
8a	Planning Actors			
	<ol style="list-style-type: none"> 1. Taluka Municipal Administration (TMA) 2. Deputy Commissioner Office (DCO) 3. Larkana Development Authority (LDA) 4. Politicians 5. Sindh Building Control Authority (SBCA) 	<ol style="list-style-type: none"> 1. Lack of co-ordination 2. Weak technical base of agencies 3. Weak financial base of agencies 4. There is no system to identify toxic wastes produced by various activities 	<ol style="list-style-type: none"> 1. Strengthen the institutions, responsible for planning and execution 	<ol style="list-style-type: none"> 1. Wastage of development funds 2. Scarcity of local funds 3. Infrastructure deterioration
8b	Network within Local Government			
	<ol style="list-style-type: none"> 1. Larkana Municipal Corporation / Taluka Municipal Administration 2. Executive Offices of Line departments 3. Politicians 4. Sindh Building Control Authority (SBCA) 	<ol style="list-style-type: none"> 1. Weak co-ordination mechanism 	<ol style="list-style-type: none"> 1. Preparation of local co-ordination standard procedures 	<ol style="list-style-type: none"> 1. Damage to infrastructure which is also the cause of financial losses 2. Political interference
8c	Local Council			
	<ol style="list-style-type: none"> 1. Being a Municipal Corporation, has strong powers for governance including fund generation 	<ol style="list-style-type: none"> 1. Not actively pursuing the stated objectives 2. No councilor available at present 	<ol style="list-style-type: none"> 1. With awareness and training of councilors the local councils can be more effective 	<ol style="list-style-type: none"> 1. Confusion and chaos in the local development affairs at present until local bodies are established
8d	Financial Resources			
	<ol style="list-style-type: none"> 1. Local bodies law allows fund generation by the council 	<ol style="list-style-type: none"> 1. The council does not affectively pursue fund generation 	<ol style="list-style-type: none"> 1. Self sustainable financial system needs to be effectively followed 	<ol style="list-style-type: none"> 1. Poor maintenance of infrastructure and sanitation services

16. CONCLUSION OF SWOT ANALYSIS

Details of SWOT Analysis are given in the Annexure. The summary of the main findings of SWOT analysis are given in the following sections:

16.1 Strengths and Weaknesses

16.1.1 *Institutional Capacity*

Government agencies responsible for development of infrastructure, service delivery and operation and maintenance in Larkana have significant human and material resources and regulatory mechanisms at their disposal to undertake large scale development/redevelopment in multiple sectors.

However, their limited institutional coordination, financial capacity and less effort to engage local communities into planning process has resulted in ineffective use of budgetary resources and poor implementation of government policies.

16.1.2 *Economy*

Larkana has great economic potential in agriculture and agro – based industries; the economic growth can be accelerated by enhancing its agriculture sector production through medium scale industrial development and by establishing new infrastructure services for health and education sectors. A shift in local crop production and their marketing through local small or medium size entrepreneur, in presence of large labor force, adequate water resources and strong regional distribution networks, can produce maximum economic benefits.

16.1.3 *Regional Service Center*

The development of local education and health sectors at Larkana in last few years has also gained the attention of people from surrounding localities. Larkana's future development as a city offering enhanced provisions of health, education, recreation and commercial services, delivered through policy frameworks of sustainable development would help the city to grow as regional centre of economic production, infrastructure and services.

16.1.4 *Governance*

In the presence of multiple governance bodies aiming to exploit planning tools, the sustainable development seems relatively easy task. However, continuous change in local governance system in short span of time by Government of Sindh, created monopoly based situation between different governance agencies. As a result, development funds in Larkana have been massively spent only on developing / rehabilitating roads. On the other hand chronic problems like improving drainage system have been ignored by the governance authorities. Due to unfair distribution of resources and lack of management, present day Larkana lacks safe water supply and sanitation, suffers severe energy crisis and contamination of Rice Canal (City's main water body). Besides, unprecedented and galloping inflation, unemployment and law and order situation has given rise to economic uncertainty and social unrest.

16.1.5 Private Participation

Larkana's present Chamber of Commerce and Industry is a very active local agency, which at present has taken keen interest in highlighting various development constraints, through various forums and strongly advocated development of new small industrial estate. It has extensive understanding of local issues through its partners, who are also keen to see Larkana growing as a regional trade hub and have emphasized on local needs that require immediate action.

16.2 Opportunities and Threats

Effective management of resources by government agencies provides a great opportunity for Larkana to move towards sustainable development. Implementation of successful sustainable development strategies in Larkana would also be able to influence the functioning of local government expected to rise in form of challenging goals and identify their weakness.

The paradigm of sustainable development on this one hand demands effective management of local resources and on other hand it aims to preserve such resources so that it can be consumed by future generations.

Success of sustainable development in Larkana largely depends on the capacity of local governance agencies to implement strategies by engaging their partners. Limited capacity (financial or understanding) of local governance agencies and their partners to implement a systematic approach towards sustainability is the single most important threat that barricades paradigm implementation in coming future.

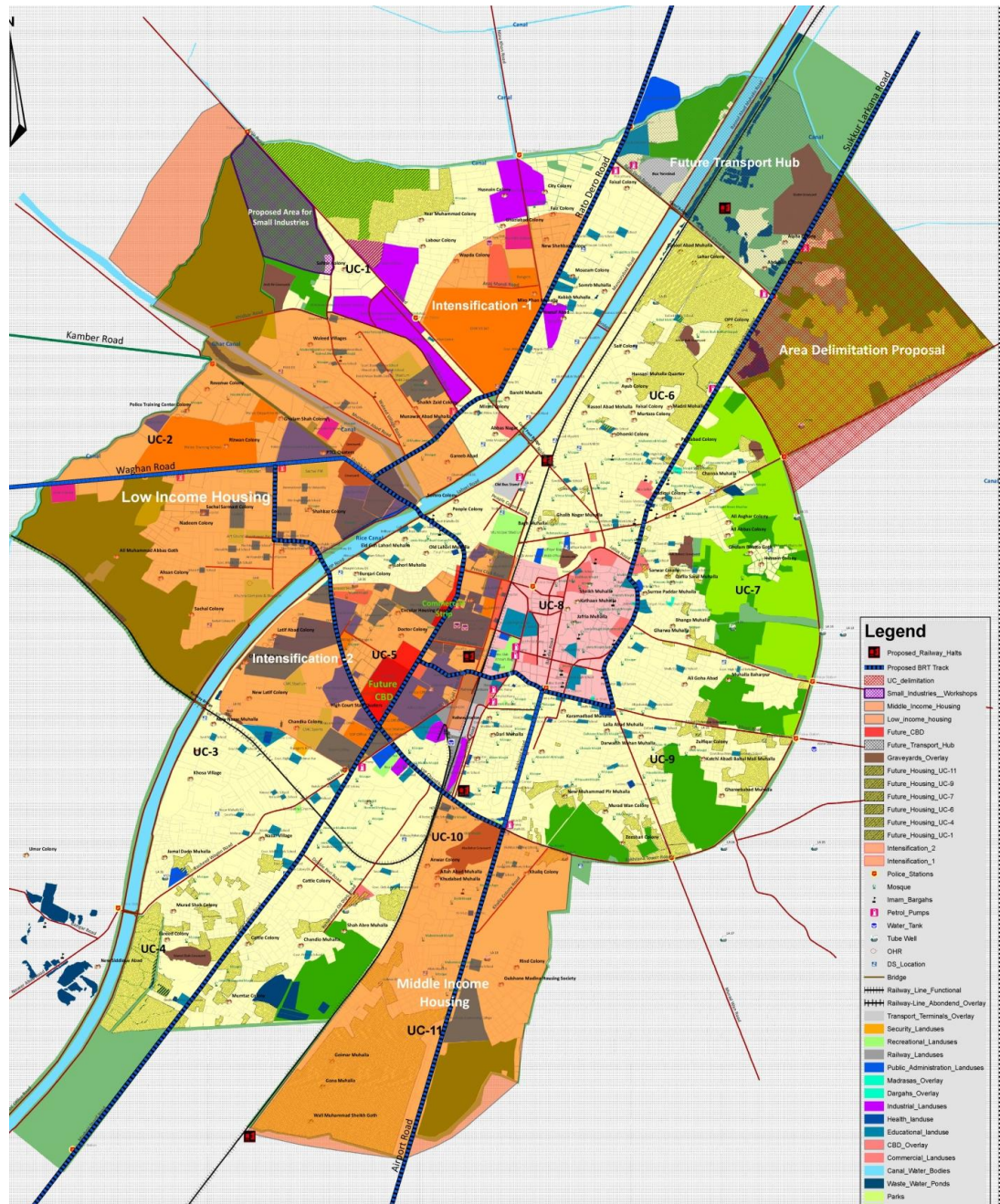
Some additional threats that may affect equitable distribution of utility services and resources includes; unfair distribution of local resource under political influence, unemployment due to deindustrialization, illiteracy giving birth to theft, crime and unemployment, lack of health facilities and polluted environment directly affecting human health, natural calamities and on-going tribal clashes.

17. VISION - 2033

VISION – 2033

“Restore past glory of Larkana as ‘Eden of Sindh’ and develop it on most modern urban development principles to be a clean, green, environment friendly, sustainable and most livable city in the northern Sindh and guide it to grow as the regional centre of economic production, infrastructure and social services. The human capital of the city to be developed in response to the governance, socio-economic and urban development needs of the city and the region.”

PART-III



FUTURE URBAN DEVELOPMENT STRATEGY

18. SPATIAL URBAN GROWTH

Larkana city has evolved in its present urban form from a small village, located at the southern bank of 'Ghaarwah Canal', into an active regional urban centre.

After independence in 1947, Larkana developed its strategic importance in the region when 'Ghaarwah Canal' was built there. The Karachi-Quetta main railway line passing through the centre of the city and a new branch line to Jacobabad divided the city into three main parts and brought major metamorphosis to historic urban form of the city.

Initially, after construction of railway track, the city started expanding on both sides of railway track. Later, the construction of 'Rice Canal' created a more formidable obstacle to its traditional linear growth pattern by constraining it to grow along north-east and south-west axis.

Throughout this process of urban form metamorphosis, Larkana never followed a systematic street pattern because city had never applied planning principles that could harmonize evolution process of its street network. Therefore, the whole Larkana city presents an 'ad-hoc' or 'spontaneous' type of development, within the space between regional roads / intercity roads passing through the city.

The present day Larkana, which was once known as 'Eden of Sind' because of its spacious sidewalks, well laid-out gardens and luxuriant foliage, has over the time turned into an extremely over populated, congested and polluted city, where encroachments, debris and sewage accumulation in open areas are common phenomena that have seriously threatened its inner city environment.

Larkana's present street pattern exhibits a radial urban form pattern radiating in all directions from the old city (UC-8), which is complemented by a number of convoluted semi-circular streets, organically evolved on traces of its historic urban form. In terms of spatial distribution, Larkana's present urban form comprises three main zones of the city, i.e. Old City, Central Part and New Planned Area.

Larkana's spatial urban growth has been restricted in the past due to presence of rich agriculture parcels that have restricted the city to grow in multiple directions. The shortage of adequate land for new residential development has created tremendous pressure on the city and created several inner city slums. The high rise development (2 to 5 stories) is a recent phenomenon. Small size buildings of 2 to 3 stories are now found on both sides of primary and secondary roads.

The trend of medium density mixed land use (residential and commercial) development has been observed along primary and secondary roads. The inner city streets are unable to accommodate increasing amount of traffic volume due to poor design of roads and encroachments occupying majority of road space.

The review of past development trends also indicates that the concerned authorities dealing with development process of Larkana took more interest in developing tertiary health and education related infrastructure, whereas less attention had been paid to rehabilitate the old city area and main commercial area of the town, or equitable distribution of social services.

18.1 Objectives

In accordance with the vision 2033, the long term objectives of the development strategy are spelled out as follows:

1. Infrastructure is like veins and arteries of urban body. Adequate, well maintained and smooth flowing infrastructure is a must for the healthy life of the city and its citizens.

The objectives in this regard would be:

- Have 100 percent underground piped sewerage system for the city with localized treatment plants and re-use of treated affluent.
 - The sewerage and storm water system will be separate in the existing and future planned areas, but for the congested old city areas where streets are narrow, combined sewerage and drainage system may be acceptable.
 - Despite Larkana having flat topography, with proper comprehensive sewerage system design, including localized treatment plants, the number of pumping stations would be reduced resulting in reduced O&M costs and increasing the sustainability of the system.
 - Safe water supply is of prime importance. Larkana at present has no piped water supply system. Therefore quality of water at the users' end cannot be monitored. The entire population of Larkana should be covered by piped water supply in phases.
 - The geometrical disposition of road network needs some adjustments. Except in the old town (UC-8 and eastern part of UC-5) the road widths are adequate but encroachments have reduced the road capacities causing traffic congestions. The district administration should firmly remove all encroachments and ensure smooth flow of traffic. The hawkers should be relocated in specially designated hawkers market.
2. The decongestion of the old city areas will be achieved with planning for commercial and business centres outside the old city.
 3. Housing is the basic human need. The long term objective will be to provide housing for all the additional population falling in different income groups. While housing for high and middle income groups may be left to the private sector, the government has to facilitate housing for the low income group. For the "poorest of the poor", areas will be earmarked for "Incremental Housing".

4. Larkana need to have clear strategies for accelerated economic growth to provide incomes and jobs to the growing population. Rice, mustard, tomato and guava are identified as the potential in agricultural growth and rice processing, oil expelling, fruit processing and packaging etc., have potential for agro-industrial growth. All efforts will be made to achieve higher yields, better processing, marketing and export facilitation and infrastructure development for industrial growth.
5. Moen-Jo-Daro has been put on the world's heritage map. Unfortunately it has failed to get a corresponding position on the worlds tourism map, due to lack of effort to develop tourism infrastructure and sale campaigns in the international tourism markets. A tourism and recreational city should be developed at a safe distance from the archeological site with the involvement of private sector, particularly travel and tourism industry, to attract not only foreign tourists but also the entertainment starved local /required population.
6. Governance should be improved to make it more effective and sustainable in terms of development control and quality of municipal services. Multitude of agencies, at present, concerned with the urban development, need to be brought under one point monitoring (The present chaotic situation expected to be improved with the installation of local bodies).
7. Health and educational facilities will be rationalized as presently there is too much emphasis on tertiary heath facilities and higher education and the whole hierarchy is too heavy. Larkana being a regional health service provider should increase level of facilities and outreach in the whole Larkana Division with some referral clinics in the region.
8. In the field of education, the city is targeted to attain 100% enrolment upto secondary level with 1:1 male: female ratio by 2033. In short term plan, city needs to improve the conditions of school building and to increase number of class rooms to cover current enrolment and provide training institutes for necessary skills to increase employability of the local population.
9. Spatial growth of city should consider preserving agricultural land as much as possible as agriculture is the foundation of Larkana's economy. Higher residential densities should be aimed at because low density sprawls increase the cost of infrastructure.

19. URBAN DEVELOPMENT STRATEGIES

19.1 Strategic Options for Urban Development

The Urban Development Strategy for the Larkana City is consolidation oriented and based upon Compact City Development Model, to ensure minimization of agricultural land getting converted to urban development.

The strategy options to meet the future land development requirements are:

- Densification within the UC boundaries
- Decongestion specially in the old city area
- Densification cum dispersal

19.1.1 *Densification*

The Consultants feel that the urban sprawl will need to be controlled through appropriate urban planning instruments, so that the urban development does not erode the rich and productive agricultural land on the periphery of the present urban development. Otherwise not only agricultural production will be lost, but also many farm workers will lose jobs and may have to migrate to urban areas. There are several empty pockets of land available in the town, which should be utilized for housing and commercial development; wherever feasible the vacant land will be allocated for amenities and parks to regain the old image of the “Eden of East”. As the cost of land will be higher in the developed areas, than in the peripheral agriculture areas, the private developer will be more inclined to use outlying agriculture land for new schemes. Appropriate incentives should be provided in the by-laws (such as higher F.A.R and permission of mix-use) for encouraging them to use the vacant land parcels within the developed areas or within the urban boundaries. Such incentives may also help in the decongestion of old city by encouraging more modern and convenient shopping and business centres close to the present city centre.

19.1.2 *Decongestion*

Some areas of the town specially in UC-8 and eastern part of UC-5 (around Station Road, Bandar Road, Jalius Road, Ghanti Phatik, Civil Hospital Road, Ladies Jail Road etc.) are too congested and experience severe traffic jams during peak hours. Markets, schools, hospitals and private clinics on these roads generate high traffic volumes and parking requirements, further deteriorated by encroachments by shopkeepers and hawkers. While, there should be complete ban on extension of buildings footprint and height or change of use from residential to commercial, the strategy should be to shift some of the markets (fish, vegetable, timber etc.) outside the UC-8 in UC-1 or UC-6. Besides future commercial centre secondary business centres should be developed close by in UC-10 or UC-11.

19.1.3 *Densification cum Dispersal*

This is a combination strategy and requires in-fill of open areas within the urban UCs and development of new self-sufficient communities away from the congested town for example along the Airport Road, Bakrani Road and Ratodero Road.

20. PROPOSED LARKANA URBAN DEVELOPMENT PLAN

20.1 Land Use Zoning

Larkana has had organic growth over the centuries. The old city naturally has mixed land uses and is currently the commercial hub of the town. The detail of present land use is shown on the Base Map.

The old city (UC-8) will remain as commercial hub of the city but over the years as new developments will take place, its characters may change. The retail commercial activity may move out to commercial centres to be planned in new communities, with malls, mix-use building, hotels etc. The old city will be relegated mainly for wholesale, very specialized trading and warehousing/storage.

The UC-5 will be maintained as public/government services zone. There are very large plots in this area with low floor area ratio such as DC House, Sambara Inn, etc. This is a very expensive urban land, which should be judiciously used. The area may be re-planned with DC House as the heritage landmark to be used as library or museum, a 3-4 star hotel with shopping mall and recreational club, cultural centre, theatre and a city park, alongwith some mixed use medium rise building to be used as district office complex. Similarly DC office area and Police Lines should also be re-planned (keeping in mind heritage sensitivities). This will give the city a modern city centre, which it needs badly.

UC-1 at present has a big area occupied by Jail, some government uses, and small industrial area and rice godowns. Leaving existing facilities, the rest of the area of UC-1 should be reserved for small industries, warehousing, godowns and cold storages. The area close to the bus terminal should be reserved for a trucking station with all the required facilities.

UC-2 besides having middle and high income townships i.e. Sachal Colony and Shaikh Zaid Colony also has a spillover of government and institutional functions across the canal from UC-5 and UC-3. This area is zoned for housing development in the future with subsidiary commercial centres. The remaining open areas in UC-4, UC-6, UC-7, UC-9 and UC-11 will be zoned for future housing schemes and townships which should be planned as self-sufficient communities meeting all the requirements of the amenities and green spaces.

20.2 Development Control

Larkana has been expanding in haphazard fashion and swallowing rich agricultural land for urban development. This trend of uncontrolled urbanization is not only causing waste of fertile land but also giving birth to new informal settlements on the peripheral areas.

Being an agricultural based economy, the city needs to have clear urban boundary in order to protect agricultural areas. Secondly, control of development is a cost effective and environment friendly solution. This could be achieved in different ways:

- Strict implementation of Sindh Town Planning and Building Control Regulation
- Restricting the provision of utility services to approved planned areas.

- Peri-Urban Land use control
- Vertical growth options: use of medium to high-rise buildings (5-10 storey's)

20.3 Land Bank

Most vacant land in the city is in private ownership. However, large areas particularly in UC-5, UC-3 and UC-1 are in public ownerships in the form of administrative buildings, health and educational buildings, housing colonies, railway and bus stations. With these structures the city also has government owned vacant and reserved land parcels like that for WAPDA, as shown in the map titled “Vacant Land (Land Banking) Map”.

Beside these land reserves, existing public buildings contain small foot prints on large lots with huge open areas around them. It has been observed that the maintenance of these areas is beyond the capacity of relevant authorities. Moreover the utilization of government land efficiently will decrease the land acquisition problems from private owners. Therefore, the Consultants suggest re-planning of these land parcels in order to utilize precious land in UC-5 and UC-3.

21. SECTOR WISE PROPOSED LONG TERM DEVELOPEMNT PLAN

21.1 Housing

Larkana's population is expected to grow from estimated 460,000 in 2013 to estimated 854,000 in 2033, at the growth rates representing present trends.⁸⁰ The population density varies union council wise and ranges from 250 persons per acre in the congested UC-8 comprising old city to 32 persons per acre in UC-1 & UC-3. Average density over the whole municipal area works out to 75 persons per acre.

The net additional population up to 2033 is estimated at 394,000. Assuming a household size of 7.37 and an average of 10 plots per/acre with 1.5 dwelling units per housing unit, the planned gross residential density works out to 110 person per acre. The total demand for additional land for housing thus works out to 3,600 acres, to accommodate 53,000 dwelling units. The vacant land available in various union councils is sufficient to meet this housing demand and there should be no need to use the agricultural land outside the urban UCs boundaries until 2033.

The replacement of dilapidated housing stock and squatters is not taken into account as dilapidated housing will be improved/reconstructed on the same land with the inter play of market forces. The squatters will be accommodated in the affordable incremental housing schemes.

21.2 Katchi Abadis

The housing conditions in the old city are far from satisfactory due to congestion, lack of sanitation, ill maintained buildings and mixed land uses. However, the old city caters to all income groups except the high income group. Elsewhere, new development has only catered for high and middle income group. As a result poor and low income families have no option but to go to the Katchi Abadies mostly squatting on government or hazard prone land. At present there is a shortage of over five thousand housing units mostly for the low income groups, which will not be catered for by the private sector and government has to step in. The provision of constructed housing by the government will be constrained by the funds availability; the emphasis therefore should be on regularization of existing Katchi Abadies and provision of incremental housing with the assistance of NGOs.

As per information provided by Directorate General of Katchi Abadis, there are twenty katchi abadies in Larkana out of which seven have been regularized but development work has not even started in six of these katchi abadies. Efforts should be made to provide funding for the development work at the earliest and also for the regularization of the remaining katchi abadies. Sites should also be identified for incremental housing with appropriate controls for not letting them fall in the hands of speculators and land mafia.

The proposed areas for incremental housing schemes are located in UC-1 & UC-2 near Industrial Area and in UC-11 to serve in future for new Industrial Estate along Airport Road.

⁸⁰ Refer Table-D4 in Section-7.4 of Volume-I in Part-I Situation Analysis

21.3 Transportation

21.3.1 Road Network

Most commercial and public institutions are located in UC-8 and UC-5. These are also the areas where most traffic generating functions are located, therefore extreme congestion is observed on roads serving these area which include Station Road, Bandar Road, Jalius Road, Ghanti Phatik, Civil Hospital Road, Ladies Jail Road etc. Concentration of colleges, schools, hospitals, private clinics and retail shops make the traffic flow at snail's pace and there are long hours of traffic jams. The available road widths are narrowed, because road sides are encroached by traders, illegal hawkers and haphazard parking of cars, vans and loading vehicles (motorized / animals driven).

Theoretically there are several options:

- 1- Widening Roads which may involve resistance and heavy land acquisition cost (ultimately even the wider road will be encroached).
- 2- Removal of encroachments and hawkers (this is a management issue but there will be resistance and political interference).
- 3- Making unidirectional traffic flow on some of congested roads with appropriate inter-linkages to discourage tendency to cut short and go against the flow (also a traffic management issue).
- 4- Exploring alternate routes to relieve congestions.
- 5- Relocating some of the high traffic generating function in the less congested areas.

In the immediate phase, concentration should be on removal of encroachments which will release substantial road width for traffic circulation (two to four lanes). Unidirectional traffic flow should be studied in greater detail through a separate traffic study. The relocation of some of the educational institutions and private health clinics will be a mid-term objective.

a) Traffic Management Program

- Introduce and enforce parking restrictions / charged parking
- Control traffic movement specially qingqis and pick-ups
- Manage unidirectional traffic flow
- Enforce traffic rules more strictly
- Removal of encroachments
- Improved road infrastructure and street furniture
- Registration of qingqis and phase-out the over provision.

b) Mass Transit

- An urban bus transport services is needed but in the present situation it will create additional problems on the already congested roads.
- Railway line passing throughout the length of the town is grossly under-utilized.
- The line may be used for the city mass transport.

- The feasibility of a shuttle urban rail service with public-private partnership may be studied from the new bus terminal to Defence City and ultimately to the Airport.
- The lateral connection from railway halts to areas on east and west of the railway line can be provided by qingqis and mini buses.

c) **Improvement of Traffic in old areas**

- Designated stands for qingqis / rickshaws
- Specified spaces for charged parking system
- Alternate route for loading and unloading vehicles
- Unidirectional traffic flow pattern
- Removal of encroachments from major distributors
- Pedestrianization through paving of circulation area in old bazaars

21.3.2 *Regional Connections*

Although the Terms of Reference for Consultants assignment includes study and prepare Urban Development Strategy for Larkana urban areas defined by Municipal Boundary including 11 union councils, it is well stood that the urban areas do not exist in isolation. Depending on the size and dynamism, the urban centres do influence and in return get influenced by the mobility of goods and services to and from adjoining areas.

Besides the large agricultural hinter land, providing the economic base for Larkana, there are three other developments in the surrounding of the city which give a regional prominence.

- Tertiary level of health and educational facilities with a large catchment area even beyond provincial boundaries. The regional routes are therefore important.
- Moen-Jo-Daro archeological remains which are world heritage site and a potential international tourism attraction. Moen-Jo-Daro, if properly managed, can create considerable spin off for the economy of Larkana.
- Garhi Khuda Bash - Ratodero has recently gained considerable prominence and attracts political workers and devotees in large number to the mausoleum of Bhutto family.

The regional routes into the city therefore will attract developers and speculators. Therefore development along these roads will need to be planned and properly controlled.

a) **Larkana Bypass**

It is important that regional traffic should not be allowed to enter the city and create congestion on the already congested roads. The Larkana by-pass road is already under-construction and a small portion from Bugti village/ Fatehpur to Naudero road near Dodai is remaining. There is a vast area between Larkana's urban boundary and the By-pass Road, which is presently agricultural, but is likely to come under urban

pressure especially at the junction with the roads leading to the city centre. Historically, new towns take birth at the cross roads, which is quite likely to happen here.

It is suggested that the whole area between the Bypass Road and the municipality may be declared as control zone with ban on land use change without the approval of District Administration and local bodies. At the same time some satellite townships may be planned on cross roads locations showing more potential /demand.

b) **Airport Road**

Moen-Jo-Daro Airport is some 25 kilometers away from Larkana, constructed to serve Larkana and nearby archeological remains of Moen-Jo-Daro, which are internationally renowned for true depiction of 4000 years old Indus Valley Civilization. The road connecting Larkana with the airport was until recently a single carriageway full of patches and less attractive for urban development. However, the road is now being reconstructed as a dual carriageway and declared a national highway N155. Because of this new road, not only the time distance from Larkana to airport has reduced, but land on the either side of road has also come under urban development pressure. Already, some large land allocations have been made on this road such as Quaid-e-Awam University, SBBB Medical University, Larkana Cadet College and 500 acres Industrial Estate. Besides, private developers have announced several projects and billboards are seen all along this road. Thus a core has been established to attract more development. The above mentioned projects will increase the land values of agricultural land on both sides of the road and developers and land speculators will move in with pressures for change of land use from the present agricultural to residential or commercial.

Although the N155 lies largely outside the Larkana Municipal limits, the prospects of development along this road are so real that it cannot be ignored while preparing the future urban development strategy for Larkana. Unless some control on the land along this road is exercised, it may have negative impact on the development of Larkana itself in future, as already some tea-shops and developer's offices have encroached upto the edge of the metalled portion of the road. The northern part of the road falls in Larkana Taluka, with southern most including the airport falling in the Dokri Taluka and middle section falling in Bakrani Taluka. The multiple jurisdictions will further complicate the matter especially as the other Talukas or District Council may not have the capacity to control the development. The planning and development of area on both sides of this road should be treated as a special project under the control of Deputy Commissioner, Larkana.

A Master plan may be prepared for "Moen-Jo-Daro Ribbon Development" incorporating the existing commitments and proposing residential, commercial and other uses complimenting each other. The area closer to the airport (north of it) may be reserved for tourism development, to capture the true potential of the historical site along with hotels, recreational leisure parks, etc. Alternatively, a separate MJD

Ribbon Development Corporation may be created for this area to develop and manage land. For the time being, the whole area along the road from Quaid-e-Awam University to the Airport with 2km depth on either side of the road may be declared as the Control Zone by the District Authorities with a ban on sale / purchase of land and on change of landuse until a development plan for this area is approved. No buildings or commercial activities should be allowed on 200 feet from the centre of road on either side.

c) **Wagan/ Naseerabad Road and Kambar Roads**

Wagan is a major road which used to be the main Dadu Road. Only recently some housing development has started along this road.

The zoning plan of the area around these roads may be prepared and sale/purchase of land and landuse change should be strictly controlled to avoid haphazard development along these roads or on their junction with the By-pass Road. The restrictions mentioned above for Airport Road will also apply to this road.

21.4 Water Supply⁸¹

Larkana has almost no piped water supplying and sewerage system. The situation regarding sanitation is also quite alarming. Most of the city dwellers rely on boring water and hand pumps, as due to higher water table boring is not difficult. However, the quality of water is the main issue as it cannot be monitored at the users' end. The TDS level range which used to be between 500 to 1000 mg/liter has now reached in between 1500 to 2200 depending on the location, as samples tested by Global Environment Management Service in 2013 taken at Arija shows TDS level only 980. Thus the ground water is proposed as appropriate source of water supply. Whereas for future the Consultants suggest that, comparative analysis study for surface and ground water quality and quantity would be conducted for detail assessment of appropriate water source.

In the long term, piped water supply system for 100% population will be the target. The strategy would be to install localized network in the planned housing schemes first and gradually cover the whole population in five year plans.

According to the accepted standards estimated daily water demand per capita is over 30 gallons. On this basis, the present water demand is likely to be about 13.8 million gallons/day. It is assumed that in next 20 years, water demand will rise to 40 gallon/capita/day; therefore the projected water demand in the city works out to be 34.2 million gallons/day by 2033. The major source of supply will remain the underground water supplied through tube wells and pipe network. The overall water demand will be reduced by reuse of treated effluent at least for horticulture and by other by water conservation measures.

Following Strategies should be considered for efficient water supply system in the City:

⁸¹ Updated status is given in the Addendum - 2018 - page no. 38

- In the long term, piped water supply system for 100% population by 2033 will be the target. A detailed master plan for integrated water supply, sewerage and drainage should be prepared with at least 3 years horizon and implemented in phases.
- The strategy would be to install localized network in the planned housing schemes first and gradually cover the whole population in five year plans
- The major source of supply will remain the underground water, pumped to overhead tanks and supplied through a piped network.
- Comparative analysis study for surface and ground water quality and quantity would be conducted for detail assessment of appropriate water source.
- The overall water demand will be reduced by reuse of treated effluent at least for horticulture and other water conservation measures.
- Introducing of Tariff System for utilities through Water Metering (first for water usage above marginal consumption then in long run for all users).

21.5 Sewerage and Drainage⁸²

Sewerage system of Larkana is in pathetic condition as this was designed for the need of 100,000 people in 1970s, extended for 170,000 people in 1980s and had addition of three sewers in 1995. But in a very short interval of five year, these efforts were wasted due to poor maintenance. Another attempt was made in 2006 on the advice of SCIP Consultants; a network of BLIS drains, which are concrete lined covered drains, was laid.⁸³

Beside all these efforts still today only 50% of present Larkana population is served with drainage systems. During monsoon season, whole of the city looks like pool of sewage due to absence of efficient drainage.

In the city of Larkana land is almost flat which causes waste and storm water stagnation in different areas. This ponding not only cause trouble in movement of waste and storm water flow, but also cause health issues for the surrounding localities due to ponding of sewage / gray water.

While there is logic in having a combined system of sewerage and drainage, the SCIP Consultant's insistence on BLIS drains has some inherent flaws. The drains need frequent desilting which is costly and cumbersome. They occupy large spaces in the road ROW and invite encroachment on their concrete top. Whereas BLIS drains can be accepted in the old city due to narrow lanes, there is no alternative to the underground sewers in the rest of the city. Therefore, the Consultants have recommended combined system of sewerage and drainage with phase-wise approach of replacing open drains with covered sewers of PE pipes. A detailed topographic survey of the city should be undertaken and detailed sewerage plan may be prepared according to accepted industry standards. This may reduce the number of pumping station and reduce the maintenance cost.

⁸² Updated status is given in the Addendum - 2018 - page no. 38

⁸³ Refer "Larkana Drainage Master Plan" prepared under SCIP Consultants

As most of wastewater stabilization ponds either not in working condition or not exist in the city, the Consultants are in full agreement with wastewater treatment proposal in the Larkana Drainage Master Plan, reproduced as below:

Decentralized wastewater treatment will be the best option for Larkana City for the following reasons:

- 1. The flat topography of the city will result in increased pumping costs for a centralized scheme, which will tend to counterbalance any theoretical savings that might be achieved from provision of one centralized treatment plant.*
- 2. The city is divided into clearly defined zones by the railway and particularly the Rice and Ghar Canals and carrying wastewater flows across these barriers will increase the cost of a centralized scheme.*
- 3. Where there is the potential to use treated wastewater for agriculture, as is the case in Larkana, the demand for treated wastewater is unlikely to be concentrated at one point and so can be better met by a decentralized scheme.*

Thus, Decentralized wastewater treatment plants are suggested to reduce pumping and infrastructure cost. The treated wastewater could be used for agricultural purposes. This could be achieved through waste stabilization ponds but the reuse of effluent is not recommended for the crops which can be eaten raw. However, the Consultants suggest that the treatment plants should be planned after a full fledged study for master plan of wastewater treatment.

The present waste water production is estimated as about 9.7 million gallons/day. It is expected that by 2033 sewerage water discharge in the city will reach 23.9 million gallons/day approximately. The proposed future strategies are:

- “Larkana Drainage Master Plan” prepared through SCIP Consultants should be implemented in phases, only as a short term solution.
- In the long term, a detailed topographic survey of the city should be undertaken and detailed sewerage plan may be prepared according to accepted industry standards. This may reduce the number of pumping station and reduce the maintenance cost.
- Combined system of sewerage and drainage is recommended with phase-wise approach of replacing open drains with covered sewers of PE pipes.
- Decentralized wastewater treatment plants are suggested to reduce pumping and infrastructure cost.
- The treated wastewater could be used for agricultural purposes. This could be achieved through waste stabilization ponds but the reuse of effluent is not recommended for the crops which can be eaten raw.
- A detailed long term Master Plan for sewerage /drainage and Master Plan for piped water supply should be prepared after topographical survey of the entire city at one feet contour interval implementation in phases.

21.6 Solid Waste Disposal⁸⁴

As per Local Bodies Act, Larkana Municipal Corporation (LMC) is responsible for the collection and disposal of solid waste. However in view of the limited capacity of LMC, the Government of Sindh contracted out liquid and solid waste disposal to a specially created corporation NSUSC.⁸⁵ The corporation was well equipped with machinery and had reasonably well financial resources but could not live up to expectations. Firstly, the Corporation's head office was in Sukkur and had only a token presence in Larkana in terms of management. Secondly, NSUSC management was in the hands of business executives and not engineers or PHE experts. Thirdly, it had to rely on sanitary workers borrowed from LMC who had no loyalties with NSUSC. Fourthly, it had acquired modern equipment but lacked trained staff and funds to run them. The Provincial Government has decided to change the management of NSUSC to make it more effective for Larkana, Deputy Commissioner Larkana, is now heading the NSUSC and as he is also the Administrator of LMC, a more coordinated solid waste and drainage management is expected.

The hazardous waste is also generated in the city which includes hospital waste and some oil spills from the mechanical workshops. According to best practices hospital waste need incinerators which are currently non-existent.

By assuming solid waste generation at the rate of 0.5 kg per capita per day (as per NRM), it is estimated that at present city population of 460,000 generates 230 tons solid waste per day (84,000 tons per year). This require approx 6 acres landfill site (0.5 acre per year per 10,000 population as per NRM)⁸⁶ at present to accommodate disposal in four layers. While by 2033, there is a need of approx 11 acres landfill site to accommodate 430 tons per day (156,000 tons per year) of 854,000 population, disposal in four layers. Sanitary landfill site is required to be allocated away from any residential area. Further the selection landfill site should be based on proper soil investigation and ground water level survey.

It may be concluded that in the medium term, the collection and disposal of solid waste may be outsourced to specialized waste management companies who would collect and recycle waste at a profit. Thus the LMC will be relieved of any financial burden on this account.

Suggested actions are:

- Immediate designation of Sanitary Landfill Site with special attention for hospital waste disposal.
- In the medium term, the collection and disposal of solid waste may be outsourced to specialized waste management companies who would collect and recycle waste at a profit. Thus the LMC will be relieved of any financial burden on this account.
- NSUSC is required to:
 - acquire the required additional Sanitary Workers as per requirements and arrange funds for POL and O&M of the equipments
 - make NSUSC self sufficient and resolve issues with TMA
 - clear liabilities for salaries and payment of vendors

⁸⁴ Updated status is given in the Addendum - 2018 - page no. 38

⁸⁵ NSUSC: North Sindh Urban Services Corporation

⁸⁶ Refer National Reference Manual: Section 8.4.6, Table 8.10 on page no. 243

- In long term introduce 4R Solid Waste Management System (reduce-reuse-recycle-reject)

21.7 Fire Brigade Station

There is a current need of five sub-stations to accommodate ten fire vehicles more.

- Establish sub-stations at different locations to ensure short response time for the whole city
- Increase service efficiency through number of vehicles, dedicated staff and financial mechanism
- To ensure readiness of all vehicles with ample stocks of POL and spares

21.8 Energy (Gas, Electric Power, Alternate Energy)

Natural gas and electric power network exist in the city but the supply of gas and production of electric power is going through a national energy crisis and power supply has become erratic.

The power demand is not only for houses and business, but also for street lighting, industry and irrigation. It is proposed that, the dependence on the thermal and hydro power may be reduced and the government should provide incentives for alternate energy such as wind, solar and bio gas etc. in the form of subsidies, soft loans, skill development and power buy-back option.

21.9 Health

Larkana City is blessed with a number of tertiary level health facilities. Specialized tertiary level hospitals are serving the regional population but need certain improvements for better quality of service. The data on secondary and primary level health facilities is weak as the quality of service to the population is not just dependent on number and size of physical facilities but also on the availability of medical staff and medicines etc. The hierarchy of health facilities, which is top heavy at present, needs to be rationalized.

For the improvement of health facilities there is a need of primary level health services by public sector like BHU serving the outlying areas to reduce pressure on the main referral hospitals. Surgical and diagnostic facilities and equipments need minor and major repairing and maintenance in the main hospitals. There is need of 199 doctors, 50 nurses and 23 paramedical staff to fill the vacant positions at present. Maintenance of existing incinerators in Chandka is required. New technologically more advance incinerators in the main hospitals are also required.

The main proposals are:

- The target for the year 2033 is 2 beds per 1000 projected district population as per standard given in the National Reference Manual on Planning and Infrastructure Standards (NRM). The addition of 4,300 beds is suggested to achieve the target in the plan period of 20 years.
- Emphasis towards better quality of primary health services by Public Sector.
- Larkana has abundance of private hospitals, clinics and diagnostic labs. There are neither registered nor regulated by any authority for the quality of service or sanitation etc including waste disposal.

- The Deputy Commissioner and District Health Officer should devise procedures to regulate private health facilities.
- In view of lack of staff and material, some parts of the hospital (like diagnostic services) may be outsourced to medical practitioners located in Larkana.
- Provide necessary arrangements to hold medical and paramedical staff in the city.
- Make compulsory provision of incinerators in all main hospitals for the safe disposal of hazardous waste generally and radioactive waste from LINAR.
- There should be some more health centres for specialized treatment like Uronology Centre etc.
- Run awareness programs and campaigns for the people to avail preventive health measures arranged by local administration.

21.10 Education

There is a shortage of schools and colleges for the present population if full enrolment is considered. But due to low enrolment ratio there are several schools and colleges which are not utilized properly. On the other hand, city also has private schools which cater for middle and high income groups. The schools and colleges expansion program will however need to take into account that the existing facilities are fully utilized first before new facilities are to be created.

There is a shortage of classrooms to the extent of 581 in primary and elementary schools, while 382 in secondary and higher secondary, as mentioned in the SAR, therefore, for the short term plan provision of 963 classrooms at different levels with the repairing of existing buildings and training of teaching staff is required.

As the long term plan is targeted to achieve 100% enrolment with 1:1 male female ratio by 2033, therefore, to accomplish this target 4,900 additional classrooms will be required to accommodate upcoming generation. This need could be fulfilled either by addition in existing buildings or more new schools and colleges will be constructed in future to serve estimated student population of 158,000.

The spatial distribution of schools is lopsided. One of the reasons for this is that the Education Department, as a policy, constructs schools in the communities where free government land is available or where the land is provided by the community free of cost. The Stakeholders workshop rejected this policy and demanded change in the government policy.

The other problem is that in most of private sector development schemes, no amenities plots are provided for schools.

21.10.1 Higher Education

Larkana is the focal point for the higher education services for north Sindh. Higher education facilities include among others, Qaid-e-Awam University of Science and Technology, SMBBMU and SZABIST.

21.10.2 Vocational Training

Skill development centers and vocational training institutes are to enable young men and women to be productive in the society and also to promote local handicraft. It is suggested to develop skill development centres and vocational training institutes for men and women on priority basis in less privileged areas to increase job opportunities for the upcoming youth.

21.11 Recreation

In all zones there are parks of different sizes and standards, which provide recreational spaces for different uses. However, these facilities lack amusement parks, leisure areas, zoo, water parks etc. which could be provided in future. The urgent actions required are:

- Repairing of existing recreational facilities and completion of under construction work.
- Introduce financial mechanism (like charging) for public parks and playgrounds to make them self sustaining.
- Special arrangement for security, parking and alternate route during religious and cultural activities in the city.
- Revitalization of Cinemas (conversion to mixed use building i.e. shopping and entertainment).
- Provision of touristic facilities for Meon-Jo-Daro, and development of a theme park by private sector.
- Encourage Private Investment in recreational sector (revitalization of existing cinemas and provision of touristic facilities in MJD)
- Provide city scale Zoo and Amusement Water Park facilities for future, possibly on the Airport Road.

21.12 Urban Governance

Most of the urban problems facing medium or small cities are due to bad governance or lack of governance. These cities have grown in population and acquired all the complexities of urbanization such as migration, congestions, ethnic mix, lack of housing and infrastructure and a vocal society more aware of their rights than their obligations. Unfortunately, governance institutions and administrators have not acquired the maturity to perceive the complexity of urban problems, much less to proactively manage them. It is not possible to solve urban problems with rural mind sets. In most such cities especially in Sindh, the governance framework and institutions are practically subservient to the local political leaderships who have strong influence on postings and transfers of bureaucracy as well as allocation and utilization of funds. The political affiliations create pressure groups that effects good governance, a phenomenon which is abundantly clear in the poor building control, encroachments, incompatible land uses and ineffective rehabilitation of urban infrastructure. Despite existence of local government institutions, relevant bylaws and regulations and previous master plans, Larkana today looks like an almost ungoverned city except in small patches where large government projects and functionaries are located.

The other major problem with respect to governance is O&M funds for recurring expenditure. While high profile mega projects are conceived and implemented here with steady flow of development funds, after ignoring much needed basic level / primary level projects.

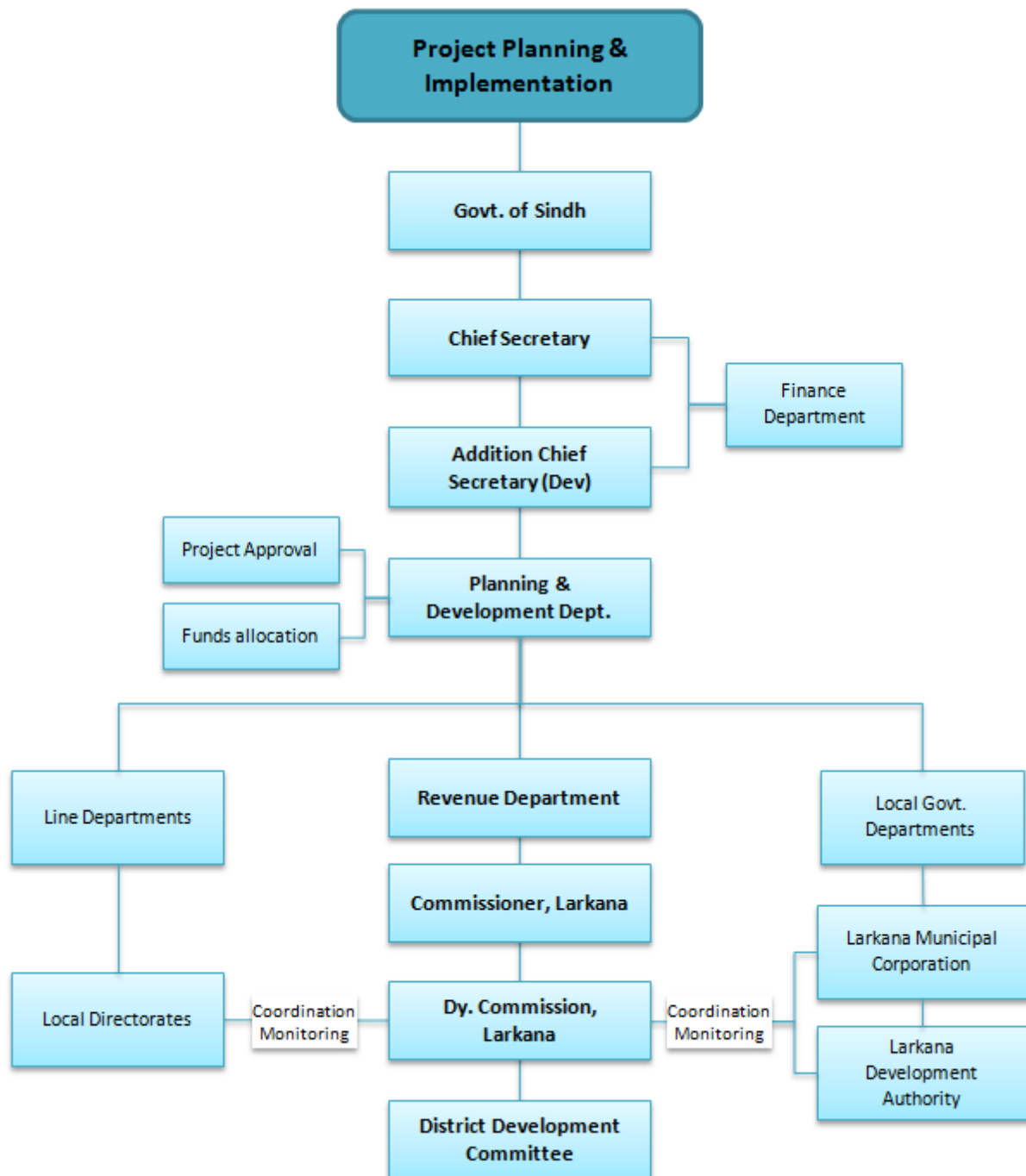
Moreover, the required funds for operation and maintenance are not allocated to the concerned authorities resulting in poor up keep or at times, deterioration. Nowhere, this phenomenon is more obvious than in the case of Larkana Development Package as projects completed under this package are already in poor condition of repairs. On the other hand the local administration does not find enough funds even for desilting of drains which are now choked and unless cleaned will not be able to drain rain water from the city.

The local bodies as per the Sindh Local Bodies Act 2013 seem to have ample autonomy and opportunities to raise funds for them. However, in practical terms they are largely depended on provincial government in allocation of their share of funds. The release of funds is also erratic most of which comes with substantial delays. According to the Administrator, Larkana Municipal Corporation, their funds are not sufficient even for the payment of monthly salaries to the janitorial staff. The Local Bodies Act authorizes the municipal corporations to raise funds through various fees, levies and activities. It appears that the LMC staff has neither the motivation nor the capacity to organize the fund raising activities. Moreover, only a fraction of collectible mandatory fees and levies gets into the official coffers as the pilferage is reported to be common.

At present there is a very loose framework for the governance in Larkana due to the absence of local bodies. A multitude of agencies are responsible for the development and maintenance of urban services loosely coordinated by the Deputy Commissioner. Local Bodies elections are expected to be held in November, 2014. After the elections, when local bodies are established, the Mayor will be in-charge and various development agencies will be reporting to him directly or through District Coordination Officer. However, not much improvement is expected unless the capacity of the local bodies is increased and the elected representatives are aware of their responsibilities. We suggest that training programmes and presentations may be arranged for the local representative and official to make them aware of the development plan and strategies and get their commitment for the planned development. We suggest the following measures are required:

1. Training of elected representatives, directed towards understanding their role as initiator of development.
2. Motivation of elected representative to understand the urban problems faced by residents and act in cohesion, above their political affiliations, to solve them.
3. Training of Municipal Corporation and Development Authority staff to increase their capacity.
4. Transfer of funds of completed projects approved in the PCI form under 'annual recurring expenditure' to the local agencies responsible for the O&M.
5. Encourage the LMC to generate funds from all authorized sources be to self- sufficient and sustainable. No governance is possible at local level without being sustainable.

URBAN GOVERNANCE GENERIC ORGANOGRAM



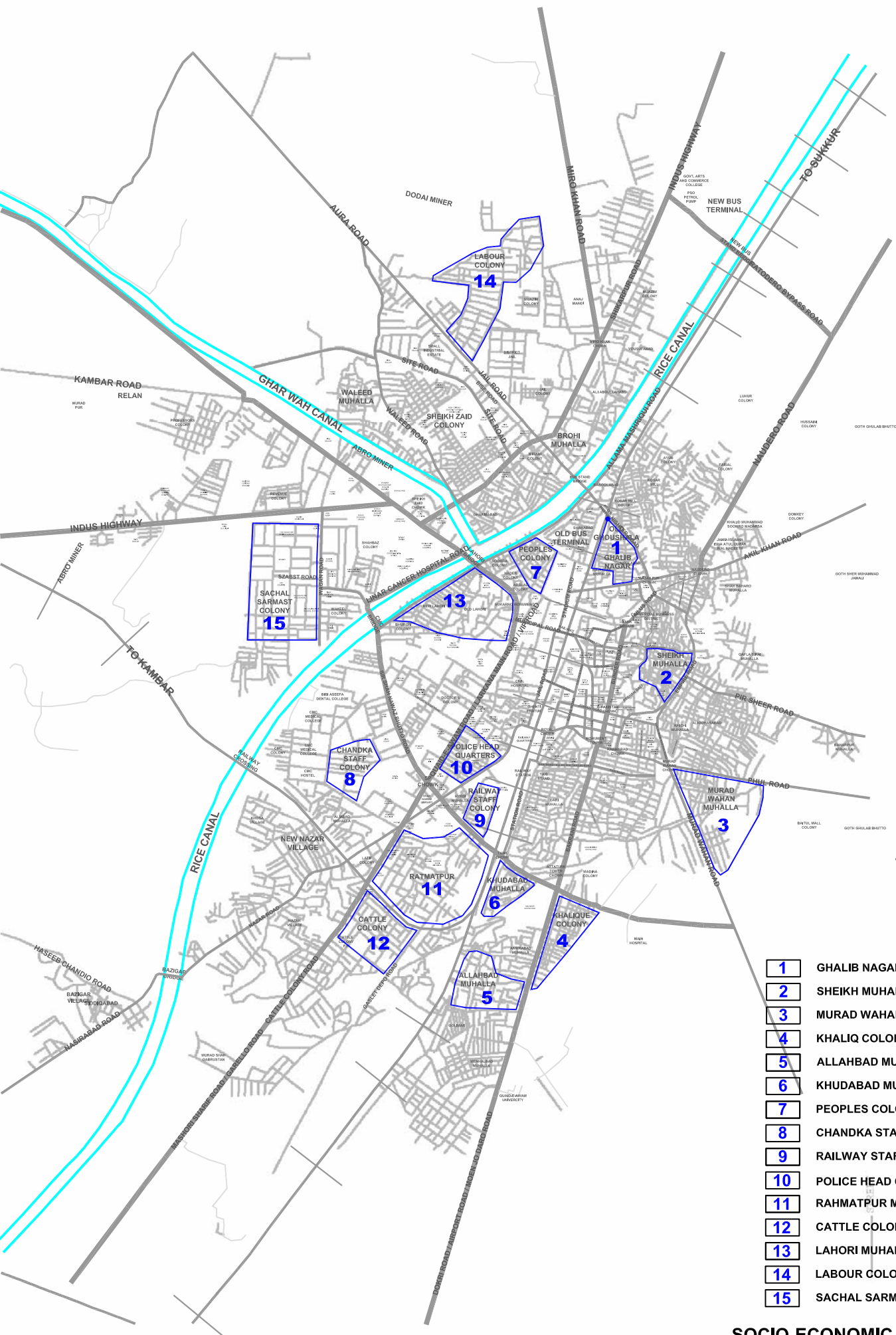
ANNEXURE-A

SURVEY MAPS

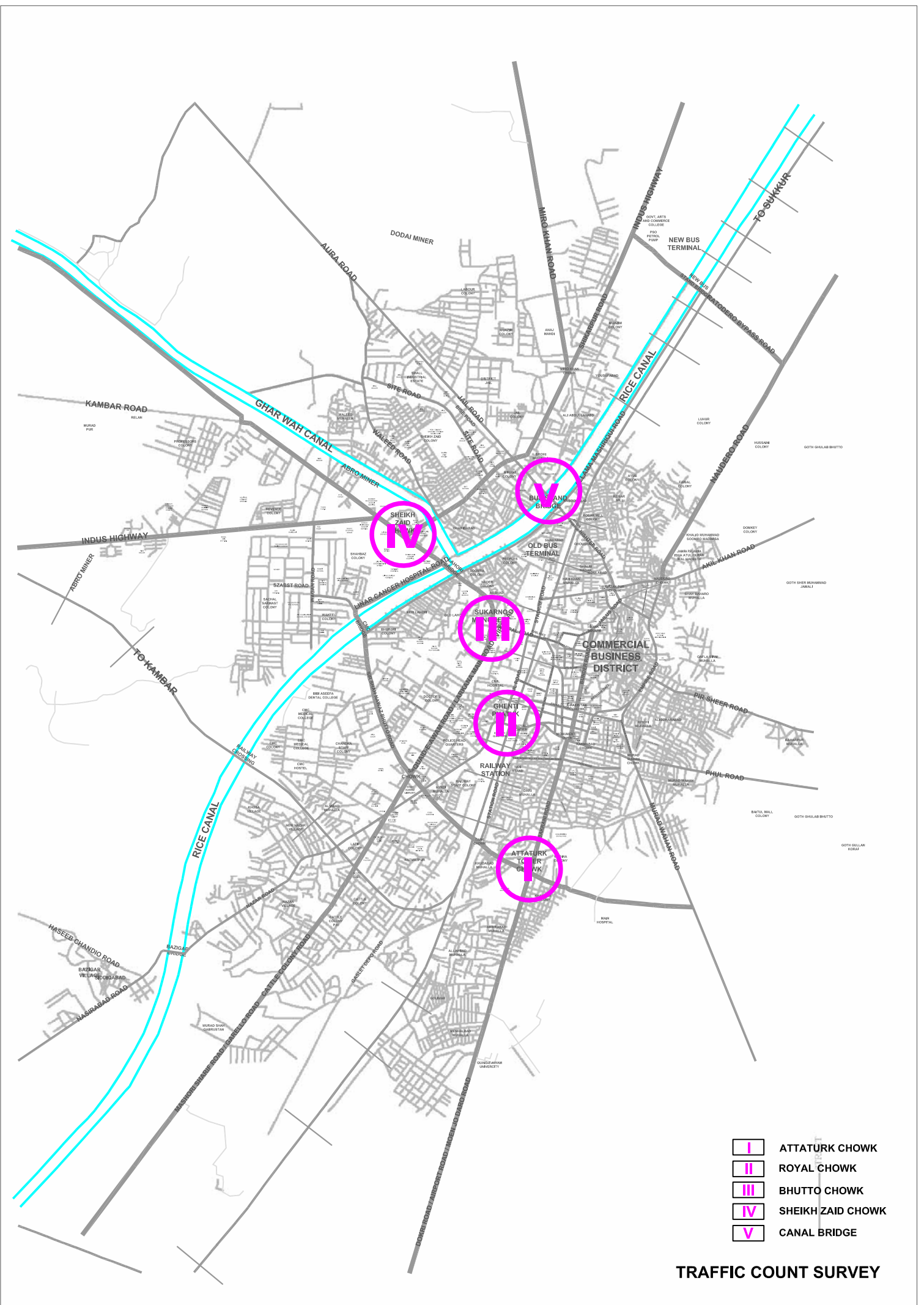
Socio-Economic Survey Map

Traffic Count Survey Map





- | | |
|----|-----------------------|
| 1 | GHALIB NAGAR |
| 2 | SHEIKH MUHALLAH |
| 3 | MURAD WAHAN MUHALLAH |
| 4 | KHALIQ COLONY |
| 5 | ALLAHBAD MUHALLAH |
| 6 | KHUDABAD MUHALLAH |
| 7 | PEOPLES COLONY |
| 8 | CHANDKA STAFF COLONY |
| 9 | RAILWAY STAFF COLONY |
| 10 | POLICE HEAD QUARTERS |
| 11 | RAHMATPUR MUHALLAH |
| 12 | CATTLE COLONY |
| 13 | LAHORI MUHALLAH |
| 14 | LABOUR COLONY |
| 15 | SACHAL SARMAST COLONY |



- I ATTATURK CHOWK
- II ROYAL CHOWK
- III BHUTTO CHOWK
- IV SHEIKH ZAID CHOWK
- V CANAL BRIDGE

TRAFFIC COUNT SURVEY

ANNEXURE-B

SURVEY QUESTIONNAIRS

Socio-Economic Survey Questionnaire

Stakeholder's Opinion Survey Questionnaire



URBAN DEVELOPMENT STRATEGY FOR LARKANA

SOCIO-ECONOMIC SURVEY QUESTIONNAIRE

Date: _____

Time: _____

Name: _____

I.D: _____

Area/town/village/neighborhood: _____

Age of House Hold Head: _____

Profession of Household Head: _____

Employment Status Employed ☐ Self employed ☐ Others _____

Monthly Income: _____ Additional Source of income: _____

Monthly Expenditures: Food _____ Education _____ Recreation _____

Transport _____ Health _____ Utilities _____

Household Information/ Family Structure:

S. No.	Name	Sex	Relationship with head	Age	Education	Profession
01						
02						
03						
04						
05						
06						
07						
08						
09						
10						

Family System: Nuclear ☐ Joint ☐

House Ownership Information Rented ☐ Family owned ☐ Rent Free ☐

If Rented, Amount of Rent _____

Type of House: Mud Brick House ☐ Burnt Brick House ☐

Traditional Old Const. House ☐ Newly Constructed ☐

Year of Construction: _____ or
11-15 yrs old ☐ 16-20 yrs old ☐ 01-05 yrs old ☐ 06-10 yrs old ☐
20-25 yrs old ☐ 26 + yrs ☐
Size/ Area of House: _____ No. of Rooms ☐ No. of Stories ☐

How long you have been living on this address: _____

Where were you living before? _____

Do you have family member living elsewhere in: Pakistan ☐ Abroad ☐

Approximate no. of houses in your community/ village: _____

How much money you spend on housing? _____ (per month/per annum)

Source of Water Supply: Hand Pump ☐ Wells/ Boreholes ☐ Piped Water Supply ☐

Sewerage Disposal Mechanism: _____

Type of Toilet: Drained (Flush System) ☐ Un-drained (manual cleaning system) ☐

How do you dispose-off garbage of your house daily: Privately appointed sweepers collecting? ☐
Thrown outside the Home ☐ Thrown in the bins provided by TMA ☐

Electric Power: Yes ☐ No ☐

Gas Connection: Yes ☐ No ☐

Telephone/Wi-Fi: Yes ☐ No ☐

What type of transport mode you use for daily trip making purpose:

Public ☐ Private ☐ Other _____

If you are a frequent public transport commuter, How do you Access public transport?

Distense / Time from Home-to-Work: Distance _____ Time _____

What type of health facilities Available in your area: Clinics ☐ Dispensaries ☐ Qualified Doctors ☐

Is any vaccination campaign have been conducted in your area? Yes ☐ Never ☐

If Yes, What type of vaccination had been provided _____

Does Anti-Mosquito spray campaigns has regulary been conducted in your area?

Yes ☐ Never ☐

What type of educational facility provisions satisfy you more? Private ☐ Government ☐

Remarks : _____

--- MANY THANKS FOR YOUR PARTICIPATION ---

URBAN DEVELOPMENT STRATEGY FOR LARKANA

STAKEHOLDER'S OPINION SURVEY QUESTIONNAIRE

Date: _____

Time: _____

Your answers to the following questions will help us to prepare Larkana Urban Growth Strategy Plan-2013 for Larkana.

Note: All the information collected through this survey will be highly confidential and not be used for any other purpose except this study.

1. Personnel information

Name: _____

Profession: _____

Department: _____

Designation: _____

2. Gender?

a) Male

b) Female

3. What is your age?

a) 18-25

b) 26-35

c) 36-45

d) 46-55

e) 56-65

f) 65+

4. Since how long you have been living in Larkana City?

a) 0-5 years

b) 5-10 years

c) 0-20 years

d) 20+

5. Status of Living?

a) Permanent Resident

b) Job Employment / Business

QUALITY OF LIFE

6. To what extent you are satisfied with living in Larkana City?

a) Very Satisfied

b) Satisfied

c) Dissatisfied

d) Very Dissatisfied

e) No Opinion

7. What do you like most about living in Larkana?

a) Convenient & Friendly city

c) Medical facilities

e) Family atmosphere

b) Nominal cost of living

d) Educational Facilities

f) Caring community & friendliness

8. What do you like least about living in Larkana?

a) Leaders elected by popularity rather than competency

b) Poor academically performing schools

c) Population growth is the main cause of unplanned development

1. High 2. Medium 3. Low

d) Lack of recreational/entertainment activities/ No activities for youth

e) Poor streets/roads

f) Lack of housing/ Expensive Housing/ Poor Housing

g) Expensive transportation charges

- h) City not kept clean/ Negligence of solid waste management i) Disrespectful citizens
- j) Decreasing economical conditions of the city

9. How would you categorize the quality of life in Larkana?

- a) Best in Upper Sindh b) Below average c) Poor
- b) Generally good e) No opinion f) Has been deteriorating

10. To what extent following public services indicators are important for the quality of life in Larkana?

Opinion	Very Important	Important	Somewhat Important	Not at all Important	No Opinion
Parks and recreation facilities (public & private)					
Shopping opportunities					
Environmental quality of water and open space					
Quality of Education					
Public services (Library, Police, Fire)					
Proximity to employment					
Public Transport					
Walkability					

HEALTH FACILITIES

- a) Type and Number of health facilities _____
- b) Plot area for each building _____
- c) Facilities available _____
- d) Condition of building _____
- e) No of Beds _____
- f) No of sanctioned Doctors and actual _____
- g) No of sanctioned Nurses and actual _____
- h) Daily visitation _____
- i) Bed occupancy _____
- j) Annual budget _____

EMPLOYMENT

11. Is anyone in your house work outside Larkana City/Province/Country?

- a) Yes b) No

If Yes, why & where _____

GROWTH & DEVELOPMENT

12. What do you think about the current growth rate in Larkana? (Population & Physical Development)

- a) Too Fast b) About Right
c) Too Slow d) No Opinion

13. In your opinion, what aspect of physical planning can thrive socio-economic life inside the city???

14. Which of the following types of developments would you like to see more of in Larkana, keep at the same level, or see fewer of?

Description	More	Same	Fewer	No Opinion
Office buildings				
Retail centers				
Neighborhood service retail				
Mixed Use Developments (live/work)				
Restaurants				
Entertainment/attractions				
Hotels/motels				
Industry				
Parks				
Apartments				
Town houses				
Moderate Homes				
Luxury Homes				
Low-Income/Public Housing				

PLANNING

15. At present, to what degree you are satisfied / dissatisfied with the quality of following provisions existing in Larkana?

Description	Strongly Satisfied	Satisfied	Dissatisfied	Strongly Dissatisfied	No Opinion
The Number of retail business in the city					
The overall appearance of your neighborhood					
The overall appearance of your city					
The appearance of medians and right of way					
Overall appearance of commercial					

buildings					
Overall quality of Parks in the city					
Overall level of safety in the community					
Availability of well-paying diverse job opportunities					
The Distribution of commercial and residential land use throughout the city					
The quality & quantity of public parks & recreational facilities					
Quality of streets, water, sewer and infrastructure					

Additional Comments

-MANY THANKS FOR YOUR CORPORATION-

ANNEXURE-C

TABLES

Table-1	Migration towards Larkana
Table-2	Duration of migrants in Larkana
Table-3	Family members outside the Larkana
Table-4	Family System
Table-5	House Ownership
Table-6	Type of House
Table-7	Year of Construction
Table-8	Size of Housing Unit
Table-9	Number of Rooms
Table-10	Room Occupancy
Table-11	Number of Stories
Table-12	Source of Water Supply
Table-13	Sewerage Disposal System
Table-14	Solid Waste Disposal
Table-15	Electric Power Supply
Table-16	Gas Connection
Table-17	Telephone / Internet Access

TABLES

TABLE-1 MIGRATION TOWARDS LARKANA

Description	No. of Respondent HH	Percentage %
Permanent Tenant	78	27.18
Move from other areas of the City	74	25.78
With in Taluka	36	12.54
With in District	47	16.38
With in Province	50	17.42
With in Country	2	0.70
Total	287	100.00

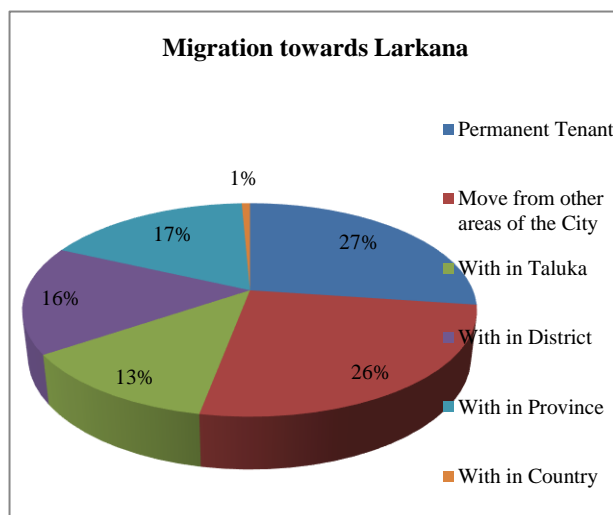


TABLE-2 DURATION OF MIGRANTS IN LARKANA

Description	No. of Respondent HH	Percentage %
Less than 5 year	60	17.39
5 - 10 years	52	15.07
10 - 20 years	70	20.29
20 - 40 years	82	23.77
40 - 70 years	30	8.70
More than 70 years	51	14.78
Total	345	100.00

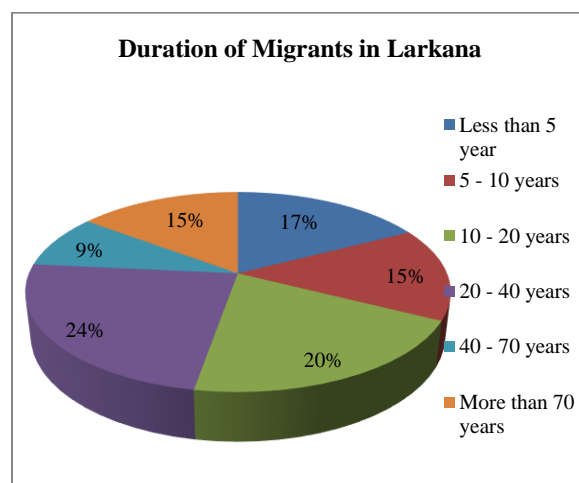


TABLE-3 FAMILY MEMBERS OUTSIDE THE LARKANA

Description	No. of Respondent HH	Percentage %
Pakistan	131	55.98
Abroad	15	6.41
Not Migrated	88	37.61
Total	234	100.00

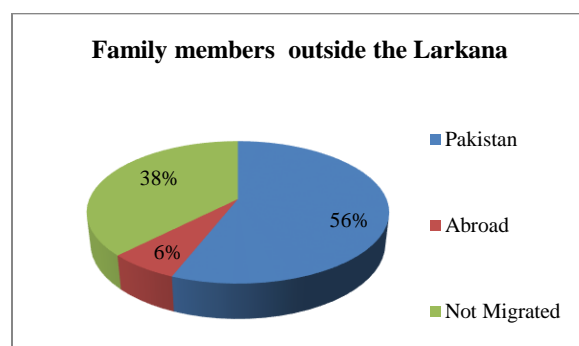


TABLE-4 FAMILY SYSTEM

Description	No. of Respondent HH	Percentage %
Joint	171	48.31
Nuclear	183	51.69
Total	354	100.00

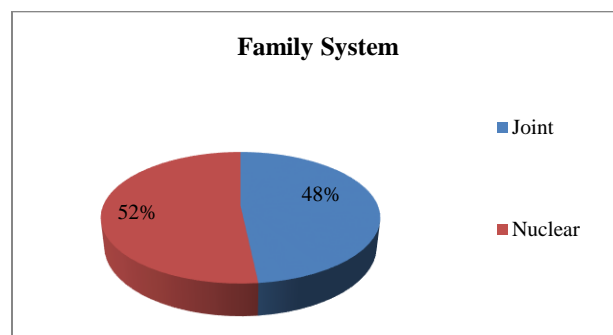


TABLE-5 HOUSE OWNERSHIP

Description	No. of Respondent HH	Percentage %
Family Owned	228	64.41
Rented	95	26.84
Rent Free	31	8.76
Total	354	100.00

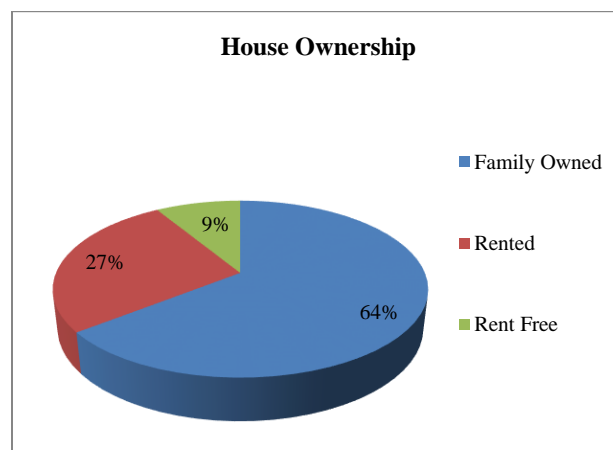


TABLE-6 TYPE OF HOUSE

Description	No. of Respondent HH	Percentage %
Katcha	39	11.02
Semi Pacca	4	1.13
Pacca	311	87.85
Total	354	100.00

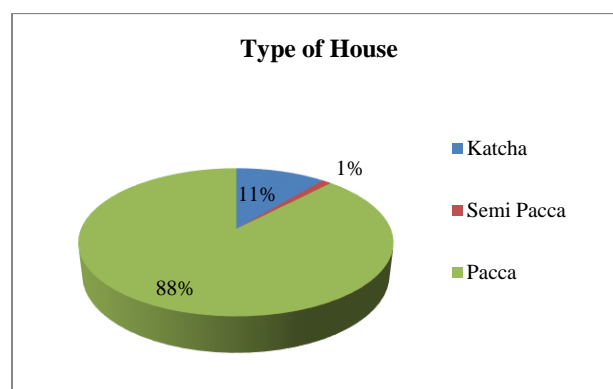


TABLE-7 YEAR OF CONSTRUCTION

Description	No. of Respondent HH	Percentage %
Less than 1 Years	4	1.25
1 - 5 Years	59	18.44
5 - 10 Years	33	10.31
10 - 15 Years	38	11.88
15 - 20 Years	20	6.25
20 - 25 Years	34	10.63
25 & above Years	132	41.25
Total	320	100.00

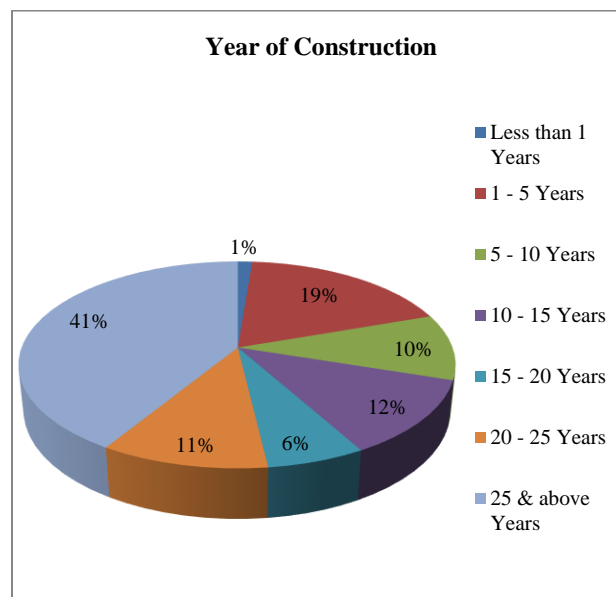


TABLE-8 SIZE OF HOUSING UNIT

Description	No. of Respondent HH	Percentage %
Below 60 sq. yds	26	8.07
60 - 120 sq. yds	147	45.65
120 - 240 sq. yds	108	33.54
240 - 400 sq. yds	25	7.76
400 - 600 sq. yds	11	3.42
Above 600 sq. yds	5	1.55
Total	322	100.00

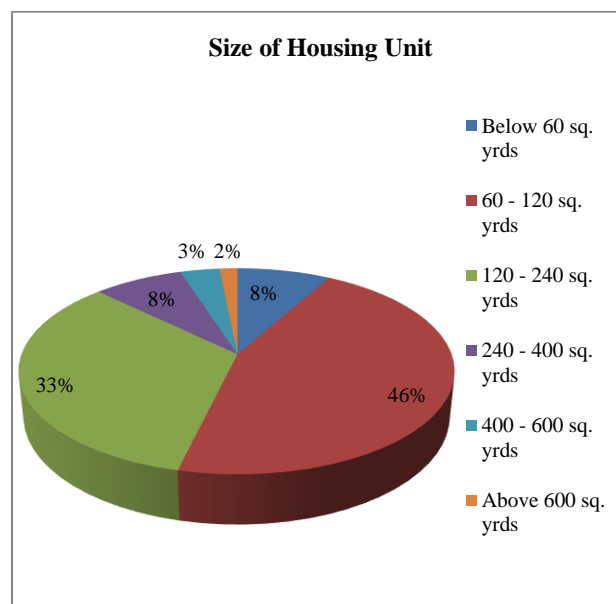
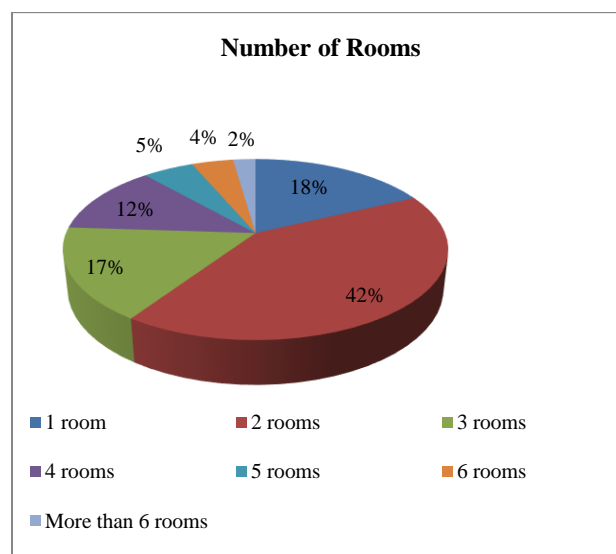


TABLE-9 NUMBER OF ROOMS

Description	No. of Respondent HH	Percentage %
1 room	56	17.89
2 rooms	130	41.53
3 rooms	52	16.61
4 rooms	39	12.46
5 rooms	16	5.11
6 rooms	13	4.15
More than 6 rooms	7	2.24
Total	313	100.00



**TABLE-10 ROOM OCCUPANCY
(Persons/Room)**

Description	No. of Respondent HH	Percentage %
1 person	28	8.92
2 persons	52	16.56
3 persons	74	23.57
4 persons	52	16.56
5 persons	41	13.06
6 persons	23	7.32
Above 6 persons	44	14.01
Total	314	100.00

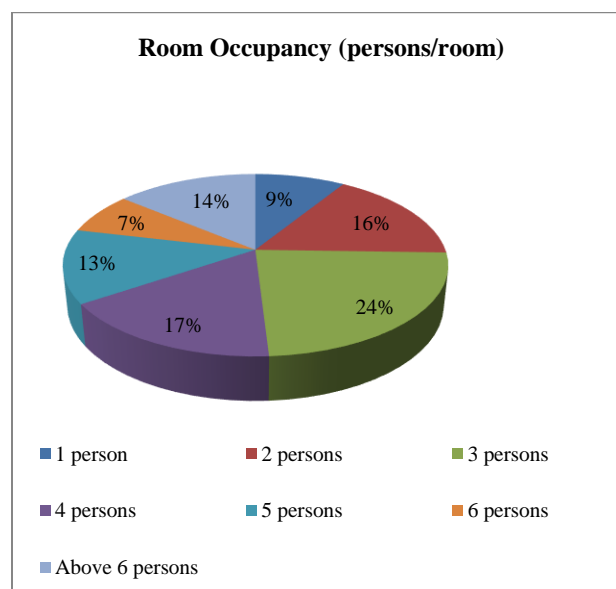


TABLE-11 NUMBER OF STORIES

Description	No. of Respondent HH	Percentage %
Ground Floor	283	82.75
G + 1	58	16.96
G + 2 and Above	1	0.29
Total	342	100.00

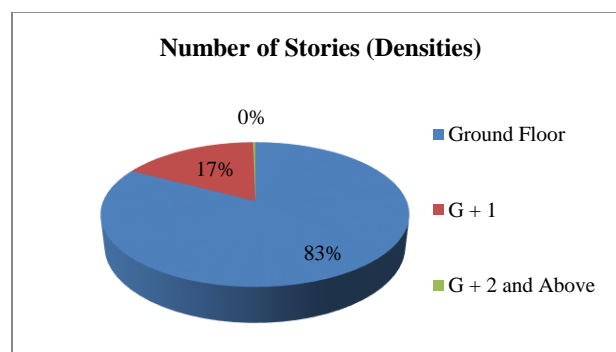


TABLE-12 SOURCE OF WATER SUPPLY

Description	No. of Respondent HH	Percentage %
Hand Pump / Wells / Boreholes	337	95.74
Piped Water Supply	15	4.26
Total	352	100.00

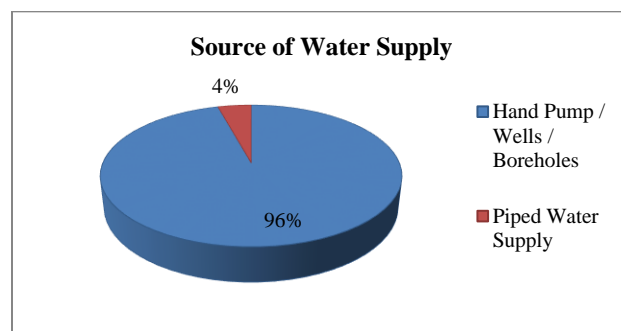


TABLE-13 SEWERAGE DISPOSAL SYSTEM

Description	No. of Respondent HH	Percentage %
Drained (flush system)	273	79.59
Un-drained (manual cleaning system)	70	20.41
Total	343	100.00

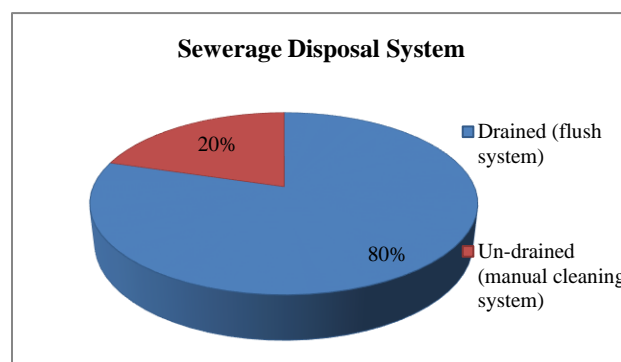


TABLE-14 SOLID WASTE DISPOSAL

Description	No. of Respondent HH	Percentage %
Sweeper Collection	8	2.33
Thrown in TMA provided Bins	54	15.74
Thrown outside the House	281	81.92
Total	343	100.00

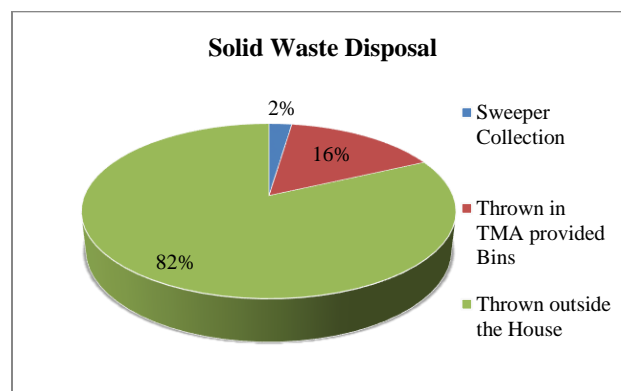


TABLE-15 ELECTRIC POWER SUPPLY

Description	No. of Respondent HH	Percentage %
Yes	343	96.89
No	11	3.11
Total	354	100.00

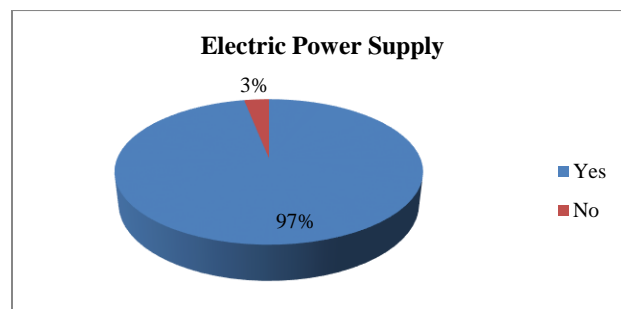
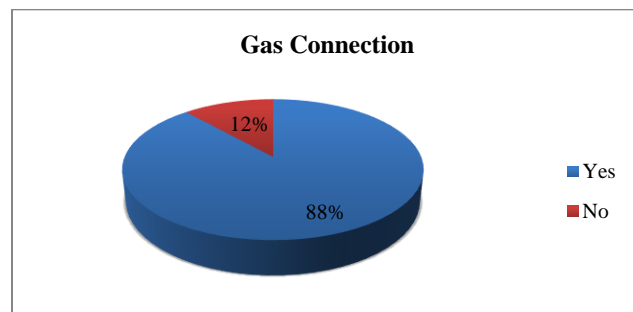
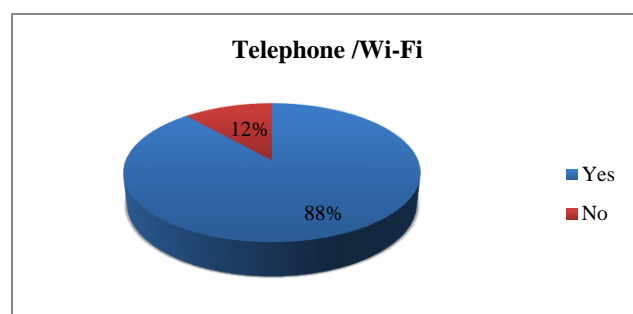


TABLE-16 GAS CONNECTION

Description	No. of Respondent HH	Percentage %
Yes	313	88.42
No	41	11.58
Total	354	100.00

**TABLE-17 TELEPHONE / INTERNET ACCESS**

Description	No. of Respondent HH	Percentage %
Yes	44	12.43
No	310	87.57
Total	354	100.00



ANNEXURE-D
PRESENTATIONS AND WORKSHOPS

URBAN DEVELOPMENT STRATEGY FOR LARKANA

PRESENTATIONS AND WORKSHOPS WITH STAKEHOLDERS OF LARKANA

1st CONSULTATIVE WORKSHOP ON URBAN DEVELOPMENT STRATEGY LARKANA

Record of Discussion

Venue: Hotel Sambara Inn, Larkana, Sindh
Date: Saturday, February 15, 2014

Participants:

- | | | |
|-----|------------------------------------|--|
| 1. | Dr. Saeed Ahmed Magnejo | (Commissioner Larkana Division) |
| 2. | Mr. Assadualh Abro | Deputy Commissioner, Qambar- Shahdadkot, Qambar |
| 3. | Mr. Masood Ahmed Bhutto | Assistant Commissioner Larkana |
| 4. | Mr. Assadullah Bhatti | Assistant Commissioner Mirokhan |
| 5. | Mr. Syed Gulam Shah | Deputy Director (P&D) Commissioner Office Larkana |
| 6. | Mr. Zakir Hussain Gopang | Assistant Director Development Larkana |
| 7. | Mr. Munier Ali A.E.N | The Administrator, Larkana Municipal Corporation |
| 8. | Mr. Mumtaz Halepoto | Director Planning/ Directorate of UP&SP, P&D Dept. GOS, Karachi. |
| 9. | Ms. Naila Haq | Deputy Director (Environmental) UP&SP, P&D Dept. GOS, Karachi |
| 10. | Mr. Qadir Bux Sangi | Deputy Director (Procurement),UP&SP |
| 11. | Mr. Muhammad Faraz Khan | Deputy Director (Planning & Development Control),UP&SP |
| 12. | Mr. Gulab Ahmed Tanvari | Assistant Director, Planning UP&SP, P&D Dept. GOS, Karachi |
| 13. | Mr. Alan Kelly | Principal Economist (Asian Development Bank) |
| 14. | Ms. Nargiza Talipova | Urban Development Specialist (Asian Development Bank) |
| 15. | Mr. Mian Shoukat Rafiqi | Asian Development Bank |
| 16. | Mr. Haji Anwar Ali Shaikh | President, Larkana Chamber of Commerce & Industry |
| 17. | Mr. Hafiz M. Suleman Shaikh | Ex. President, Larkana Chamber of Commerce & Industry |
| 18. | Secretary, LCCI | Secretary, Larkana Chamber of Commerce & Industry |
| 19. | Deputy Director ENV | Assistant Director, Excise & Taxation Dept., Larkana |
| 20. | Dr. Khaliluallah Shaikh | District Health Officer, Larkana |
| 21. | Mr. Gull Bahar Mangi | Deputy District Officer Education Department |
| 22. | Mr. Abdul Wahab Shaikh | XEN, Public Health Engineering Dept., Larkana |
| 23. | Mr. Yar Muhammad Jamro | AEN, Public Health Engineering Dept., Larkana |
| 24. | Mr. Sushal Kamar | XEN. Highways, Larkana |
| 25. | Mr. Khalil Shaikh | XEN. Education Works, Larkana |



26.	Mr. Shukat Ali Shaikh	XEN. Buildings, Larkana
27.	Mohammad Ali Shaikh	Manager Capital Work, NSUSC, Sukkur
28.	Mr. Uzair Ahmed Abbasi	Jr. Engr. NSUSC (North Sindh Urban Services Corporation)
29.	Mr. Uzair Ahmed Abbasi	Jr. Engr. NSUSC (North Sindh Urban Services Corporation)
30.	Mr. Abdul Rasheed Qureshi	NSUSC (North Sindh Urban Services Corporation)
31.	Mr. Abid Hussain Mahar	LSUA, SCIP, Larkana
32.	Mr Masood Jfari	HOD- Urban Planning, EA Consulting, Pvt. Ltd.
33.	Mr. Naveed Agro	Senior Urban Planner , EA EA Consulting, Pvt. Ltd.
34.	Mr. Masood Qadir Shar	Junior Urban Planner, EA EA Consulting, Pvt. Ltd.

The meeting was started with the recitation from HOLY QURAN. Following were the deliberations and decisions of the meeting:-

1. The Consultant, EA Consulting (Pvt.) Ltd. made a comprehensive presentation on Larkana Urban Growth Strategy-2033 to the Stakeholders in Larkana comprising district administration, private sector represented by Larkana Chamber of Commerce and Industry, official of line departments, officials of UP&SP and representatives of Asian Development Bank discussed at length. The Consultants, EA Consulting briefly explained; existing situation, major socio-economic issues faced by various urban sectors of the city and presented strategies for future development. The major proposals for the urban development of Larkana presented by the Consultants included:

- The agricultural economy of the city to be strengthened.
- Agricultural potential in Rice, Oilseed and Guava to be fully exploited.
- Agro based industries and allied industries to be facilitated.
- Additional small industries areas to be developed adjacent to the exiting one.
- Accelerate the development of 500 Acres Industrial Estate.
- Exploit full tourism potential of MJD ruins and develop facilities (hotels, restaurants, conference centre, parks souvenir shops etc.).
- New schools to be added to meet the requirements up to 2033.
- Health facilities are generously provided operational efficiency needs to be improved.
- Road network has additional capacity; traffic management needs to be improved.
- Old city areas are over congested. Long term measure for decongested to be taken.
- Building control to be exercised more efficiently specially in parts of UC-8 and UC-5.
- No reconstruction with large foot print and / or height to be allowed in UC-8
- Developed land for more than 3000 housing units is available in different public/private schemes, measures should be taken to expedite construction on them.

- Additional housing schemes for different income groups should be initiated on vacant land in UC-1, UC-2 and UC-11.
- To discourage growth of Katchi Abadies, land for incremental housing may be provided in UC-2 close to industrial area.
- The hawkers encroaching main roads should be removed to alternative locations.
- Traffic circulation on some inner city roads may be convert to unidirectional.
- The Qingqi traffic may be regulated, urban bus transport system may be revived on major roads.
- The railway line has strategic alignment through the city. It may be utilized for urban rail transport.
- Safe water supply scheme may be revived to supply treated and safe water to Larkana in phases.
- The existing sewerage system with sewage treatment may be extended to the whole town in phases.
- Solid waste management may be outsourced to a private organization.
- NSUSC should be made independent in terms of funding and manpower so as not be dependent on TMA.
- Airport road is gaining importance for urban development it should be planned for urban development, with a special institutional arrangement.
- The VIP road with large open areas may be redeveloped as urban renewal and a new town centre may be developed in medium to long term.

Decisions

I. Comments of Mr. Assaduallh Abro (DC Qambar-Shahdadt, Qambar Officiating for DC Larkana.

Mr. Assaduallh Abro appreciated the efforts of the Consultants for preparing such inclusive report based on comprehensive knowledge base. He presented his valuable thoughts on various deficiencies of present governance / administration of greater Larkana by adding up the remarks:

- a) That, to drive the future urban growth of Larkana city in sustainable way, it is mandatory that development control and progress process should involve active participation of all stakeholders / peers to perform governance operations of city. While responding to present governance failure issue, he remarked that present institutional setup of district and taulka administration lacks qualified and skilled staff. He emphasized that it can only be achieved by placing "Right Person on Right Place".
- b) That, for effective planning process a new population census must be carried out before setting new planning goals for future population. He further informed that in 1998 census the rural population of Larkana were 3 persons per house which now has been significantly increased up to 8-9 persons per house hold. He informed that this new influx of pollution has generated tremendous pressure on demand of utility services and this is the only reason the present



urban and rural areas of Larkana city have been converted into dense Katchi-Abadies in last ten years, which has created many challenges for local governance authorities.

- c) He emphasized that successful delivery of new basic utility services in these Katchi-Abadies and peri-urban areas could only be delivered through combined teamwork efforts of multiple governance agencies of city. He rephrased that 'good managers placed on right place' could help to achieve this goal.
- d) While appreciating the proposal for urban development of Airport Road (N155 Highway) prepared by Consultants, he suggested that attention should also be paid on proposing new developments along "New Circular Road" expected to be built in near future.
- e) He emphasized that, the issue of security must be considered seriously while developing the new small industry site area, proposed in North-West quarter of the City.
- f) He appreciated the proposal of 'Airport Road' corridor for multiple activity purpose in future, and informed that an area of approximately 160 acres within the vicinity of Airport is available for industrial development.
- g) **Operation Cost Issue**
Mr. Assaduallh Abro emphasize on need of active community participation in overall planning process. He also urged hiring of new and qualified staff for LDA and TMA Larkana. He informed that present human resource strength of these organizations is same as of 1976, whereas city and its population have tremendously grown in last few years. Local governance agencies have limited financial resource to operate utility services operations of the city.
- h) **Drainage Issue**
While discussing the drainage problem of Larkana City, Mr. Abro emphasized on the fact that the cleaning is a chronic issue which requires immediate action. He also informed that the issue of maintenance of disposal stations is also an important, which should be addressed by TMA and NSUSC with join efforts. He recommended that TMA along with coordination of NSUSC must appoint new professionally qualified operation managers, who should take responsibility of monitoring waste disposal operations of city. Of importance is issue of waste water (sewage) disposal into Rice Canal.
- i) **Encroachment Issue**
While discussing the issue of encroachments at inner city and all major corridors of city, Mr Abro informed that in past several attempts have been made to remove such illegal occupation of road space occupied by road side commercial activities. He further informed that scheme of 'Push Carts' had been proposed for temporary removal of road side hawkers business. He proposed that a new business area promising adequate space for such activities should be allocated to relocate this type of business.
- j) **Future Development of Housing Sector by Deputy Commissioner**
Mr Abro informed that in past several attempts have been made to improve the deteriorating condition of housing stocks within city. He realized that the housing stocks built in last few years lack adequate utility services. He again emphasize that district administration should closely monitor the development process related with housing industry.

Concluding Remarks by Deputy Commissioner

- a) TMA and NUSUSC should establish strong coordination links to operate and manage drainage functions of Larkana. TMA should also develop an alternative plan regarding their participation in process. Similarly, NSUSC should focus on developing ties with TMA on operational issues.



- b) Majority of government sector officers are not well familiar with their job descriptions. There should be same capacity building of initiations.
- c) Larkana's present governance authority is performing transparent governance operations regardless of any political influence and monopolistic control of powers.
- d) Present administration has failed in achieving good service delivery targets.
- e) Future development strategy should also concentrate on new development along 'Circular Road', 'Larkana - Wagan Road' and 'Ratodero - Gwadar Corridor'.
- f) The land located in hinterlands of city is largely owned by private owners, and in absence of any solid possession rights, it is very difficult for LDA to control sprawl type development that occurred at city's periphery in last few years. However; LDA also lacks availability of skilled technical staff to perform good governance operations.
- g) The old Vegetable Market (Sabzi-Mandi) area should be relocated to new site allocated in northern quarter of the city. He informed that the existing governance staff of sabzi-mandi administration has not been paid salaries since last six months and their salaries must be revised.
- h) The existing bus terminal site of Larkana city governed by district administration, also lacks provision of proper facilities.
- i) Proposal to operate public transport through 'Suzuki's' had been proposed in past, but nothing has been done yet to implement this proposal. Rickshaw is the only public transport mode available to low income commuters of the city which has been run by private operators and it is rickshaws that cause traffic congestion inside dense areas of city. The local administration should adopt measures to control rickshaw movement inside city and rickshaw stands should be relocated to appropriate areas to avoid traffic congestion. However; newly developed rickshaw stands could be used to provide access to rural area along with adequate security measures.

II. Comments of Dr.Saeed Ahmed Magnejo (Commissioner Larkana Division)

The Commissioner Larkana *Dr.Saeed Ahmed Magnejo* emphasized that the city of Larkana should adopt new pathways to achieve planned and sustainable growth. He realized that the present service delivery system lacks delivery of utility services to citizens of Larkana city and main reason of this is poor governance of multiple governance authorities. He informed that NSUSC is completely failed to operate drainage and sewerage related operations of the city and as a result city's present drainage system has collapsed. He informed that in this regard a Master Drainage Plan has been approved by the provincial government of Sindh. Whilst discussing the solid waste management system Mr. Magnejo informed that the TMA Larkana has human resource of 250 sweepers which is insufficient to operate cleaning functions of city. He further informed that a new management under the governance of NSUSC is recently been hired to improve waste management performance of TMA. He recommended that NSUSC must enhance its manpower for effective delivery of system.

a) Traffic Management Issue

The Commissioner discussed the traffic issues of the city. He observed that issue of traffic regulation is also chronic to Larkana city and recommended new open spaces for on-street and off-street charged parking system for private vehicles, may be suggested.

b) Health Sector

Whilst discussing operational efficiency and the service delivery of health sector Larkana City. The Commissioners recommended that existing public sector health units of the city should be specially some departments of the Civil Hospital out sourced to private sector for effective management and improved delivery of services.

c) **New Railway Service Proposal**

The Commissioner appreciated the proposal of using grossly underused railway track for railway shuttle service from new bus stand to Defence Colony City. However, he feared that the advent of this new system may cause employment to existing local private transport operators, particularly rickshaw drivers. The Consultants explained that there will be numerous lateral road connections for the private sector to ply their transport.

III. Comments of Dr. Khaliluallah Shaikh (District Health Officer, Larkana)

- a) *Dr. Khaliluallah Sheikh* agreed with the Consultants that while tertiary health service is well provided, the primary level health services is wanting, he recommended that Larkana should establish 3-4 new basic health units in outskirts of UC councils to support rural population. He recommended that the resources of health units must be decentralized for effective delivery of health utilities. He emphasized that the timely completion of health sector development projects will boost the performance of existing health system.

IV. Comments of Mr. Gull Bahar Mangi (Deputy District Officer Education Department)

- a) *Mr. Gull Bahar* pointed out that the distorted distribution of schools is due to government policy to build schools only free land is provided. The Commissioner suggested this policy should be changed and cost of land should be included in schemes.
- b) *Mr. Mangi* also recommended a complete land survey of entire city.

V. Comments of Mr. Abdul Wahab Shaikh XEN, PHED-Larkana

- a) *Mr. Abdul Wahab* proposed that the new high density building in Larkana should be planned near sweet water resources. *Mr. Wahab* informed that City's Western and Southern areas lacks availability of sweet water sources and level of water-table is quite low in this area of city. He recommended that land chosen for new housing sector development must be accommodated with segregated provisions of water supply and drainage facilities. He further recommended that the site selection criteria must be done considering ideal contour position that support easy flow of drainage water.

VI. Comments of Mr. Mohammad Ali Sheikh (Manager Capital Work, NSUSC, Sukkur)

- a) *Mr. Sheikh* recommended installation of new drainage system at drainage zone 4 of Larkana City.

The meeting was ended with a vote of thanks to and from the chair.

Asian Development Bank

The ADB observed that they witnessed very interesting discussion that highlighted issues of urban governance, which could improve also, when establish, who is the owner of the city. We need to balance between strategies of consolidations and expansions. The plan should not be wish list but point towards sustainable development programme, where there are ample incentives for private sector investment.



URBAN DEVELOPMENT STRATEGY FOR LARKANA

PRESENTATIONS AND WORKSHOPS WITH STAKEHOLDERS OF LARKANA

2nd CONSULTATIVE WORKSHOP ON URBAN DEVELOPMENT STRATEGY LARKANA

Record of Discussion

Venue: Circuit House, Larkana, Sindh

Date: Tuesday, June 10, 2014

OBSERVATIONS and COMMENTS

1. Rice research institute needs to be rehabilitated
2. Police line needs to be shifted to the outskirts of the city at Jail road and existing police line should be converted into a Central Park as Larkana does not have any central park.
3. There was a proposal from many stakeholders to have Agriculture Block and Subzi Mandi, Cattle colony, Cold Storage should be relocated in that Agriculture Block and the existing area of Subzi Mandi, Cattle Colony etc. Should be converted into open space or recreational park.
4. There is a dire need to introduce Social Development Programs to raise the civic sense
5. It was proposed that there should be an Information Technology Park within the city so youngsters could get hands on the latest tools of Information Technology and communication Technology could be empowered.
6. There should be clear strategy for rehabilitation and regeneration of Moen jo Daro.
7. There should be plan of the beautification of the entrances of Larkana City.
8. There is no any proposed rehabilitation plan of the Graveyards of Larkana.



9. The Role of development agencies like TMA, SMC and NUSCS should be clearly defined also the overlapping of the development agencies should be highlighted in each development sector of the strategy.
10. Proposal for Larkana Circular road should be furnished in the report.
11. The 70% of the Street Lights are not working, there should be complete data given of the functional street lights (includes Solar Energy Lights) and the proposal of lighting the main corridors and entrances of the city should be given in the report.
12. The number of proposed public toilets and their location should be mentioned in the report according to short and long term framework.
13. There should be a proposal for the peripheries development of the city as migration putting the pressure on Agriculture land at peripheries of the Larkana City.



URBAN DEVELOPMENT STRATEGY FOR LARKANA

MEETING WITH STAKEHOLDERS OF LARKANA CITY

Record of Discussion

Venue: Circuit House, Larkana, Sindh

Date: Wednesday, June 18, 2014

Participants:

- | | |
|-------------------------------------|--|
| 1. Ghanwar Ali Leghari | Deputy Commissioner, Qambar- Shahdadkot, Qambar |
| 2. Masood Bhutto | Assistant Commissioner Larkana |
| 3. Zakir Gopang | Asst: Director Development D.C Office |
| 4. Dr. Abdul Rehman Baloch | FSMO-Planning & Development Health Larkana |
| 5. Abdul Fattah Bughio | D.H.O Larkana |
| 6. Saifullah Abbas | MS Civil Hospital |
| 7. Tariq Hussain Qazi | Addit: Director P&D Civil Hospital |
| 8. Abdul Hafeez Shaikh | Sub engineer P&D Civil Hospital Larkana |
| 9. Ghulam Hussain Shaikh | Deputy Director A.E |
| 10. Shah Nawaz | Assit: Director A.E |
| 11. Riaz Ahmed Soomro | Assit: Director A.E |
| 12. Khalil-ur-Rehman | Zonal Manager SSGC Larkana |
| 13. Haji Abdul Majeed Shaikh | Chairman Sindh Hari Abadgar Board |
| 14. Qurban Ali Abro | Assit: Engineer LMC |
| 15. Asad Ullah Leghari | AEN Highways Larkana |
| 16. Deedar Ali Leghari | Provincial Highways Larkana |
| 17. Wahab Sahibto | Public Health Engineer |
| 18. Hameed Abbasi | NSUSC |
| 19. Shams Awan | XEN Buildings Larkana |
| 20. Mr Masood Jfari | HOD- Urban Planning, EA Consulting, Pvt. Ltd. |
| 21. Mr. Naveed Agro | Senior Urban Planner , EA EA Consulting, Pvt. Ltd. |
| 22. Mr. Masood Qadir Shar | Urban Planner, EA EA Consulting, Pvt. Ltd. |

The meeting was started with the recitation from HOLY QURAN. Following were the



deliberations and decisions of the meeting:-

The Dc Larkana invited the consultants to made a special presentation to him along with his staff in including additional Dc, AC Larkana and assistant Dy. Developments. After the detailed discussion with Dc, the following was instructed by Dc:

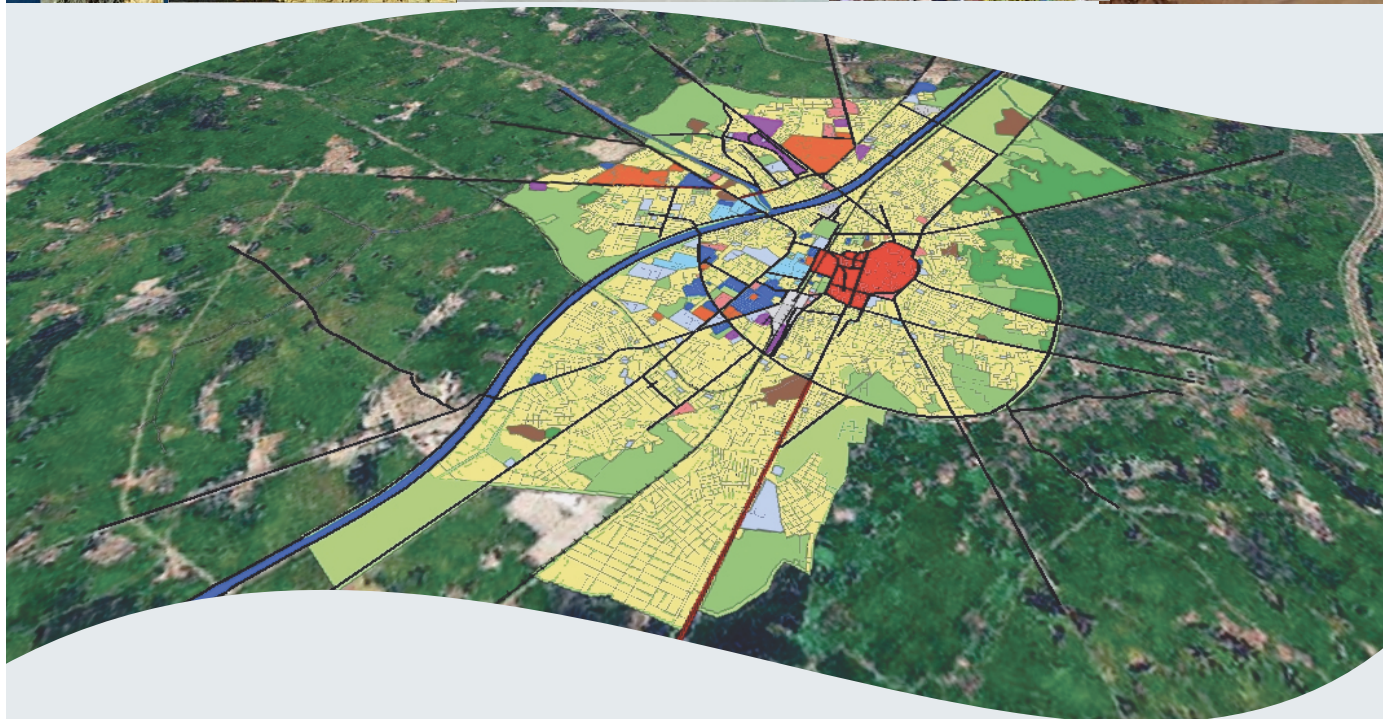
1. Some areas outside the municipal boundaries should be included in the plan.
2. The outer ring road should be completed.
3. The urban renewal of SP Chowk/ VIP road should be re-considered keeping in view the heritage Value of the Dc house. The area may be redeveloped as a cultural complex.
4. The consultant's proposal for airport road was appreciated.
5. Encroachments on major roads can be removed.
6. The beautification of roads is necessary.
7. The need of Street lights, fire fighting vehicles, garbage removal vehicles and their maintenance should be priority.
8. Review of drainage plans and recommendations of consultant's team regarding drainage problems and their solution.
9. Exploit and subsidize the agricultural products.
10. Promote the agro products including Tomato, Rice and Guava.
11. Need of Cold storage for Guava and Tomato, and ware house for Rice.
12. Promote the Agro based industries.
13. Safe water supply scheme may be revived to supply treated and safe water to Larkana in phases.
14. The existing sewerage system with sewage treatment may be extended to the whole town in phases.
15. Solid waste management may be outsourced to a private organization.



“URBAN DEVELOPMENT STRATEGY FOR LARKANA” (2013 - 2033)

WITH ADDENDUM-2018

ADB Loan No. 2499-PAK



FINAL REPORT

January, 2019

Volume- II

PART - IV Disaster Risk Management Plan

PART - V Implementation Strategy & Priority Projects



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“URBAN DEVELOPMENT STRATEGY FOR LARKANA”

2013-2033

ADB Loan No.2499-PAK

VOLUME-II

PART-IV Disaster Risk Management Plan

PART-V Implementation Strategy & Priority Projects



EA Consulting Pvt Ltd

(Formerly Engineering Associates)

Engineering, Architecture & Project Management

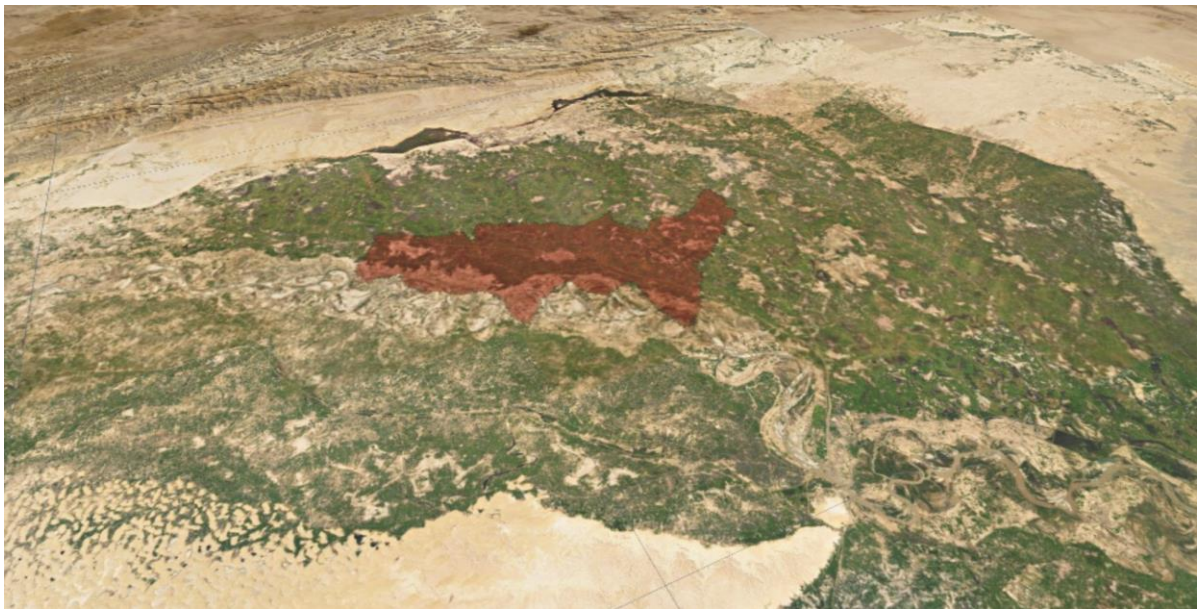
TABLE OF CONTENTS

PART-IV	5
DISASTER RISK MANAGEMENT PLAN	5
1. BASIC TERMS AND CONCEPTS OF DISASTER RISK MANAGEMENT	6
2. PLAN'S VISION, MISSION AND OBJECTIVES	10
2.1 Plan Area	10
2.2 Planning Authority	10
2.3 Purpose	10
2.4 Vision	10
2.5 Mission	11
2.6 Objectives	11
2.7 Strategic Objectives	11
2.8 Priorities	12
3. CHALLENGES AND OPPORTUNITIES FOR DISASTER RISK MANAGEMENT	20
3.1 Challenges	20
3.2 Opportunities	20
4. LOCAL COMMUNITIES AND RISK REDUCTION	21
4.1 Training, Education and Awareness	21
4.1.1 Purpose	21
4.1.2 Advantages	22
4.2 Implementation	22
4.2.1 Priority Strategies	22
4.2.2 Funding Mechanisms	23
4.3 Organizing the Drills	24
4.3.1 Simulations and Drills	24
4.3.2 Schedule of Organizing Drills	24
4.3.3 Resources for Organizing the Drills	24
5. STRUCTURE, ROLE AND RESPONSIBILITY OF DISTRICT DISASTER MANAGEMENT AUTHORITY LARKANA	25
5.1 District Disaster Management Authority – Role and Responsibilities (DDMA)	25
5.2 District Disaster Management Authority (DDMA) – Larkana	26
5.3 Present Composition of DDMA Larkana	26
5.4 Sub Committees	26
5.5 DDMA Composition may change after the Local Bodies' Election, Government of Sindh 2014.	28
5.6 Key Responsibilities of DDMA	29
5.7 Additional Powers of District DRM Authority	30
5.8 Priority Areas for DDMA	30
5.9 DRM at Community or Local level	31
5.10 Role of Taluka and Town Authorities	31
5.11 Role of Union Councils	31
5.12 Community Based Organizations (CBO's)	31
5.13 List of all Key stakeholders needed to be involved in DRM process	32

6.	MECHANISM OF WARNINGS.....	41
6.1	Coordination with Existing Government Departments	41
6.2	Guidelines for Operation Procedures	43
6.3	Public Information	44
6.4	Reporting.....	44
6.5	Requests for Assistance.....	44
6.6	Plan Dissemination.....	44
6.7	Community Involvement and Participation	44
7.	RECOVERY STRATEGY	45
7.1	Functions of Recovery	45
7.2	Activation.....	45
7.3	Immediate Short term recovery.....	45
7.4	Transition from Immediate Short Term to Medium/ Long Term Recovery.....	46
7.5	Medium/Long Term Recovery	46
7.6	District Recovery Group	46
7.7	District Actions/Resources.....	47
7.8	Transition to Normal Business	47
7.9	Supporting District Recovery Plans	47
8.	SUMMARY	48
8.1	Problem Identification.....	48
8.2	Recommendations	48
9.	DISTRICT CAPABILITY TO COPE WITH DISASTERS - STATISTICS	50
	IMPLEMENTATION STRATEGY AND PRIORITY PROJECTS	58
	PART-V	58
10.	PROJECT DESCRIPTION AND BACKGROUND	61
10.1	Overview	61
10.2	Summary of Main Features of Development Strategy	61
10.3	The Project Area	62
11.	POTENTIAL URBAN DEVELOPMENT CHALLENGES AND RISKS	63
12.	URBAN DEVELOPMENT STRATEGY LARKANA.....	65
12.1	Development Vision.....	65
12.2	Objectives.....	65
12.3	Target Areas	67
12.4	Land Acquisition for Development.....	67
12.5	Institutional framework	67
12.6	Efforts to be taken by Project Proponents	70
12.7	Development Planning	70
13.	IMPLEMENTATION STRATEGY.....	71
13.1	Process of Implementation	71
13.2	Implementation Agency	71
13.3	Legal Frameworks.....	72
13.4	Institutional Enhancement.....	73

14.	IMPLEMENTATION SCHEDULE.....	75
15.	SHORT TERM ACTION PLAN (2013-2018).....	88
15.1	Transportation	88
15.2	Water Supply.....	89
15.3	Sewerage and Drainage.....	90
15.4	Solid Waste Disposal	90
15.5	Fire Brigade Station	91
16.	PRIORITY PROJECTS.....	92
16.1	List of Proposed Priority Projects - Short Term Development Proposals	92
16.2	List of ADP Projects - Short Term Development Proposals	96
17.	MONITORING AND EVALUATION	108
17.1	Internal Monitoring	108
17.2	External Monitoring	108
17.3	Third Party Monitoring	108
17.4	Evaluation	108
18.	COSTING AND BUDGETING	109
18.1	Development Financing and Budget Flows	109
18.2	Evaluation of Total Cost of Development.....	109

PART-IV



DISASTER RISK MANAGEMENT PLAN

DISASTER RISK MANAGEMENT PLAN LARKANA

1. BASIC TERMS AND CONCEPTS OF DISASTER RISK MANAGEMENT 1

These terms and concepts have been adapted from the United Nations '*International Strategy for Disaster*' (UNISDR) list of terms and concepts.

- **Acceptable risk:**
The level of loss a society or community considers it can live with and for which it does not need to invest in mitigation.
- **Capacity:**
A combination of all the strengths and resources available within a community, society or organization can reduce the level of risk, or the effects of a disaster. Capacity may include physical, institutional, social or economic means as well as skilled personal or collective attributes such as leadership and management. Capacity may also be described as capability.
- **Capacity building:**
Efforts aimed to develop human skills or societal infrastructure within a community or organization needed to reduce the level of risk. In extended understanding, capacity building also includes development of institutional, financial, political and other resources, at different levels of the society.
- **Climate change:**
The climate of a place or region is changed if over an extended period (typically decades or longer) there is a statistically significant change in measurements of either the mean state or variability of the climate for that region.
- **Coping capacity:**
The means by which people or organizations use available resources and abilities to face a disaster. In general, this involves managing resources, both in normal times as well as during crises or adverse conditions.
- **Disaster:**
A serious disruption of the functioning of a community or society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources. It results from the combination of hazards, conditions of vulnerability and insufficient capacity to reduce the potential negative consequences of risk.

¹ Source: United Nations International Strategy for Disaster Reduction (UNISDR)

- **Disaster risk management:**
The comprehensive approach to reduce the adverse impacts of a disaster encompasses all actions taken before, during, and after the disasters. It includes activities on mitigation, preparedness, emergency response, recovery, rehabilitation, and reconstruction.
- **Disaster risk reduction (disaster reduction):**
The measures aimed to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development.
- **Early warning:**
The provision of timely and effective information through identified institutions, to communities and individuals so that they could take action to reduce their risk and prepare for effective response.
- **Emergency management:**
The management and deployment of resources for dealing with all aspects of emergencies, particularly in the preparedness, response and rehabilitation.
- **Forecast:**
Estimate of the occurrence of a future event (UNESCO, WMO). This term is used with different meanings in different disciplines.
- **Hazard:**
A potentially damaging physical event or phenomenon that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Hazards can include natural (geological, hydro- meteorological and biological) or induced by human processes (environmental degradation and technological hazards). Hazards can be single, sequential or combined in their origin and effects. Each hazard is characterized by its location, intensity, frequency and probability.
- **Hazard analysis:**
Identification, studies and monitoring of any hazard to determine its potential, origin, characteristics and behavior.
- **Land-Use planning:**
Branch of physical and socio-economic planning that determines the means and assesses the values or limitations of various options in which land is to be utilized, with the corresponding effects on different segments of the population or interests of a community taken into account in resulting decisions. Land-use planning can help to mitigate disasters and reduce risks by discouraging high-density settlements and construction of key installations in hazard-prone areas, control of population density and expansion.

- **Mitigation:**
Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.
- **Natural hazards:**
Natural processes or phenomena occurring on the earth that may constitute a damaging event. Natural hazards can be classified by origin namely: geological, hydro meteorological or biological. Hazardous events can vary in magnitude or intensity, frequency, duration, area of extent, speed of onset, spatial dispersion and temporal spacing.
- **Preparedness:**
Activities and measures taken in advance to ensure effective response to the impact of hazards, including the issuance of timely and effective early warnings and the temporary evacuation of people and property from threatened locations.
- **Prevention:**
The processes of informing the general population, increasing levels of consciousness about risks and how people can reduce their exposure to hazards. This is particularly important for public officials in fulfilling their responsibilities to save lives and property in the event of a disaster.
- **Public awareness:**
The processes of informing the general population, increasing levels of consciousness about risks and how people can reduce their exposure to hazards. This is particularly important for public officials in fulfilling their responsibilities to save lives and property in the event of a disaster.
- **Recovery:**
Decisions and actions taken after a disaster with a view to restoring or improving the pre-disaster living conditions of the stricken community, while encouraging and facilitating necessary adjustments to reduce disaster risk.
- **Relief / response:**
The provision of assistance during or immediately after a disaster to meet the life preservation and basic subsistence needs of those people affected. It can be of an immediate, short-term, or protracted duration.
- **Resilience / resilient:**
The capacity of a community, society or organization potentially exposed to hazards to adapt, by resisting or changing in order to maintain an acceptable level of functioning. Resilience can be increased by learning from past disasters for better future protection and to improve risk reduction measures.

- **Retrofitting (or upgrading):**
Reinforcement of existing buildings and structures to become more resistant and resilient to the forces of natural hazards.
- **Risk:**
The chances of losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between hazards and vulnerable social conditions. Risk is expressed as $\text{Risk} = \text{Hazards} \times \text{Vulnerability}$. Some experts also include the concept of exposure to refer to the physical aspects of vulnerability.
- **Risk assessment/analysis:**
A methodology to determine the nature and extent of risk by analyzing potential hazards and evaluating existing vulnerability that could pose a potential threat to people, property, livelihoods and the environment.
- **Structural / non-structural measures:**
Structural measures refer to any physical construction to reduce or avoid possible impacts of hazards, which include engineering measures and construction of hazard-resistant and protective structures and infrastructure. Non-structural measures refer to policies, awareness, knowledge development, public commitment, and methods and operating practices, including participatory mechanisms and the provision of information, which can reduce risk and related impacts.
- **Sustainable development:**
Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of "needs", in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and the future needs. (Brundtland Commission - 1987).
- **Vulnerability:**
The conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards.
- **Wild land fire:**
A wildfire is any uncontrolled fire in combustible vegetation that occurs in the countryside or a wilderness area.

2. PLAN'S VISION, MISSION AND OBJECTIVES

2.1 Plan Area

This plan has been prepared to facilitate Larkana District with opportunities that mitigate disaster risks through policy guidelines proposals. The area delimitation of this plan comprises all rural and urban settings laying inside four Talukas of Larkana District, i.e. Taluka Larkano, Taluka Dokri, Taluka Ratordero and Taulks Bakrani.

2.2 Planning Authority

Larkana's present *District Disaster Risk Management Authority* (DDMA) is headed by the Deputy Commissioner of Larkana District who is the ex-officio chairman of DDMA –Larkana.

Other important key members of DDMA Larkana include; Additional Deputy Commissioner –I, Revenue (Secretary), Superintendent of Police, Superintending Engineer (W&S), Executive Engineer Public Health Engineering, Executive Engineer Irrigation (Dadu Canal Division), Executive Engineer Irrigation (Rice Canal Division) and Executive Engineer Irrigation (Warah Canal Division).

- ***Approval of the Plan:***

The Office of Deputy Commissioner Larkana is approval authority for District Disaster Management Plan Larkana (DDRMPL).

- ***Amendments to the Plan:***

If and when required, the planning authority will propose the amendments to the District Disaster Management Plan Larkana -2013, while office of Deputy Commissioner Larkana has the authority to approve the amendments in the Plan.

- ***Review and Renew Plan:***

This plan will be reviewed / revised annually as required under the provisions of the *National Disaster Management Act of Pakistan* (2010). The office of Deputy Commissioner Larkana will make changes to plan if necessary.

2.3 Purpose

This plan details the arrangements within the Larkana District to strengthen the community's capacity to manage disasters through an all hazards approach.

2.4 Vision

This plan's vision aims to develop effective Disaster Risk Management (DRM) strategies that intend *'to achieve sustainable social, economic and environmental development in Larkana District by reducing risks and vulnerabilities, particularly for poor and marginalized groups and by effectively responding to disaster events by helping communities to recover from all types of disaster events.'*²

² 'National Disaster Risk Management Plan (NDRM)', prepared by National Disaster Management Authority Pakistan, Mar 2007, Courtesy UNDP Pakistan.

2.5 Mission

This plan's mission aims to scope pre /post disaster state of affairs by facilitating deprived families and their communities to meet their basic needs and to increase their ability to participate in post disaster community rehabilitation and to get benefit from local resources.

Larkana District Disaster Management Plan mission statement has been formulated in accordance with National Disaster Risk Management Plan (NDRM) framework of Pakistan government. The mission statement for this plan aims,

*'to manage complete spectrum of all types of disasters through a paradigm shift by moving towards response and relief oriented approaches and by adopting a disaster risk reduction perspective from local government level upward.'*³

2.6 Objectives

- To provide a smooth platform for policies/ procedures development, that will assure maximum and efficient utilization of all resources in District Larkana, to minimize loss of life or injury to the population in disaster situation
- To draw a comprehensive policy framework mechanism that aims to engage all stakeholders in Disaster Risk Reduction & Management (DRRM) process
- To contribute in the development of an efficient early warning and early response systems in order to warn hazard threats prior to disaster situation in Larkana
- To sustain dialogue, collaboration, coordination and exchange of information among stakeholders involved in early warning, disaster risk management response and redevelopment process, with an overall aim for fostering holistic approach towards sustainable development
- To provide updated knowledge to communities and public/private sector institutions for effective disaster risk management in order to reduce losses
- To provide information on disaster preparedness exercises, including evacuation drills, with a view to ensure rapid and effective disaster panic/damage recovery in disaster situation

2.7 Strategic Objectives

The vision and objectives presented above lead towards two main strategic objectives, paying attention to awareness against disasters on wider community level.

- Population grows up safely in resilient communities:
 - Involve local communities in building resilience and awareness of disaster risk
 - To provide DRM policy framework to local government agencies to uphold responsibilities for disaster risk reduction
 - Adopt measures to mitigate environment degradation risks around communities and their localities

³ Ibid

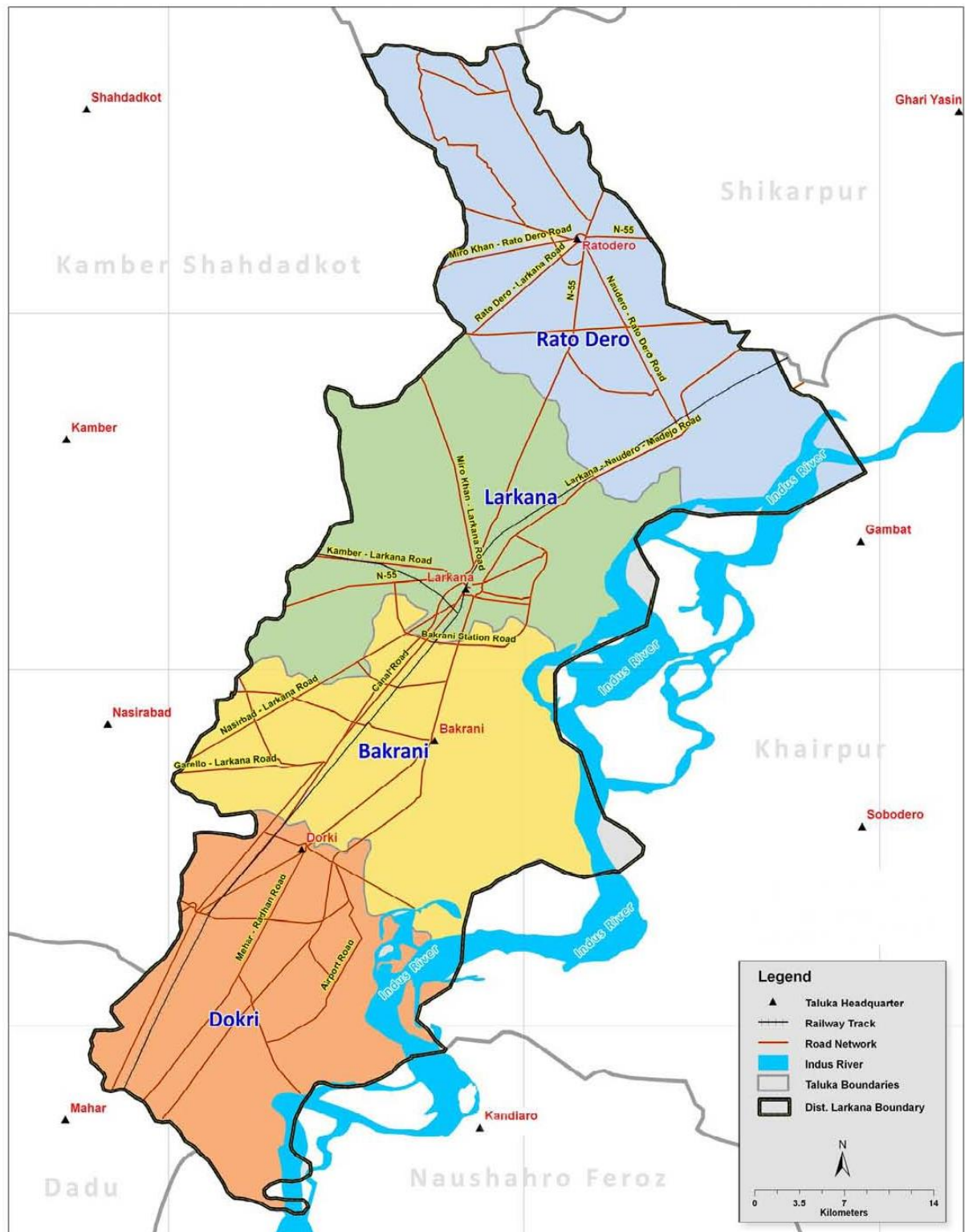
- To protect violation of human rights in emergency situation:
 - Protecting communities from violence, physical conflict or theft
 - Gain support from provincial/ national/international communities for recovery
 - To provide immediate and continuous assistance to disaster affected communities based on analysis of needs with an emphasis on shelter, health protection and education
 - To support communities to recover services, assets and livelihoods after disaster situation

2.8 Priorities

The priorities of District Disaster Management Plan Larkana are:

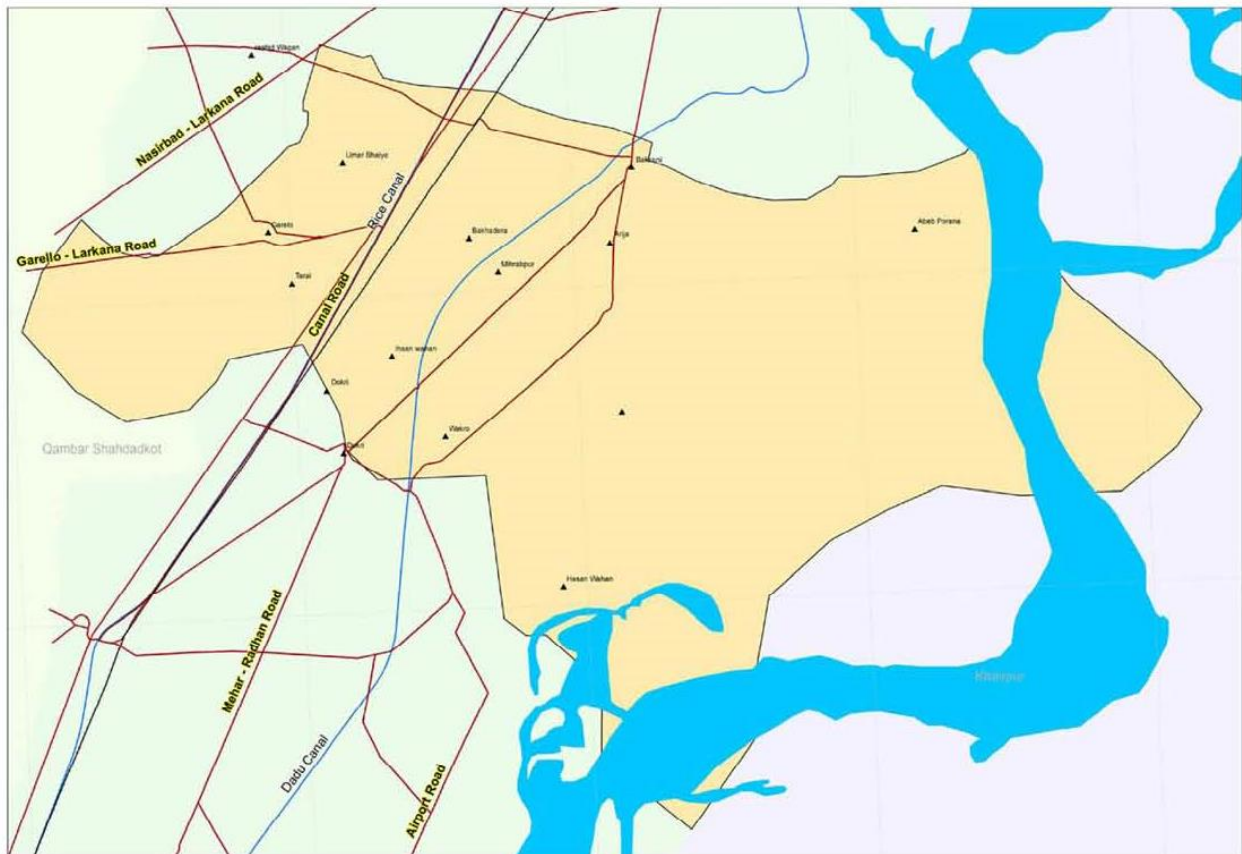
- To review and assess the past disaster events happened in Larkana district and to propose effective disaster management tools for mitigation, prevention, preparedness, response and recovery against disasters
- To establish robust coordination networks between local and district governments (all stakeholders)
- To ensure that community are fully aware from risk and damages caused by different types of disasters and know their opportunities of protection
- To provide a policy framework for the preparation of Recovery Strategy to DDMA Larkana.
- Identify coordination and allocation resources that can be utilized for disaster risk reduction in district
- To review disaster management arrangements (DMA's) for entire district

DISTRICT LARKANA MAP

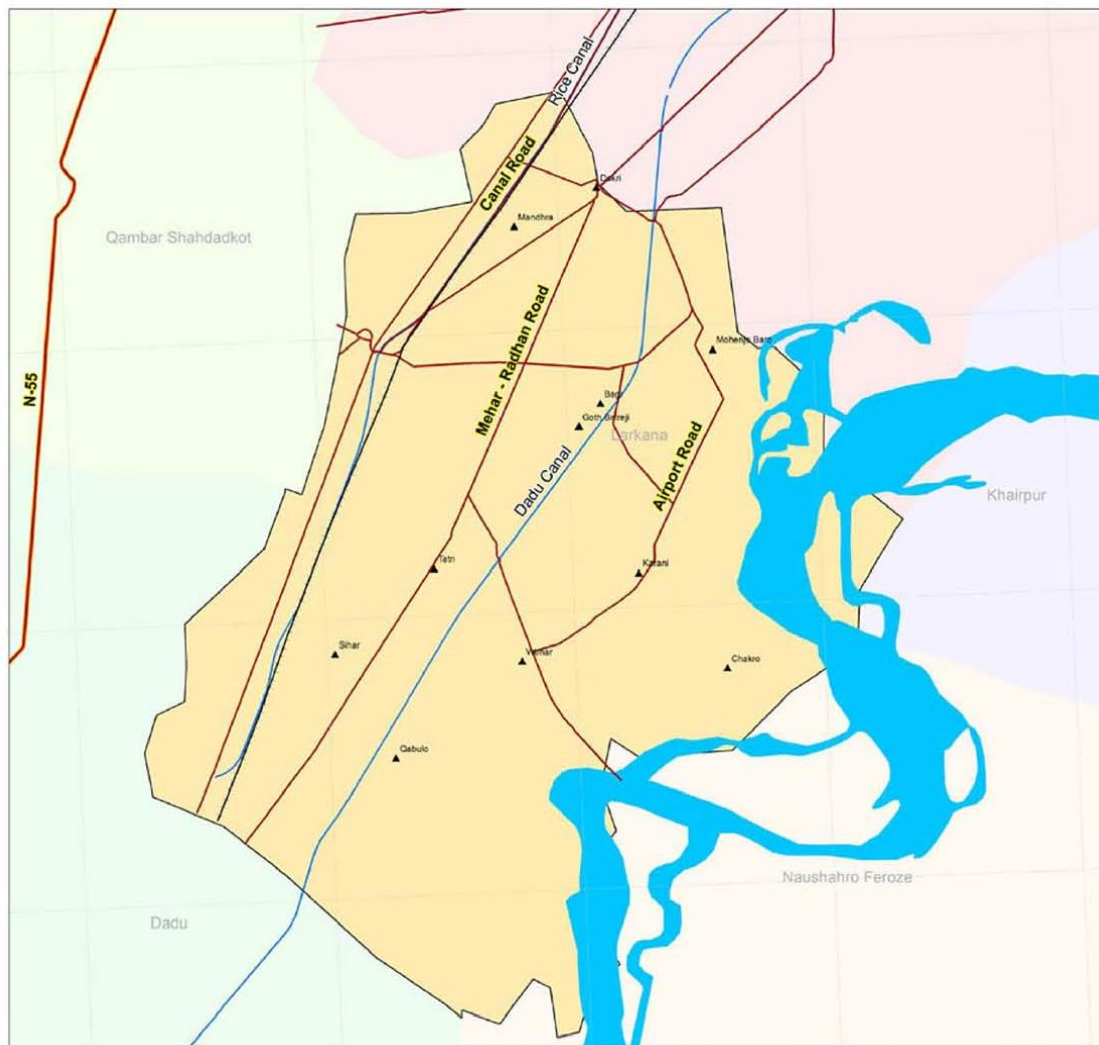


TAULKA MAPS OF LARKANA DISTRICT

TALUKA BAKRANI



TALUKA DOKRI



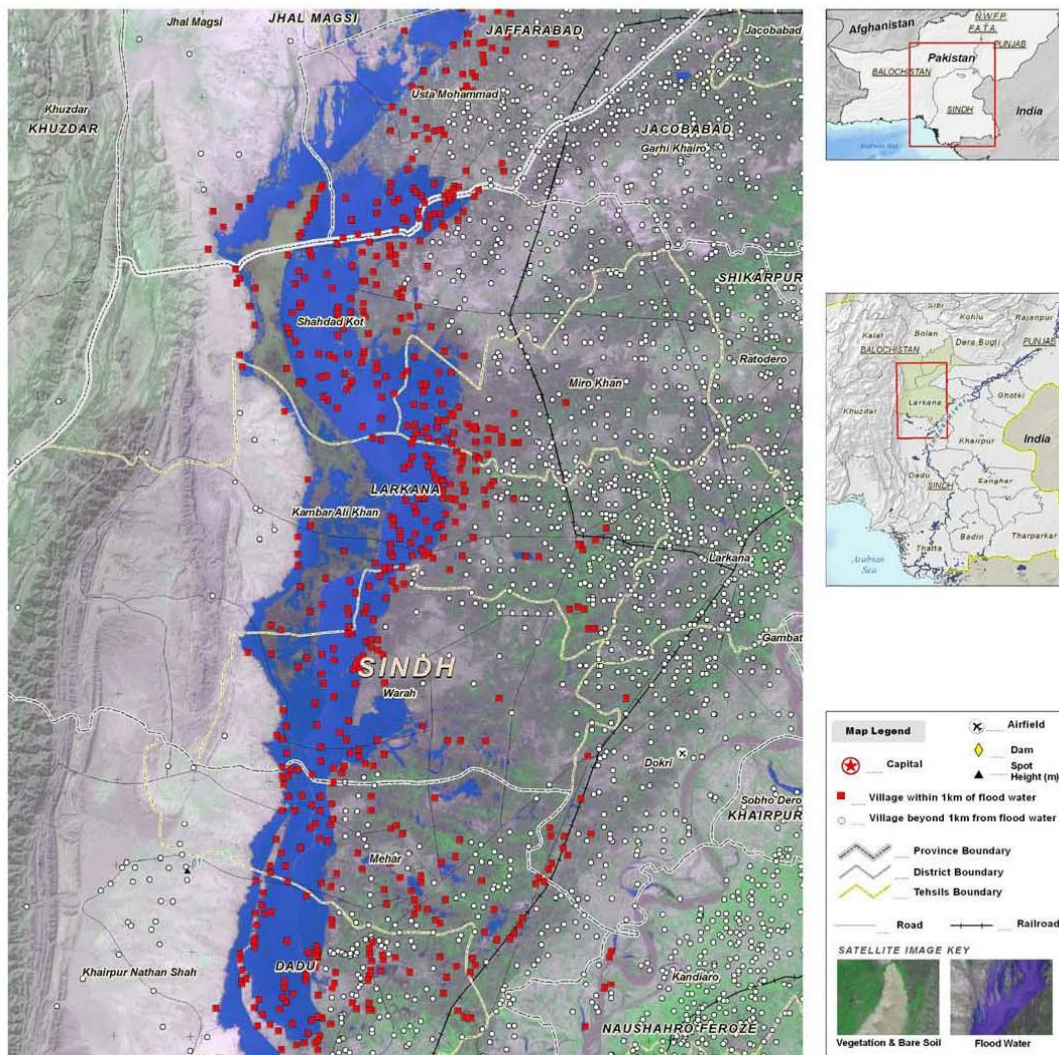
TALUKA LARKANA



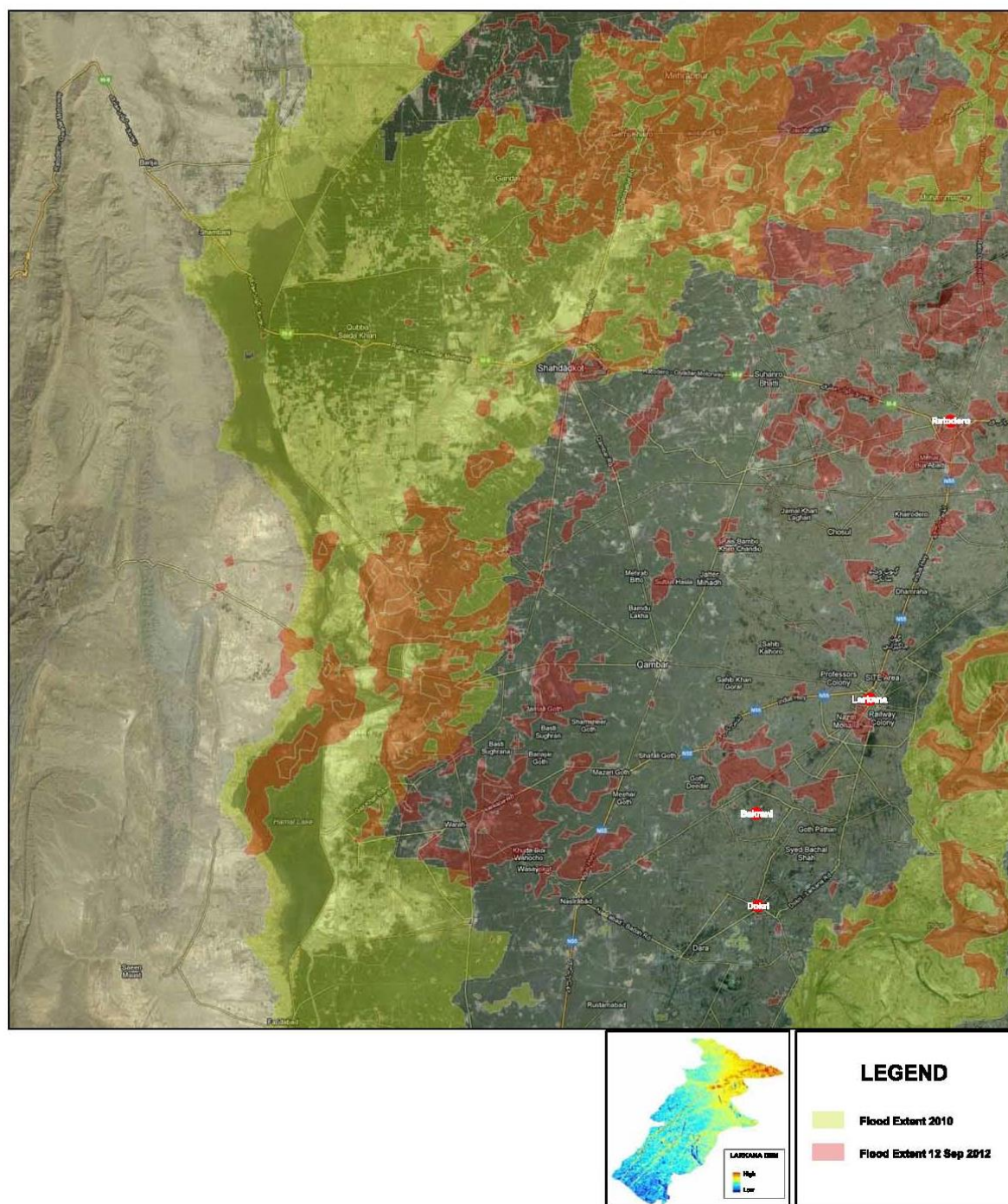
TALUKA RATO DERO



FLOOD EXTENT AND AFFECTED VILLAGES MAP OF LARKANA



LARKANA FLOOD HAZARD MAP



3. CHALLENGES AND OPPORTUNITIES FOR DISASTER RISK MANAGEMENT

The District Larkana faces following challenges relating with Disaster Risk Management:

3.1 Challenges

- Low level of disaster risk awareness among various stakeholders and general public
- Limited financial resources for DRM operations
- Poor logistic support for DRM operations
- Lack of strategic policy framework for the preservation of natural resources
- Lack of effective policy framework for emergency response and evacuation
- Lack of coordination between DRM stakeholders
- Lack of communication services between relief agencies
- Less participation of local communities in mitigation process
- Incapability of stakeholders to cope with disasters
- Incapability of emergency services to cope with disasters.
- Poor enforcement of disaster risk management laws & regulations
- Population influx, local migration from rural to urban areas
- Poorly planned land uses

3.2 Opportunities

There is variety of opportunities available that can be optimized to obtain effective disaster risk management, some have appeared as response to recent disaster events, other are preexisting potentials in form of institutional mechanisms.

- Constant incidence of disasters, particularly those affecting the district of Larkana in form of monsoon rains/floods in last five years have instigated the need of immediate remedial parameters to cope up with disasters inside the umbrella of DRM planning policy frameworks provided by NDMA for disaster risk mitigation.
- Disaster risk reduction management is now considered as compulsory component for local urban policy preparation in Sindh. The active participation from PDMC, PDMA and the formation of District Disaster Management Authorities' in almost all districts of Sindh has opened the door for enhanced financial opportunities to deal with any disaster situation expected to occur in future in regimented way.
- During last disaster situation, local NGO's have played vital role in providing relief to local communities. Incorporating NGO's with overall DRM process will produce more solid outcomes in future.
- Agriculture land near flood prone areas can be used for cultivating the crops that need more water.
- Temporary fish breeding ponds could be created to boost fisheries sector.

4. LOCAL COMMUNITIES AND RISK REDUCTION

Disaster risks can be minimized, if local communities are fully aware of disaster risks and adopt precautionary measures before devastation. A fully aware government and community's pre-disaster efforts can save human lives and minimize damages. Updating communities regarding severity of hazards that directly affects communities is perhaps one of the most significant hindrances in present day efforts to mitigate the potential effects of disasters.

The present district government of Larkana has arranged a very good governance setup to cope with monsoon rain based flood hazard that has been drastically affecting the livelihood of local communities situated near River Indus Basin. However the milestone of equipping local communities against disaster awareness and adopt precautionary measures seems unaccomplished yet. Thus, one of the priorities of this plan is to draw a short term disaster awareness proposal strategy that could embed various training sets of awareness, preparation and recovery for local communities.

Alongside local communities, DRM education and training should also be provided to all relevant personals directly or indirectly dealing with disaster risk reduction (DRR) process; e.g. civil servants, high rank government officials, staff of technical agencies, NGO's, media persons and politicians.

The DRM curricula must provide guidelines emphasizing on information about various disaster risks and vulnerabilities, skill development to cope disaster situation, vulnerability reduction, hazard mitigation and emergency response management. Trainings like search and rescue, first aid, fire fighting, evacuation, camp management and relief distribution are also crucial.

4.1 Training, Education and Awareness

4.1.1 Purpose

- Provide training and awareness courses to district, municipal and local authority personals dealing with management of hazard prone areas
- Develop public awareness materials (e.g. posters, brochures, booklets, videos).
- Update media about its role in disaster risk management process and how awareness through media can be broadcasted to local community

It will be the responsibility of Human Resources Development Department (HRDD) of DDMA to disperse awareness knowledge in priority areas and highlight training and skills required to equip stakeholders and local communities. The District DRM Coordination Officer should also design, implement and evaluate awareness campaigns, drills and skills training.

Training Needs Assessment (TNA) based on departmental roles should also be conducted to ensure that appropriate training is provided to each person or task unit. The HRDD will liaise and work with other technical agencies, NGOs and International organizations to support training of personal.

4.1.2 Advantages

One of the key advantages for implementing DRM strategies at local level is that of resources and energies at this level have more lasting impacts. Efficient local authorities, educational institutions, NGOs and community groups can play active role in this regard.

This Plan also encourages DDMA Larkana to support local governments at multiple administrative levels to implement priority strategy and also produce their own sub district recovery plans for their respective constituents.

These plans must highlight hazard prone areas, their vulnerability, availability of local resource to cope with disasters, strategies for risk reduction and responsibilities of various stakeholders involved in DRM process. Citizen Community Boards (CCBs) can also play important role in community preparedness and disaster mitigation.

DDMA's support to TMAs, UCs and village leaders should also focus on organizing trainings for communities, awareness-raising, masons training, volunteers training on search and rescue, first aid, evacuation, fire fighting etc. Based upon local risk assessment, small scale schemes for mitigation, strengthening of livelihood and local early warning systems can also be implemented.

4.2 Implementation⁴

4.2.1 Priority Strategies

As mentioned above, majority of catastrophic events hit Larkana District were monsoon rains based floods which largely affected a large area of agricultural lands and villages located inside it, left thousands of villagers displaced and shattered their properties from scratch.

The cost of renewal of these affected communities is too high and cannot be anticipated without comprehensive DRM planning appraisals. The present DDMA of Larkana which possesses limited technical staff and financial resources for the rehabilitation of such communities must:

- Engage all stakeholders of entire district in overall disaster rehabilitation process
- Recognize the commitment of stakeholders and the need for collaboration across all levels of government, community, industry, commerce, and government owned corporations, private and volunteer organizations and local communities within all aspects of disaster management
- Aligned job responsibilities of such key stakeholders with job descriptions mentioned in principal guidelines proposed in *Pakistan National Disaster Risk Management Act*

⁴ NDA, DRM Ordinance -2006, Ordinance No. LIII of 2007, Ministry of Law, Justice & Human Rights, Government of Pakistan.

2010, National Disaster Risk Management Guidelines and Disaster Risk Management Plan, Sindh.

- Ensure establishment of straight relationships, trust, teamwork, consultative decision-making and shared responsibilities among stakeholders.
- Develop disaster risk assessment system through statistical information, risk maps, emerging hazards information and their affects
- Adopt measures of sustainability of local communities by utilizing local resources available to avoid post disaster cataclysms (dearth, theft, spread of epidemic diseases, etc)
- Promote economic sustainability after disasters

4.2.2 Funding Mechanisms ⁵

For successful implementation of priority strategies in sustainable way, it is the responsibility of the district government authority or office of existing Deputy Commissioner Larkana to establish a separate ‘District Disaster Management Fund’.

The District Disaster Management Fund could be financed through following resources;

1. Grants made by Federal or Provisional Government of Pakistan
2. Loan, Aids and Donations from national and international agencies, and
3. Donations received from any other source

Besides there are plenty of supporting opportunities coming from sources like philanthropists and international organization, e.g. World Bank, Asian Development Bank, United Nations, etc.

The District Disaster Management Funds shall be kept in one or more accounts maintained by the District Authority, in local or foreign currency, in any scheduled bank in Larkana and will be utilized in accordance with the direction of District Government Authority.

This fund shall be administered by the District Authority meeting the expenses for emergency preparedness, response, mitigation, relief and reconstruction. It will be the responsibility of Chairman DDMA to take decision on expenditure. In case of emergency, the District Coordination Officer (DCO-DDMA) may also utilize these funds for emergency expenditure, as per subject to ex-post facto approval.

In the manner to prepare local communities to recover from adverse situations through training, education and awareness, this Plan suggests DDMA Larkana to achieve this task through 6 month (bi-annual) DRM training skill plans.

⁵ National Disaster Management Act -2010’ Government of Pakistan

These training must be provided to local communities twice every year before and after monsoon season (May – July), so that each member of local community must be aware of possible risks and precautions needed to adopted before and after disaster.

4.3 Organizing the Drills

There is variety of regulations relevant with training drills constituted in Civil Defence Act of 1952 of Pakistan Government. In this regulation, various well defined training sets configured at multiple organizational setups, from federal to provisional, district to sub-districts and towns to rural level, and have been defined in detail. These stimulating training sets include drills for; peace time, stand by, precautionary and war time.

The Larkana District Disaster Management Authority will plan and carry out simulations and drills in coordination with District Civil Defence Department.

4.3.1 Simulations and Drills

Following exercises can be undertaken as drills relating with DRM:

- Flooding from rains and river overspill
- Railway / road accidents
- Incidents at a factory premises manufacturing chemicals and other merchandize
- Bomb Blast
- Prolong drought
- Earthquake
- Storms

4.3.2 Schedule of Organizing Drills

There should be at least six monthly drills need to be conducted among stakeholders and communities living in disaster risk areas. Lessons learnt from previous experiences / drills and on-going disaster related incidents should be incorporated in DRM activities.

4.3.3 Resources for Organizing the Drills

The concerned departments, agencies and organizations will bear their cost for undertaking drills. The DDMA Larkana will support provide minimal financial resources for the conduct of drills.

5. STRUCTURE, ROLE AND RESPONSIBILITY OF DISTRICT DISASTER MANAGEMENT AUTHORITY LARKANA

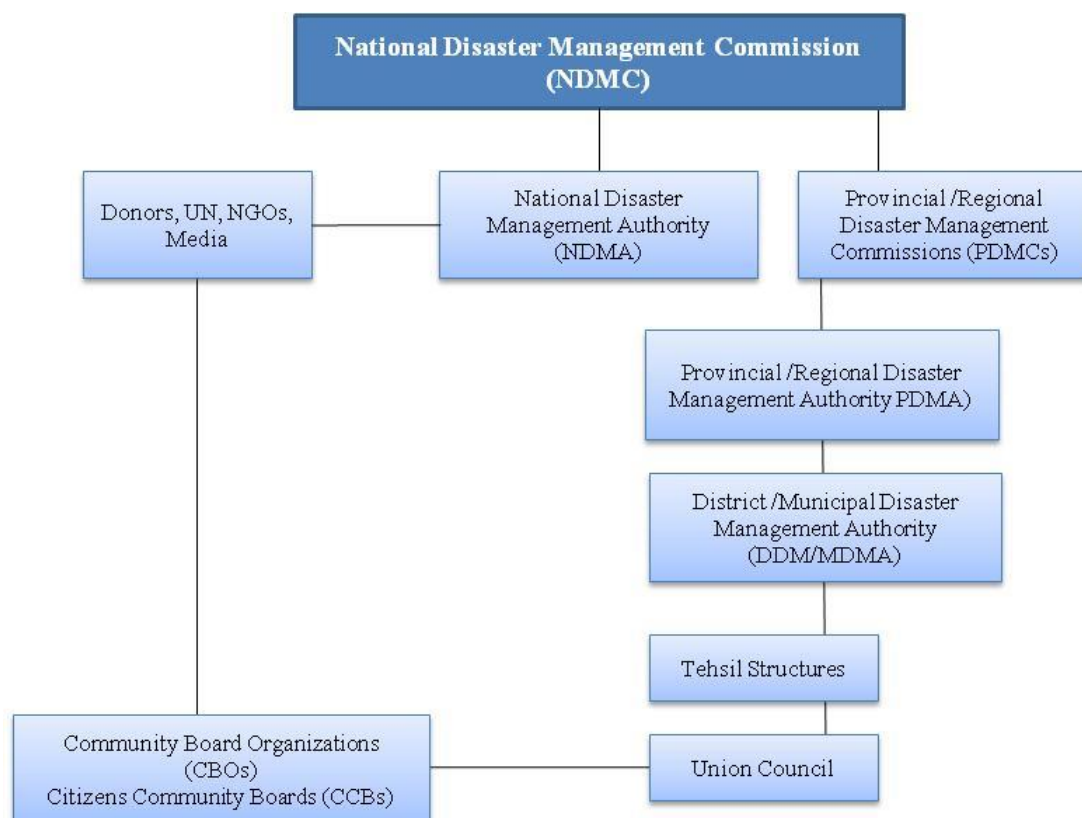
5.1 District Disaster Management Authority – Role and Responsibilities (DDMA)

The key responsibility of District Disaster Management Authority (DDMA) are to support local governments, union councils and villagers in DRR related affairs and implement working plan mechanisms through local resources.

DDMA is also bound to assist local authorities to formulate their own disaster risk management plans for their respective constituencies. These sub plans should focus on analyzing risks, relief remedies, opportunities for financial resources and educating stakeholders regarding their responsibilities for preparedness, response and recovery.

DDMA's support to key authorities of TMAs, UCs and villagers is also to encompass; organizing preparedness trainings for local communities, underscore awareness, conduct risk fighting drills, hiring volunteers for search and rescue, first aid, evacuation and fire fighting drills, etc. It should establish early warning system, which in case of Larkana already exists, by assessing risks, planning mitigation schemes for the strengthening of livelihoods.

DDMA Structure in Pakistan⁶



⁶ 'Policy Brief in Governance Issues of DRM –Pakistan', Institute of Social Science Policy, Pakistan

5.2 District Disaster Management Authority (DDMA) – Larkana

Larkana present District Disaster Management Authority DDMA performs its governance operations under the leadership of District Deputy Commissioner Office (also Chairman DDMA). The DDMA Larkana has established well organized governance set up to cope any disaster situation in future. However, this setup lacks active participation of many stakeholders that can play vital role in disaster risk management reduction process.

The inactive participation of stakeholders not only affects the performance of active participants working on disaster relief matters but may also result as slowing down of overall disaster mitigation/rehabilitation process. Hence, DDMA Larkana must ensure participation of all stakeholders. The complete list of relevant stakeholders and their job responsibilities are mentioned in later part of this chapter.

5.3 Present Composition of DDMA Larkana

Larkana's present *Districts Disaster Management Authority* (DDMAL) is comprised of following members⁷.

• Deputy Commissioner	Chairman
• Additional Deputy Commissioner –I (Revenue)	Secretary
• Superintendent of Police	Member
• Superintending Engineer (W&S)	Member
• Executive Engineer Public Health Engineering	Member
• Executive Engineer Irrigation (Dadu Canal Division)	Member
• Executive Engineer Irrigation (Rice Canal Division)	Member
• Executive Engineer Irrigation (Warah Canal Division)	Member

5.4 Sub Committees

a) Risk Management Committee (Taluka Level)

○ Assistant Commissioner (Revenue)	Chairman
○ Administrator Taluka Municipal Administration	Secretary
○ Deputy Superintendent of Police concerned	Member
○ Taluka Municipal Officer (Infrastructure)	Member
○ Assistant Executive Engineer, Irrigation	Member
○ Assistant Engineer (Roads, Buildings, Education Works)	Member
○ Mukhtiarkar (Revenue)	Member
○ Deputy District Officer (Social Welfare)	Member
○ Taluka Health Officer	Member
○ Representative of SEPCO	Member
○ Representative of PTCL	Member

⁷ DDMA – Larkana, 'Larkana Contingency Plan Report 2011', prepare by the Office of Deputy Commissioner Larkana.

b) Committee for Electricity Arrangements at Vulnerable Places /Protective Embankments

- Additional Deputy Commissioner-I
- Deputy Manager SEPCO
- Assistant Manager SEPCO (All)

c) Committee for Arranging Casual Telephone Connections at Vulnerable Places (Embankments).

- Additional Deputy Commissioner-I
- Assistant Engineer NTCL
- Business Manger PTCL

d) Committee for Arranging and Mobilizing Heavy Machinery to Protective Embankments

- Additional Deputy Commissioner-I
- Superintending Officer (W&S)
- Executive Engineer Roads/Building/ Education Works
- Assistant Engineer Agriculture Workshop
- Assistant Engineer (Roads) All

e) Committee for the Security and Evacuation of the People from the Affected Low Laying Areas.

- | | |
|-------------------------------------|-----------|
| ○ Deputy Commissioner | Chairman |
| ○ Additional Deputy Commissioner –I | Secretary |
| ○ Superintendent of Police Larkano | Member |
| ○ Assistant Commissioner (Revenue) | Member |

f) Committee for Arranging the Transport for Evacuation of the People displaced from Low laying areas.

- Assistant Commissioner (Revenue) All
- SDPO Head Quarter
- Mukhtiarkar (Revenue) All
- Traffic Sergeant Larkano

g) Committee for Establishment of Veterinary Camps

- Deputy Director Agriculture
- Assistant Director Livestock / Animal Husbandry /Poultry
- Veterinary Officer (All)

h) Committee for Establishment of Relief Camps

- Additional Deputy Commissioner-I
- Additional Deputy Commissioner-II
- Superintending Engineer (W&S)

- District Officer (Social Welfare)
- Assistant Commissioner (Revenue) All
- Mukhtiarkar (Revenue) All

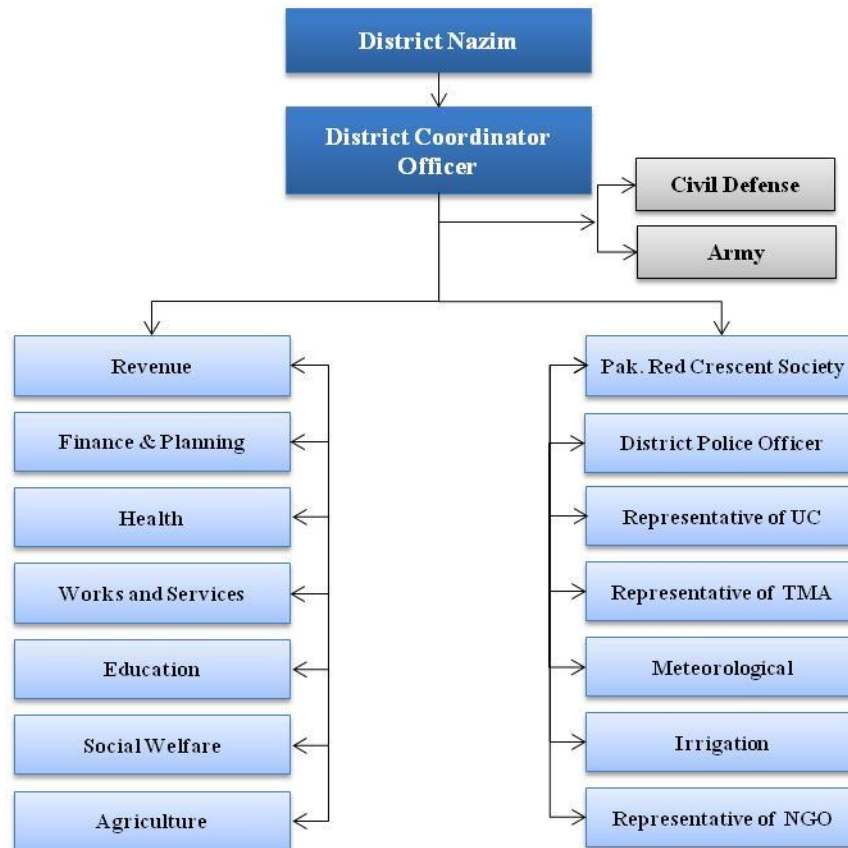
i) Committee for Distribution of Foods and Non-Food items at Relief Camps

- Additional Deputy Commissioner-I
- Additional Deputy Commissioner-II
- Deputy Director Agriculture
- District Officer (Social Welfare)
- District Food Controller
- Assistant Commissioner (Revenue) All
- Mukhtiarkar (Revenue) All

j) Committee for Establishment of Medical Camps

- Executive District Officer (Health) / D.H.O
- District Support Manager PPHI
- Medical Superintendents (All)

5.5 DDMA Composition may change after the Local Bodies' Election, Government of Sindh 2014.



5.6 Key Responsibilities of DDMA⁸

The DDMA Larkana through its internal and external resources must ensure of taking responsibility of following:

- Prepare disaster risk management plans including district response plan
- Coordinate and monitor the implementation of District DRM plan in accordance with provisional and national DRM policy of government of Pakistan
- Ensure that vulnerable areas of district should be identified and measures for their prevention against are undertaken by the concerned departments working for disaster relief at local and district
- Ensure that the guidelines for prevention, mitigation, preparedness and response measures as laid out in national DRM and Provincial DRM policy should be followed by all public agencies
- Give directions to different authorities at the district and local level to adopt measures for DRM prevention/ mitigation
- Encourage local government bodies to design principal DRM policy guidelines
- Monitor implementation and progress of DRM plans prepared by Taluka authorities
- Organize DRM related specialized training programs for officers, employees, and voluntary rescue workers of district
- Facilitate DRM related community trainings and awareness programs to local communities
- Set up, maintain, review and upgrade the mechanisms for early warning system for general public
- Identify buildings and places which in situation of disaster can be used as relief centers or camps and assure arrangements for water supply and sanitation
- Ensure food stockpile or to make them available at a short notice during disaster situation
- Encourage involvement of NGO's and voluntary social welfare institutions working on disaster relief matters
- Ensure that communication systems should remain in order

The District Coordination Officer / Deputy Commissioner along with support of stakeholders will monitor progress and make timely changes to relief mechanisms. Any significant change to emergency response process will be notified to District Disaster Management Authority (DDMA) members immediately. Support from relevant government offices/officers and personnel will be hired for further support.

To establish linkages with media, DDMA will set up partnerships with electronic and print media. DDMA will also conduct trainings, disseminate awareness programs and provide education on loss of life, injury, sufferings and property damage to local communities with the help of media.

⁸ Source: Disaster Risk Management Plan Sindh Province – Nov 2008, Provincial Disaster Management Authority, Government of Sindh.

5.7 Additional Powers of District DRM Authority

- Provide directions for the release and use of resources available with any department of the government and the local authority in the district
- Control and restrict vehicular traffic movement in vulnerable or affected areas
- Restrict the entry of any person inside vulnerable or affected areas
- Remove debris, conduct search and carry out rescue operations
- Establish emergency communication system in the affected areas
- Make arrangements for disposal of the unclaimed dead bodies
- Construct temporary bridges or other necessary structures and demolish structures which may be hazardous to public or aggravate the effects of the disaster
- Ensure that the non- governmental organizations carry out their activities in an equitable and non discriminatory manner
- Take responsibility of any other matter required to be taken in disaster situation

5.8 Priority Areas for DDMA

DDMA will thus focus on following priority areas to enhance knowledge and develop technical skills on disaster risk management within district.

- Develop DRM training curricula
- Identify and hire competent trainers for DRM
- Conduct courses for district, municipal and local Disaster Management Authorities dealing with hazard prone areas
- Develop public awareness materials (e.g. posters, brochures, booklets, videos) for training, education and public awareness
- Organize media orientations about its role in promoting disaster risk management and community preparedness

The Human Resources Development Department (HRDD) under the office of District Coordination Officer /Deputy Commissioner will be the leading agency in priority areas and would assess levels of awareness, provide training and equip government personnel, and thereafter design, implement and evaluate awareness campaigns, skill trainings and drills.

Training Needs Assessment (TNA) based on departmental roles will also be conducted for ensuring that training of each person/task unit. For updated training of personals, the local HRDD will communicate with technical agencies like NGO's or international organizations like United Nations, World Bank, Asian Development Bank, etc.

5.9 DRM at Community or Local level

Implementing DRM programs at community or local level is the heart of disaster risk reduction process. Disasters are essentially local in terms of their impact and it is the local community or village authority that first responds to any disaster. Experience and historical analysis of disasters in Larkana district demonstrate that most disaster events were localized in their marginal scale and harmed the local villagers most.

Thus, it is imperative that disaster risk management should be implemented at local level for capacity building of local officials, communities, civil society organizations and professionals like builders, contractors, masons, teachers and doctors. Efficient local authorities, educational institutions, NGOs and community groups would also help in reconstructing communities.

5.10 Role of Taluka and Town Authorities

Institutions at Taluka or Town level are the frontline of disaster risk reduction and response. For many governments this is the lowest administration operational level which interacts with disasters. Thus, governance authorities along with the support of relevant stakeholders can play vital role in disaster risk reduction. For example; agriculture department workers can disseminate information on impacts of drought and flooding upon crops; health workers can raise awareness about potential diseases threat likely to occur in repercussion of any hazard, education officials can assist in organizing disaster preparedness drills for school children, etc.

Similarly, taluka authorities also possess potential for organizing emergency responses and immediate relief; e.g. damage and loss assessment, recovery needs assessment, etc. Taluka and Town administrator will lead operations of risk reduction by coordinating with municipal officers and DDMA. Other key players are police, fire services, community organizations (COs) and NGOs.

5.11 Role of Union Councils

Union councils are the lowest tier institutional authorities of provincial government of Sindh. Union councils can provide advocacy for community needs to District Councils or DDRMAs. Community demands such as allocations of financial resources in from of local budgets for hazards mitigation and appropriate infrastructure development; e.g. food storage, rainwater collection for harvesting in drought affected areas and vocational training for risk management etc. It is very important to educate political leadership of this level with DRM knowledge. Union councils can also develop policy frameworks and guidelines for risk reduction.

5.12 Community Based Organizations (CBO's)

In order to promote disaster risk management activities at community level, it is very necessary for district and Taluka authorities to engage community organizations closely interacting with local communities on multiple issues.

In the absence of community organizations, new groups must be established for effective disaster risk reduction and management. CBOs can be trained for early warning system, evacuation, first aid, search and rescue, fire fighting etc. Coordination linkages will be developed between CBOs and relevant local agencies; e.g. agriculture, banks, health and veterinary services for the promotion of disaster preparedness.

Skills and knowledge of CBOs leadership will be developed through financial management, human resource management, resource mobilization, interpersonal communication, and presentation and negotiations skills. The provision of Citizen Community Boards (CCBs) in local Government Ordinance (SLGO 2001) provides a detailed framework for organizing communities' resources for DRM at local level.

5.13 List of all Key stakeholders needed to be involved in DRM process⁹

The Larkana District Disaster Management Plan encourages active participation of following public /private sector institutes to provide assistance to local communities in disaster situation. The following list of all key stakeholders needs to be engage in DRM process has been retrieved from 'Disaster Risk Management Plan – Province Sindh (2008)' Report.

All government sector departments must coordinate with their counterparts as per mechanism suggested in Standard Operation Procedures (SOP) and as per job responsibility descriptions mentioned in 'Provisional Disaster Risk Management Plan' of government of Sindh.

⁹ Source: 1- Disaster Risk Management Plan – Province Sindh (2008)

2- District Contingency Plan Thatta -2011, prepared by DDMA - Thatta (2011)

AGRICULTURE		
Pre-Disaster Measures	During-Disaster Measures	Post-Disaster Measures
<ul style="list-style-type: none"> Capacity building of Agriculture department regarding disaster risk management. Provide recommendations on changing/rescheduling of cropping patterns Create Community Seed Bank at Union Council level Provide livestock vaccination & de-worming Assessment of high prone areas and estimation of possible damage and needs for recovery regarding livestock, crops, irrigation facilities in case of any disaster Mass awareness regarding epidemics and diseases to livestock and crops Regular surveillance of rivers, canals, barrages and head works, other water courses which are most likely to be in flood Close coordination with Meteorology department & media, especially during Monsoon 	<ul style="list-style-type: none"> Close & regular coordination with DEOC Immediate transfer of current situation to DDMA and media to be spread for mass awareness Set up temporary offices in canal rest houses and other buildings as per need Vaccination of livestock 	<ul style="list-style-type: none"> Facilitation to institutions / NGOs/ INGOs which focus on rehabilitation activities Prepare report on damages and needs submit to DDMA Upgrade Community Seed Bank (CSB) Mass awareness regarding epidemics and diseases to livestock and crops Repair and rehabilitation of canals, barrages and head works, other water courses which caused damage during flood Timely compensation to affected farmers Vaccination of livestock Prepare overall report of the department regarding Intervention and disseminate to DDMA and other GOs / NGOs/INGOs

IRRIGATION		
Pre-Disaster Measures	During-Disaster Measures	Post-Disaster Measures
<ul style="list-style-type: none"> Monitor water level. Collect information on water level prepare equipment and machinery (pumping machines) to irrigate crop fields where water is scarce Dig canals to irrigate from reservoirs to dry areas Request the local authorities to share information on damaged irrigation canals and Channels 	<ul style="list-style-type: none"> Respond to specific water level and report to other line departments Provide pumping machines to pump water out from public places Cooperate with other line departments, NGOs Check irrigation systems when water level rises 	<ul style="list-style-type: none"> Conduct assessment of damages and needs and report to DDMA through DEOC Restore and repair damaged irrigation systems In collaboration with Health & Environment department, conduct impact assessment and monitor water quality Prepare overall report of the department regarding intervention and disseminate to DDMA and other GOs / NGOs/INGOs

LIVESTOCK		
Pre-Disaster Measures	During-Disaster Measures	Post-Disaster Measures
<ul style="list-style-type: none"> • Coordinate with the DDMA in the pre-disaster planning • Prepare necessary equipments, labor, transportation and other materials for emergency interventions • Protect roads from getting flooded (i.e. sand bagging and enforcement of embankments) • Provide training to soldiers and determine the role of soldiers who are stationed in flood prone areas • Assist in evacuation of people to safe places 	<ul style="list-style-type: none"> • Maintain liaison with the DEOC for vital inputs during response • Collect information and warn appropriate Army units for engagement in safety, rescue and evacuation activities • Establish communication infrastructure and supplement the civil communication set-up if required • Coordinate all military activity required by the civil administration • Provision of medical care with the help of the medical teams, including treatment <ul style="list-style-type: none"> • at the nearest armed forces hospital • Transportation of relief material • Provision of logistic back-up (aircrafts, helicopters, boats) • Establish Relief Camps • Assist in evacuation of people to safe places during the disaster • Installation of temporary bridges, Bunds • Maintain law and order situation where police department calls for help 	<ul style="list-style-type: none"> • Cooperate and coordinate with district authorities • Coordinate with line departments for capacity building in sectors such as road construction, telecommunication, medical facilities and other infrastructural development • Prepare overall report of the department regarding intervention and disseminate to DDMA and other GOs / NGOs/INGOs

METROLOGY		
Pre-Disaster Measures	During-Disaster Measures	Post-Disaster Measures
<ul style="list-style-type: none"> • Update and upgrade forecast equipment • Timely and authentic forecast of rains, windstorms • Timely transfer of information regarding abnormal weather conditions to media and other concerned departments 	<ul style="list-style-type: none"> • Update and upgrade forecast equipment • Timely and authentic forecast of rains, windstorms • Timely transfer of information regarding abnormal weather conditions to media and other concerned departments 	<ul style="list-style-type: none"> • In coordination with Environment department, conduct study of factors which cause abnormal weather changes • Evaluate gaps in information sharing

FINANCE AND PLANNING		
Pre-Disaster Measures	During-Disaster Measures	Post-Disaster Measures
<ul style="list-style-type: none"> • Regular coordination with DDMA • Allocate budget on contingency basis, to handle any emergency situations • Plan, identify, and procure potential resources that might be required/desired to handle, disaster situations • Facilitate other departments in planning and meeting their financial needs 	<ul style="list-style-type: none"> • Procure and disseminate material and equipment for emergency response • Provide funds to other line departments for rescue and relief activities 	<ul style="list-style-type: none"> • Get statistical data regarding actual damage and recovery needs from all line departments • Facilitate other departments in planning and execution of rehabilitation in a cost effective manner • Coordinate with all line Departments

CIVIL DEFENSE		
Pre-Disaster Measures	During-Disaster Measures	Post-Disaster Measures
<ul style="list-style-type: none"> • Assign representatives for DDMA, and participate in meetings • Information sharing regarding capacities and needs of Civil Defense department regarding disaster risk management • Capacity building of Civil Defense department regarding disaster risk management • Information sharing regarding technical and personnel expertise with DDMA • Conduct trainings for Volunteers regarding Rescue and other relevant expertise in collaboration with Health and Community Development department • Create awareness regarding rescue, evacuation and first aid • Affectively establish, train and systemize volunteers initiatives in collaboration with education department / institutions • Develop early warning system • Coordinate closely with Meteorology department & media, especially during monsoon and inform all line departments on any disaster situation 	<ul style="list-style-type: none"> • Fire fighting. • Rescue and evacuation • Assign volunteers in coordination with Community Development and Education departments for disaster response initiatives • Communicate to DEOC about details of all activities • Communicate to DEOC any additional resources required for performing the above tasks. • Facilitate line departments as per demand in disaster response 	<ul style="list-style-type: none"> • Identify gaps, make plan for future to overcome weakness of department. • Prepare overall report of the department regarding interventions and disseminate to DDMA and other GOs / NGOs/INGOs

WORKS AND SERVICES		
Pre-Disaster Measures	During-Disaster Measures	Post-Disaster Measures
<ul style="list-style-type: none"> • Coordination with DEOC • Linkages with GOs/NGOs /INGOs • Inspection and checking of all buildings, bridges, roads and communication infrastructure • Develop contingency plan for disaster risk management • Capacity building of all departments for disaster risk management 	<ul style="list-style-type: none"> • Coordinate with DEOC • Linkages with GOs/ NGOs/ INGOs • Inspection and checking of all building, bridges, roads and communication infrastructure • Develop contingency plan for disaster risk management 	<ul style="list-style-type: none"> • Ensure the maintenance of Roads and improvise bridges after cyclones/flood rains, so that there should be smooth flow of transport for evacuation and supply purpose • Prepare Report on damages and needs submit to DDMA

EDUCATION		
Pre-Disaster Measures	During-Disaster Measures	Post-Disaster Measures
<ul style="list-style-type: none"> • Assign representatives for DDMA and participate in meetings • Information sharing regarding capacities and needs of Education department regarding disaster risk management • Teachers and students are informed about the disaster prone areas of the district. • Teachers and students are informed of their responsibilities to take care of materials and documents to safe places during disaster • Facilitate and collaborate with Health and Environment department in preparation of health & environment related curriculum • Collaborate with Civil Defense department in systemizing volunteers 	<ul style="list-style-type: none"> • Mobilize human resources for intervention during disaster. • Inform schools situated in high risk areas about flood information (flood level) • Arrange relief and shelter camps in educational institutes for the disaster affected people. • Facilitate Health department in medical camps, blood donations and provision of medical aid • Coordinate with Civil Defense & Community Development departments in assigning volunteers for emergency response 	<ul style="list-style-type: none"> • Assessment of damages occurred to educational institutes. • Provide assistance to teachers & students and other staff who are victimized by disasters (lack of food, shelter, etc.) • Collect information on adverse impacts of flood disaster on health of teachers and students (psychosocial care) • Rehabilitation and reconstruction of affected educational facilities • Facilitate institutions / NGOs / INGOs which focus on rehabilitation of educational facilities • Prepare overall report of the department regarding intervention and disseminate to DDMA and other GOs / NGOs/INGO

HEALTH		
Pre-Disaster Measures	During-Disaster Measures	Post-Disaster Measures
<ul style="list-style-type: none"> • Assign representatives for DDMA, and participate in meetings • Information sharing regarding capacities and needs of Health department regarding disaster risk management • Build capacity of health department regarding disaster risk management and preventive health care especially in disaster prone areas • Monitor the general health situation, e.g. monitor outbreak of diseases • Provide specific information required regarding precautions for epidemics • Establish a health mobile team in district & Tehsil headquarter hospital • Set-up an information centre to organize sharing of information for public information purposes. • Prepare first aid kits, medicines, water test kits, chloramines and anti snake venom serum • Collaboration with relevant organizations / partner NGOs for participation and support through financial and technical resources 	<ul style="list-style-type: none"> • Provide emergency treatment for the seriously injured. • Ensure emergency supplies of medicines and first-aid • Supervise food, water supplies, sanitation and disposal of waste • Assess and co-ordinate provision of ambulances and hospitals where they could be sent (public and private) • Provide special information required regarding precautions for epidemics. • Set-up an information centre to organize sharing of information for public info purposes • Conduct impact assessment on health • Intervene immediately when there is a disease outbreak • Prepare plan for the following year along with reports and submit to DDMA • Medical camps and vaccination • Health education in collaboration with Social Welfare and Education departments • Ongoing surveillance • Facilitate institutions / NGOs/ INGOs which focus on rehabilitation of health facilities • Rehabilitation of health infrastructure affected during disaster • Preparation of impact assessment surveys covering strengths and weaknesses of interventions and impact on affected victims and dissemination learning to DDMA 	<ul style="list-style-type: none"> • Conduct impact assessment • Prepare plan for the following year along with reports and submit to DDMA • Medical camps and vaccination • Health education in collaboration with Social Welfare and Education departments. • Ongoing surveillance • Facilitate institutions / NGOs/ INGOs which focus on rehabilitation of health facilities • Rehabilitation of health infrastructure affected during disaster • Preparation of impact assessment surveys covering strengths and weaknesses of interventions and impact on affected victims and dissemination learning to DDMA and other concerned institutions • In collaboration with Water Management department conduct impact assessment and monitoring to inspect treatment and disposal of industrial, urban waste and hospital waste assessment on health situation.

MEDIA		
Pre-Disaster Measures	During-Disaster Measures	Post-Disaster Measures
<ul style="list-style-type: none"> • Trainings for disaster reporting • Publish broadcast /telecast plans of DDMA regarding disaster risk management and also voice public opinion • Close coordination with Meteorological, Irrigation, Civil Defense departments for announcing warnings and updates • Awareness raising in collaboration with departments such as Health, Education, Environment 	<ul style="list-style-type: none"> • Close coordination with Meteorological, Irrigation, Civil Defense departments for announcing warnings and updates • Highlight disaster struck areas in detail • Publish, broadcast /telecast programs of safety measures during disaster 	<ul style="list-style-type: none"> • Focus on problems being faced by the people of the affected area • Publish, broadcast /telecast programs highlighting strengths, weaknesses and scams in disaster response activities

REVENUE		
Pre-Disaster Measures	During-Disaster Measures	Post-Disaster Measures
<ul style="list-style-type: none"> • Assign representatives for DDMA, and participate in meetings • Information sharing regarding capacities and needs of Revenue department regarding disaster risk management • Capacity building of Revenue department regarding disaster risk management • Assessment of high prone areas and estimation of possible damage and needs for recovery in case of emergency • Arrangement of financial resources (block grants) • Facilitate getting tax exemptions to institutions/NGOs/INGOs focus on disaster risk management • Collect and update population data at village level 	<ul style="list-style-type: none"> • Coordination with the DEOC • Establish relief distribution centers • Accept relief donations and relief support • Timely release of funds • Request assistance from the DEOC, as needed • Submit financial reports to the DEOC of the operations for onward circulation to all stakeholders 	<ul style="list-style-type: none"> • Submit progress report to all relevant stakeholders • Assessment of damage of industry/business, crops and livestock and settlement of applicable taxes accordingly in coordination with Industry, Agriculture and Irrigation departments • Capacity building of Social Welfare department regarding disaster risk management

NGOs / INGOs		
Pre-Disaster Measures	During-Disaster Measures	Post-Disaster Measures
<ul style="list-style-type: none"> Facilitate DDMA member departments for capacity building regarding disaster risk management. Capacity building of community groups regarding disaster risk management. Linkages with concerned departments and institutions for providing technical and financial resources regarding diverse sectors related to disaster Resource mobilization at local and international level 	<ul style="list-style-type: none"> Collaborate and facilitate in relief operations. Incorporate local and international expertise in disaster response Establish temporary shelters & camps Facilitate in overall disaster response in collaboration with concerned departments (e.g. medical aid with Health department and soon) Regular updates and alerts to local & international partners Utilization of existing resources and further mobilization at local and international level Assessment of losses using sphere standards 	<ul style="list-style-type: none"> Collaborate and facilitate in rehabilitation activities Incorporate local and international expertise in rehabilitation activities Facilitate overall rehabilitation in collaboration with concerned departments Impact assessment studies and sharing findings with DDMA, local and international partners Preparation of overall reports and share with DDMA and other partners Linkages with partners for sustainable resources mobilization
POLICE		
Pre-Disaster Measures	During-Disaster Measures	Post-Disaster Measures
<ul style="list-style-type: none"> Assign representatives for DDMA Participate in DDMA meetings Information sharing regarding capacities and needs of Police department regarding disaster risk management Capacity building of Police department regarding disaster risk management Information dissemination through 15 helpline service to local residents Prepare team for emergency intervention Prepare plan for shifting to safer places and early warning system 	<ul style="list-style-type: none"> Co-ordinate with DEOC Shifting the rescued/affected people to hospitals Providing easy access to rescue and relief personnel/vehicles Corpse disposal Maintain law and order Prohibit overloading goods in trucks Provide warning / instruction to travelers Divert traffic on alternate routes as and when necessary Ensure security to workers of NGOs and INGOS who perform duties for disaster response 	<ul style="list-style-type: none"> Cooperate with DDMA Provide security in Relief Camps Ensure security to workers of NGOs and INGOS who perform duties for the relief & rehabilitation of the victims Prepare overall report of the department regarding intervention and disseminate to DDMA and other GOs / NGOs/INGOs Development of contingency plan in the light of lesson learnt

SOCIAL WELFARE AND COMMUNITY DEVELOPMENT		
Pre-Disaster Measures	During-Disaster Measures	Post-Disaster Measures
<ul style="list-style-type: none"> • Coordination of all NGOs and civil society organization working for disaster risk management • Empower the extremely vulnerable people emphasizing women and children through public awareness involving respective departments for various fields such as Education, Health etc • Capacity building of CCBs, CBOs and other community groups • Facilitate institutions / NGOs/ INGOs which focus on rehabilitation activities and provide funds wherever desired 	<ul style="list-style-type: none"> • Provide information on the situation of the disaster to the DEOC • Coordinate all NGOs / INGOs and civil society organizations working during the emergency response • Monitor progress of relief operations in the affected areas • In coordination with Health and Revenue departments, ensure delivery of relief to most vulnerable segments of society such as children, orphans, widows, destitute • Send advisories to the DEOC on the progress of the disaster situation • Assist and facilitate Damage and Needs Assessment teams from NGOs • Share its human resources with DDMA 	<ul style="list-style-type: none"> • Monitor and follow up the status of the extremely vulnerable people • Assist and facilitate Damage and Needs Assessment teams from NGOs • Conduct impact assessment studies and analysis of strengths and weaknesses of stakeholders and disseminate learning to DDMA and other concerned institutions

6. MECHANISM OF WARNINGS

The District Emergency Operation Center (DEOC) operates the mechanism of early warning system in Larkana District. DEOC is the centre place for sharing information and resources regarding emergency programs within district. The DEOC will be in close connection with all public/private sector departments and stakeholders during any disaster situation. The key responsibilities of DEOC are to:

- Collect and transfer information to concerned public agencies of Larkana district regarding ongoing situation of disaster
- Disseminate disaster situation updates to DDMA and general public
- Operate a public information display area for media and general public for immediate access on disaster updates
- Provide recommendations to public sector departments regarding safety of crops, livestock, fisheries, forest and soil
- Establish veterinary service units for necessary services
- Communicate with health workers for health relief support
- Organize mobile teams for first aid and basic medication delivery services for disaster affected communities
- Arrange medical facilities at relief camps
- Develop discharge control mechanism before monsoon rains
- Conduct inspection of all irrigation channels & drains
- Assign technical teams comprising civil engineers and quality surveyors to conduct for regular watch survey for embankment health quality check up
- Disseminate early warnings to vulnerable areas through police stations and Livestock departments
- Conduct risk and vulnerability assessment on disaster affected areas
- Communicate appropriately with concerned stakeholders including those maintained by private organizations

6.1 Coordination with Existing Government Departments¹⁰

The DEOC will work together with following public sector institutes for emergency response and immediate relief.

a) Agriculture

- Damage and Loss Assessment of crops, livestock, fisheries, forest and soil
- In case of disaster, share initial information report to DEOC for immediate action
- Establish veterinary service units for necessary services

¹⁰ District Contingency Plan – Thatta, Prepared by DDMA - Thatta (2011)

b) Health

- Conduct meeting with all health units for situation analysis
- Mobilize entire health unit network for health need assessment
- Organize mobile teams for first aid and basic medication relief to disaster affected communities
- Arrange medical facilities at relief camps
- Provide information to DEOC

c) Irrigation and Drain

- Develop discharge control mechanism before monsoon
- Conduct inspection of all irrigation channels & drains
- Assign teams for regular embankment physical quality check for channels and drains
- Submit daily update report to DEOC
- Coordinate and communicate with DEOC

d) Police

- Disseminate early warning to vulnerable areas through police stations
- Make logistics arrangements for evacuation and provide relief work services along with DEOC and Revenue department
- Provide security services for relief camps and disaster affected locations
- Coordination with DEOC

e) Revenue

- Conduct emergency meeting with all DDOs in situation of Disaster
- Coordination with DEOC
- Report Damage & Losses to DEOC
- Evacuate effected communities to safe places
- Establish Relief Camps
- Arrange necessary commodities for affected communities

f) Works & Services

- Conduct meeting with all SDOs for physical verification of community infrastructure.
- Provide damage & need assessment report of community infrastructure to DEOC.
- Ensure immediate maintenance of communication infrastructure for effective emergency response
- Coordinate with DEOC

g) DEOC Larkana¹¹

District Emergency Operation Centre (DEOC) / District Control Room (DCR) in Larkana has been established by Deputy Commissioner Office (DCO) under the supervision of Additional Deputy Commissioner-1 Larkano.

Similar Control Rooms are also established in other offices as under:

- D.C. Larkano
- SSP Larkano
- EDO Health
- Civil Defence
- Mukhtiarkar Larkano
- Mukhtiarkar Dokri
- Mukhtiarkar Ratodero
- Mukhtiarkar Bakrani

6.2 Guidelines for Operation Procedures¹²

The DEOC Larkana must ensure proceeding of following emergency warning mechanisms through its resources.

One of the main responsibilities of DEOC is to disseminate disaster emergency warning to all DDMA members through Larkana Police Communication Centers. The DDMA with the help of Civil Defence, Meteorology, Revenue, Irrigation and Police departments will establish number of communication networks to ensure that all members of threaten communities receive pre /post disasters warnings.

Early Warning Alert system through leaflets, telephonic text messages, radio/television broadcasting and public announcements will be disseminated across communities. The department of Meteorology will be the key responsible authority to broadcast early warning against natural hazards like heavy rain fall, flood or earthquake.

Details regarding responsibility for notification processes within DDMA member agencies will be detailed in respective agency plans. Agency plans will include detailed contact registers.

It is important to mention here that the process of notification or dissemination of warning is not only function dependant on activation of the DDMA, in absence of active DDMA it is the responsibility of DDMA member or executives to disseminate early warning information to community provided by district coordination officer or local bodies.

¹¹ DDMA – Larkana, 'Larkana Monsoon Floods Contingency Plan Report 2012', prepare by the Office of Deputy Commissioner Larkana.

¹² District Contingency Plan Thatta -2011, Prepared by DDMA Thatta (2011).

6.3 Public Information

The District Information Officer (DIO) is responsible to provide updated information to the media and general public regarding any disaster event or situation. DEOC will also arrange the media briefings and interviews with key personnel and media channels for proper distribution of the information consisting up to date disaster condition in order to reduce the losses.

6.4 Reporting

All concerned departments including Civil Defence, Meteorology, Revenue, Health, Works and Service, Finance & Planning, Irrigation and Police would be held responsible for proving regular updates in from of situation reports to DEOC. The communication officer at DEOC will collect reports and circulate updates (situation reports) to all stakeholders as well as DDMA.

6.5 Requests for Assistance

In presence of any disaster event, requests for any assistance from outside the district will be made by the Secretary DDMA (District Coordination Officer (DCO)) to the Provincial Disaster Management Authority. The Tehsil Administration and Union Council bodies will also make request to the District Nazim / DC, Chairman (DDMA) for possible relief and adequate support.

The DEOC will coordinate with concerned NGOs/donors and institution to put their efforts in relief works together with DDMA to reduce impacts of a disaster as soon as possible.

6.6 Plan Dissemination

In addition to dissemination of the literature related with disaster risk reduction, DDMA will disseminate information to EDO CDD, EDO Revenue and District Information offices operational at District, Tehsil, Union Council and Village level including mass media, general public, CBOs and NGOs working in district.

6.7 Community Involvement and Participation

Larkana DEOC and NGOs working in disaster stricken areas will ensure maximum participation of communities at all stages of emergency operation in order to maintain the morale and confidence of community by utilizing maximum local resources that offer faster recovery.

Community participation will reduce pressures on field agencies with respect to choice and decision making. The representatives of local communities will also contribute in rehabilitation process for reconstruction of community.

7. RECOVERY STRATEGY

Historically, disaster rehabilitation process in Pakistan had never been integrated with country core planning and management system. Thus, reconstruction of communities after disasters is an unanticipated issue which generally lacks concentration paid by government agencies. Disaster recovery is a continuous process, which requires strategic framework from short term to medium/long term time frameworks until resumption of routine life.

The proposed recovery frameworks mentioned below provide guidelines to Larkana DDMA for the rehabilitation of local communities affected by disasters.

7.1 Functions of Recovery

The office of district government Larkana along with support from National / Provincial Disaster Management Authorities constitute a Recovery Committee and draft a recovery plan for rehabilitation. As there is no legislative instrument regarding functions of recovery exist in national/provisional DRM frameworks of Pakistan. The district government of Larkana will prepare recovery plans as per damages and losses assessments on bi annual basis by using internal sources and DRM funding resources handled by DDMA.

7.2 Activation

The district recovery strategy may be activated upon direction from the DCO or Chairman DDMA. The recovery plan must highlight immediate short term/long term recovery proposals, the activation of the strategy will commence with immediate/short term recovery actions plans undertaken within the response phase of overall process.

The level of district support required in medium/long term recovery phase will be dependent on the recovery structure advised by the DDRM committee for each specific event¹³.

7.3 Immediate Short term recovery

The immediate/short term recovery phase will occur concomitantly to response operations. Immediate/short term recovery activities of DDMA should include:

- Support to affected citizens of taluka, union councils, local communities and villages to ensure need assessment
- Support to affected citizens of taluka, union councils, local communities and villages to ensure the delivery of community services (e.g. health services, food, clothing and shelter, financial relief)
- Support to affected citizens of taluka, union councils, local communities and villages to ensure the restoration of critical utilities and services; and
- Support to affected citizens of taluka, union councils, local communities and villages to ensure the provision of temporary housing

¹³ Brisbane District Disaster Management Plan - (2011-2013)', Government of Queensland, Australia

During this phase, it will be decided whether there will be a requirement for medium/long term recovery; the type of recovery assistance will be directed by the DDMA along with timeframe for the transition from short term to medium/long term recovery.

7.4 Transition from Immediate Short Term to Medium/ Long Term Recovery

The DDRMA will utilize the following as triggers for commencing the process of transition from immediate/short term to medium/long term recovery:

- Emergency is contained
- No further hazard or secondary threats are expected in near future
- Response organizations cease their activities
- Public safety measures are in place and work effectively
- Evacuation centers have closed
- Initial rehabilitation has commenced

The appointment of the Recovery Coordinator should take place at the latest during the transition phase and preferably during the response/short term recovery phase of the event.

7.5 Medium/Long Term Recovery

The level of support required from the DDMA during the medium /long term recovery phase will be dependent on the nature and scale of the disaster. The level of involvement of the DDMA may range from supplementation of a Local Recovery Group to the establishment of a District Recovery Group.

7.6 District Recovery Group

Where appropriate to the scale of the disaster the medium/long term recovery phase may include the establishment of a District Recovery Group with specific membership appointed as appropriate to the type of event and functions of recovery.

Where a District Recovery Group is established, the recovery coordination is handed over to the Recovery Coordinator who will be the DC or a person appointed by the DC.

The medium/long term District Recovery Group will comprise any or all members of the DDRMA committee, and any additional invited members as required. Private organizations that are not members of the DDRMA may be invited where required, for example: Chamber of Commerce, insurance companies, major employment (industry) organizations in the area.

Once established the District Recovery Group will be provided with a Terms of Reference specific to the event. The District Recovery Group should develop an Action Plan to meet the requirements of the Terms of Reference.

7.7 District Actions/Resources¹⁴

The following table identifies for each recovery component a broad scale of recovery actions and resources that can be managed at the district level. This incorporates recovery actions and resources that may be undertaken as an element of a District Recovery Group or where assistance from the district is provided through the injection of district resources into the local government recovery group.

7.8 Transition to Normal Business

The conclusion of the recovery phase will be determined by the relevant Recovery Group. The Recovery Group will manage the recovery process for as long as whole of government recovery support is required, the Terms of Reference for the Group have been achieved and until government recovery agencies have the capacity to accept the management of the workload within the agencies core business processes.

7.9 Supporting District Recovery Plans

This district recovery strategy requires support in from of additional plans explaining the function of recovery. The DDRMA committee is responsible for the preparation of following district recovery function specific plans:

- Community Recovery Operational Plan
- District Human-Social Recovery Plan
- Communication Plan

¹⁴ Disaster Management ACT -2003, QLD, Government of Australia

8. SUMMARY

The most threatening disaster risk in Larkana district is flooding caused by overflow of Indus River across its protective bunds. These catastrophic floods caused major loss to human life, infrastructure, standing crops and arable land especially during 2010-2013. There are other disaster risks that facing the district; more important are droughts, communal strife's and rise of epidemics and contagious disease for human, animal and plant life.

At present District Larkana has a well organized DRM setup under Deputy Commissioner (DCO) which includes formation of district disaster risk management authority and sub committees along with district emergency operation centre. The district contingency plan report also prepared by the office of DCO has carried out a comprehensive assessment of disaster damages and losses, prepared disaster awareness, rescue and rehabilitation appraisals and provided statistical information on availability of existing material resources to cope flood based disasters and has also identified inadequacy.

8.1 Problem Identification

The review of DDMA Larkana governance setup and the strategic frameworks designed to cope up with flood risks have the following deficiencies:

- Active participation of multiple stakeholders play essential role in overall disaster risk management process. On the other hand uninitiated participation of stakeholders not only affects the performance of active participants working on disaster relief matters but may also result in slowing down of overall disaster mitigation/rehabilitation process
- Equipping local communities with training, education and awareness against disaster threats and adopting precautionary measures of relief. The communities' effective role as learning agent lies at the core of every effective DRR endeavor. With appropriate education and training communities can move forward to further their own development. Collective learning of disaster risks will prompt them to be proactive in arriving at risk reduction measures
- Development of adequate strategic framework for 'Recovery Phase' after disaster. Thus, reconstruction of communities after disasters in Larkana is rather neglected issue which leaves many affected people displaced or homeless

8.2 Recommendations

- DDMA Larkana must ensure active participation of all key stakeholders mentioned in '*Disaster Risk Management Plan – Province Sindh (2008)*'. These stakeholders must coordinate with their counterparts as per mechanism suggested in Standard Operating Procedures (SOP) and as per job responsibility descriptions

- The DEOC Larkana must ensure proceeding of emergency warning mechanisms to all DDMA members through Larkana Police Communication Centers. The DDMA with the help of Civil Defence, Metrology, Revenue, Irrigation and Police Departments will establish number of communication networks to ensure that all members of threaten communities receive pre /post disasters warnings
- DDMA's support to key authorities of TMAs, UCs and villagers should encompass; organizing preparedness trainings for local communities about awareness, risk fighting drills, hiring volunteers for search and rescue, first aid, evacuation and fire fighting drills, etc. These training courses and education should involve orientation about various disaster risks and vulnerabilities, skill development to cope disaster situation, vulnerability reduction, hazard mitigation and emergency response management
- Taking into account the present day importance of media, DDMA should also establish partnerships with electronic and print media and also develop awareness through media sources
- For successful implementation of priority strategies in sustainable way, it is the responsibility of the district government authority or office of Deputy Commissioner Larkana to establish a separate 'District Disaster Management Fund'

The District Disaster Management Fund could be financed through following resources;

- Grants made by Federal or Provisional Government of Pakistan
- Loan, Aids and Donations from national and international agencies, and
- Donations received from any other source

The chairman DDMA Larkana along with support from National / Provincial Disaster Management Authorities may constitute a Recovery Committee and draft a recovery plan for rehabilitation. The district government of Larkana will prepare recovery plans as per damages and losses assessments on bi-annual basis by using internal sources and DRM funding resources handled by DDMA. District recovery strategy also requires support in form of additional plans explaining the function of recovery. The DDMA committee is responsible for the preparation of following district recovery function specific plans:

- Community Recovery Operational Plan
- District Human-Social Recovery Plan
- Communication Plan

9. DISTRICT CAPABILITY TO COPE WITH DISASTERS - STATISTICS ¹⁵

DISTRICT LARKANA STATISTICS – TALUKA-WISE DISTRIBUTION OF UC'S, TAPA'S, DEH'S, AREA IN ACRES & POPULATION INDEX

Sr. No.	TALUKA	UCs	TAPAs	DEHs	AREA IN ACRES	Estimated Population (2011)
1	Larkano	18	15	52	115268	633885
2	Ratodero	11	13	60	138002	334240
3	Bakrani	9	13	44	118651	256584
4	Dokri	8	10	30	101444	248231
Total	46	51	186	473365	1472939	Total

Vital Installations of the District

Sr. No.	Description	Larkano	Ratodero	Bakrani	Dokri	Total
1	Taluka border station	2	2	1	1	6
2	Supply main meter station	2	2	0	1	5
3	PRS	7	0	0	0	7
4	SEPCO 132 KV & 66 KV Grid station	2	2	0	1	5
5	Railway Stations	2	2	4	3	11
6	PTCL offices	3	5	1	4	13

Veterinary Institutes

Location	Taluka	No.
Larkano, Beerochandio, Dhamrah, Rohel Bugti, Mahota,	Larkano	6
Ratodero, Naudero, lashari, Mirpur Bhutto	Ratodero	5
Bakrani, Arija, Gareello, Mahrabpur	Bakrani	4
Dokri, Balhreji, Qazi Darra, Saindad Junejo, Badeh, sehar	Dokri	6
Total		21

¹⁵ DDMA – Larkana, 'Larkana Monsoon Floods Contingency Plan Report 2012', prepare by DDMA Larkana, Office of DCO – Lakana (2012).

HEALTH FACILITIES

Mobile Medical Teams in Vulnerable Areas

Sr. No.	FROM	UPTO
1	Shahani	Akil (Ambulance With Driver Rhc Naudero)
2	Akil	Purano Abad (Ambulance With Driver Rhc Badah)
3	Purano Abad	Seri Bunglow (Ambulance With Driver T.H Dokri)

Relief Camps - Location

S. No.	Relief Camps	Capacity
1	Railway Station	1450
2	Municipal Stadium Larkana	4800
3	Behind Sarkatio Pir	150
4	Paradesi CNG Station Naudero Road	150
5	Bank between Ghar and Abro	350
6	Rice Canal Park Opposite DCO Office	1250
7	Open Space Liner Hospital Larkana	N/A
8	Near Board Office Khosa Mill	50
9	Noor Colony near Commerce College	200
10	Near Anaj Mandi Larkana	7932
11	New Bus Terminal Larkana	3285
12	Labour Colony Flats Arija Road	200
13	Near Murad Shah Muhalla Larkana	590
14	Plot of Sikandar Ali near Zia Jalbani Sachal Colony (Safdar Colony)	350
15	Professor Colony Kamber Road (Near Nawab Mushtaq Chandio)	255
16	Citizen Colony near Professor Colony Kamber Road Larkana	350
8	New Tent City established near Jhukar-jo-Daro	1600
TOTAL		22962

Relief Camps for IDPs Relief Camps in Ratodero

Sr. No	Relief Camps	Capacity
1	Tent City Anaj Mandi Shp. Road	1000
2	Tent City Ratodero	800
TOTAL		1800

Relief Camps in Bakrani

Sr. No.	Relief Camps	Capacity
1	Tent City Arija	1650
2	Z.A Bhutto	1200
	TOTAL	2850

Relief Camps in Dokri

Sr. No.	Relief Camps	Capacity
1	Agriculture Farm's Quarter	32
2	Open plot near Punhal Brohi	350
	TOTAL	382

Sr. No.	Grand Total of District	Total Capacity
1	22 Relief Camps	27994

Total First Aid Posts

Sr. No	Name	Quantity	Taluka
1	Shahani	01	Taluka Ratodero
2	Phulpotta/ Ketty Mumtaz	01	Taluka Ratodero
3	Akil	01	Taluka Larkana
4	Purano Abad	01	Taluka Dokri
5	Gaji Dero	01	Taluka Dokri
6	Veehar	01	Taluka Dokri

List of Health Facilities having X-Ray Provisions

S. No.	Name of Taluka/ Health Facility
1	Taluka Hospital Dokri
2	Taluka Hospital Ratodero
3	Taluka Hospital Bakrani @ Arija
4	Rural Health Centre Naudero Taluka Ratodero
5	Rural Health Centre Badah Taluka Dokri

Fixed Medical Camps

Sr. No.	Name of Taluka	Fixed Medical Camps
1	Larkano	16
2	Ratodero	24
3	Bakrani	13
4	Dokri	10
Total		63

Health Facilities near River Indus Vulnerable Embankments

Sr. No	Health Facilities
1	Rhc Naudero
2	G.D Shahani
3	Bhu Izat Ji Wandh
4	Bhu Akil
5	Bhu Sonu Jatoi
6	Bhu Newgud
7	Bhu Meon Jo Daro
8	Bhu Karani

Department of Civil Defence (Available Resources)

Sr. No.	Name of item equipment's	Quantity Available
1	Fire Extinguishers	20
2	First Aid kits	10
3	Stretchers	10
4	Rope 2*100 ft	02
5	Shovel	10
6	Ladder	02
7	Life saving Jackets	10
8	Charger Light	05
9	Iron Spade	None

**Agriculture Department
(Available Material Resources)**

Sr. No.	Name of item equipment's	Quantity Available
1	Fire Extinguishers	20
2	First Aid kits	10
3	Stretchers	10
4	Rope 2*100 ft	02
5	Shovel	10
6	Ladder	02
7	Life saving Jackets	10
8	Charger Light	05
9	Iron Spade	

**North Sindh Urban Services Corporation Limited
(Available Resources)**

Sr. No.	Machinery	Qty	For Use
1	Sucker machine	02	For remove of stay water from main roads/ main holes
2	Jetting machine	01	For remove of blockage from sewer lines
3	Diesel engine (24 Hp with 4" outlet)	02	For remove of stay water from main roads & ponds
4	Generator 3x3	03	For remove of stay water from main roads & ponds
5	De watering (8Hp)	03	For remove of stay water from main roads & ponds

Relief Equipment Available (Larkana City)

Sr. No.	Description	Total Quantity	Working
1	Bulldozers (Crawler Tractor)	14	7
2	Light Vehicles (Suzuki Jeeps)	2	2
3	Heavy Vehicles (Cargo Crain)	1	1
4	Heavy Vehicles (Transporter)	1	1

Required Resources

Sr. No.	Item	Quantity
1	Emergency Staff Kits	100
2	Rescue Divers (Life Guards)	60
3	Life Saving Jackets (Different sizes)	150
4	Rope	300 Meters
5	Solar Lights	100
6	Search Lights	150
7	Mega Phones	30
8	Power Generators for rescue teams	15
9	Oxygen Gas cylinder & Kit	20
10	Helix Baskets	04
11	First Aid Box	50
12	GPS Device	12
13	Sand Bags	3000000

Transport Provisions Required To Cope With Monsoon Based Floods

Sr. No	Item	Quantity
1	Transportation Buses	100
2	Dumpers	60
3	Trucks	100
4	Tractor Trolleys	500
5	04 x 04 Jeeps with unlimited fuel	50
6	Excavators	15

Boats

Sr. No.	Item	Quantity
1	Fiber Glass Motor Boats (Flat Bottom) 19 ft (Army, Navy)	30
2	Fiber Glass Motor Boats (Flask Bottom) 24 ft	20
3	Out Board Engine Yamaha 30 hp	20
4	Out Board Engine Yamaha 40 hp	20

Miscellaneous

Sr. No.	Item	Quantity
1	Dewatering Pumps	30
2	Generators	35
3	Heli	02

Food Items

Sr. No.	Item	Quantity
1	Wheat Flour	333320 Kg.
2	Pulses	83330 Kg.
3	Edible Oil	83330 Kg.
4	Rice	83330 Kg.
5	Sugar	83330 Kg.
6	Salt	166660 Kg.
7	Tea	8333 Kg.
8	Red chili paper	8333 Kg.
9	Powder Milk	33332 Kg.
10	Cloth Soap	99996 No.
11	Bath Soaps	49998 No.

Non Food Items

Sr. No.	Item	Quantity
1	Tents	10,000
2	Plastic Sheets	20,000
3	Kitchen Sets	25,000
4	Hygiene Kit	25,000

Police Station Locations Near Vulnerable Areas

Sr. No.	Vulnerable Place	Mile	Area of Police Station
1	Nusrat Loop Bund	0/0 to 3/4	Hatri Ghulam Shah
2	Agani Akil Loop Bund	0/5 to 2/4	Keti Mumtaz
3	Akil Loop Bund	0/0 to 0/7	Keti Mumtaz
4	Abad Manguli	0/0 to 2/0	Hatri Ghulam Shah
5	Abid Maguli Extension	0/0 to 1/0	Keti Mumtaz
6	LS (Larkana-Sehwan) Bund	32/0 to 33/0	Veehar
7	LS Bund	18/0	Hassan Wahan
8	LS Bund	22/0 to 26/0	Hatri Ghulam Shah

**Irrigation Department – Drain and Water
Discharge Resources – Larkana and Surrounding Districts**

Sr. No.	Name of Drains	No. of Drains	RD	Actual Mile	Virtual Mile	Designed Discharge
1	District Larkano	20	326.50	65.30	79.80	519.55
2	District Kambar Shahdadkot	29	1119.60	245.30	282.98	1139.57
3	District Dadu	46	1118	226.40	259.67	2244.65
4	Grand total	95	2564.1	537	622.45	3903.77

Important Contact Details – Larkana District

Name of Office	Phone No.
Commissioner , Larkano	074-9410354
Deputy Commissioner, Larkano	074-9410384
Assistant Deputy Commissioner -1	0334-2249313 0333-7551232
Superintending Engineer (W&S), Larkano	074-9410776
District Education Officer, Larkano	074-9410519
Executive District Officer (Health) Larkano	074-9410711-23
Additional Deputy Commissioner-I, Larkano	074-9410329
District Food Controller Larkano	074-9410391
District Officer Social Welfare, Larkano	074-9410369
Additional Deputy Commissioner-II, Larkano	074-9410329-384-318
Assistant Commissioner Larkano	074-9410340
Mukhtiarkar (Larkano)	074-9410308
Mukhtiarkar (Ratodero)	074-4048404
Mukhtiarkar (Bakrani)	074-4300193
Mukhtiarkar (Dokri)	074-4080206
Taluka Municipal Officer Larkano	074-9410276-376
Taluka Municipal Officer (Dokri)	074-4080962
Taluka Municipal Officer (Bakrani)	074-4300188-89
Taluka Municipal Officer (Ratodero)	074-4048512

PART-V



IMPLEMENTATION STRATEGY AND PRIORITY PROJECTS

PREFACE

The preparation of growth strategies and development plans is easier compared to put in place a sustainable implementation mechanism, where stakeholders have knowledge of their roles and are eager to play the role in the business environment.

Public Sector:

Government, the public sector, affects all parts of business and investment environment. In all tiers the most important role of the public sector is to create conditions for productivity growth. The government needs to facilitate and encourage the private sector to feel tempted to invest and minimize risks on the investment. This includes development of infrastructure, meet the energy requirement, prepare policies, rules and legislation to regulate and protect investment, provide a friendly and conducive administrative step up for promotion and development of businesses and invest in the development of human capital by ensuring right kind and amount of investment in social sectors. The government also has a role to encourage local competition in business so that cartels and monopolies are not formed and equal opportunities are created for all, not just the few influential persons.

The government on its part has announced Sindh Industrial Policy 2010 which is a paradigm shift from the previous practices. The policy reiterates government intention to facilities private sector rather than competes with it in investment in industries and commerce; reduce controls and monitoring and a shift from “Low Tech Low Value” industries to “High Tech High Value” industries. Specialized financial institutions have been established with branches in Larkana to provide much needed financing for investment which include; Agricultural Development Bank (ZTBL), Small and Medium Enterprise Development Authority (SMEDA), Small Business Finance Corporation (SBFC) and Micro-Finance. Besides, all major commercial banks have branches in Larkana though obtaining business loans from them is quite cumbersome.

Development of physical infrastructure, a pre-requisite for economic growth and development, is largely a public sector responsibility. For specific physical infrastructure for industries, government has established Small Scale Industrial Development Corporation which has already developed a Small Industrial Estate in Larkana that has been fully utilized and need expansion. Besides, a 500 acre site has been allocated for an industrial estate on Airport Road which has not been developed since last five years.

Utilities and social infrastructure in the city is the responsibility of various provincial government departments who have local level offices / directorates to carryout development work in their own sphere of interest which includes; Roads and Works, Education, Health, Agriculture, Public Health Engineering, Vocational Training etc. Funding is allocated by the Planning and Development Department, Government Sindh but onsite coordination and monitoring is provided by the office of the Deputy Commissioner, Larkana. Besides, Larkana Municipal Corporation and Larkana Development Authority are responsible for operation and management of municipal services and local development schemes; respectively both these organizations are in a state of slumber at present.

Private Sector:

Private sector has the all important role to play in the implementation of growth strategies and development plan for investing capital and effort in producing goods and services that bring incomes and generates growth funds, improve quality of life and alleviate poverty. Private sector is all inclusive term, which includes individuals, families, farmers, business interests, industrialists, bureaucrats, informal and formal groups including non-governmental organization, politicians, traders etc. Private sector is always looking up to government for positive initiatives and has very sensitive antenna to sense potential gains and risks, and respond to it quickly.

Chamber of Commerce and Industries and Chamber of Agricultural are formal group of industrialists and farmers, respectively who provide important market feed back to the government policy makers, as well as, act as pressure group to obtain facilities and concessions from the government. The Chambers thus act as a bridge between policy makers and their members representing business interest group. Their involvement in the planning process as the major stakeholders is important and thus has been achieved at various stages in the preparation of this Report.

10. PROJECT DESCRIPTION AND BACKGROUND

10.1 Overview

In order to realize the development potential of urban Sindh, Government of Sindh has established the office of Directorate of Urban Policy and Strategic Planning (DUP&SP) in the Planning and Development Department. Recently, DUP&SP has endeavored to carry out preparation of Urban Growth Strategy and Development Plans so that public investment decisions in socio-economic and physical infrastructure sectors of secondary cities of Sindh are made on a rational basis. In this regard, the cities of Larkana and Sukkur have been identified as the priority cities for the preparation of Urban Development Strategy. The time horizon of the Urban Development Strategy is next 20 years i.e. 2013-2033. M/s EA Consulting (Pvt.) Ltd. has been awarded the project for the “Preparation of Urban Development Strategy for Larkana”.

The planning concept for preparation of a suitable urban development strategy for Larkana stemmed over a period of time from the realization that urban centers are hubs for economic growth and they also act as service centers for surrounding areas. Seen in global and regional context there is rapid increase in urbanization across countries in Asia where 20% of population lived in cities during 1960s. This proportion increased to 30% in 2003 and projected to go up to 55% by 2030¹⁶. If cities are to be transformed into ‘engine of growth’, they need reliable power supplies for industry, agriculture, commerce, manufacturing units, potable water supplies to the residents, efficient sewerage & drainage system to dispose of waste & gray water as well as to have adequate transport facilities for mobility of individuals and goods without polluting the city environments¹⁷. Above all cities need sufficient serviced land for housing the additional population and infrastructure development.

10.2 Summary of Main Features of Development Strategy

- The agricultural economy to be strengthened
- Agricultural potential in rice, oilseed and guava to be fully exploited.
- Agro based industries and allied industries to be facilitated.
- Additional small industries areas to be developed adjacent to the exiting one.
- Acceleration of the development of 500 Acres Industrial Estate at Airport Road.
- Exploitation of full tourism potential of MJD ruins and development of facilities (hotels, restaurants, conference centre, parks, souvenir shops etc.).
- New schools to be added to meet the present requirements upto 2013.
- Skill Development and Vocational Training Institutes are needed for less privileged population to increase job opportunities.
- Health facilities are generously provided; operational efficiency needs to be improved.
- Road network has additional capacity: traffic management needs to be improved.

¹⁶ City Cluster Development Report by ADB, August 2008

¹⁷ Tiwari, Geetam 2002, Urban Transport for Growing Cities: High Capacity Bus Systems, New Delhi, Macmillan.

- Old city areas are over-congested. Long term measures for decongestion to be taken.
- Building control to be exercised more efficiently specially in parts of UC-8 and UC-5.
- No reconstruction with large foot print and / or height to be allowed in UC-8 and UC-5
- Developed land for more than 3000 housing units is available in different public/private schemes. Measures should be taken to expedite construction on them.
- Addition housing schemes for different income groups should be initiated on vacant land in UC-1 UC-2 and UC-11.
- To discourage growth of katchi-abadies, land for incremental housing may be provided in UC-2 close to the industrial area.
- The hawkers encroaching main roads, should be removed to alternative locations.
- Traffic circulation on inner city roads may convert to uni-directional flow.
- The Qingqi traffic may be regulated. Urban bus transport system may be revived on major roads.
- The railway line has strategic alignment through the city. It may be utilized for urban rail transport.
- Safe water supply scheme may be revived to supply piped and safe water to Larkana in phases.
- The existing sewerage system with sewage treatment may be extended to the whole town in phases.
- Solid waste management may be outsourced to a private organization.
- NSUSC should be made independent in terms of funding and manpower so as not be dependent on TMA. Otherwise it is has failed to perform and should be disbanded.
- Airport road is gaining importance for urban development. It should be planned for ribbon development, with a special institutional arrangement.
- The VIP road with large open areas may be redeveloped as urban renewal and a new town centre may be developed in medium to long term.

10.3 The Project Area

The Urban Development Strategy for Larkana plan has been prepared to highlight opportunities and guidelines that would drive future development of Larkana City. The area delimitation of this plan comprises all rural and urban settings laying inside Larkana City's Municipal Boundary.

11. POTENTIAL URBAN DEVELOPMENT CHALLENGES AND RISKS

Most of the urban problems faced by Larkana city are due to bad governance or lack of governance. Larkana has grown in population and acquired all the complexities of urbanization such as migration, congestions, ethnic mix, lack of housing and infrastructure and a vocal society more aware of their rights than their obligations.

Unfortunately, governance institutions and administrators in Larkana has not acquired the maturity to perceive the complexity of urban problems, much less to proactively manage them. It is not possible to solve urban problems with rural mind sets.

In Larkana, the governance framework and institutions are practically subservient to the local political leaderships who have strong influence on postings and transfers of bureaucracy as well as allocation and utilization of funds. The political affiliations create pressure groups that thwart efforts for good governance, a phenomenon which is abundantly clear in the poor building control, encroachments, incompatible land uses and ineffective rehabilitation of urban infrastructure. Despite existence of local government institutions, relevant bylaws and regulations and previous master plans, Larkana today looks like an almost ungoverned city except in small patches where large government projects and functionaries are located.

The other major problem with respect to governance is O&M funds for recurring expenditure. Larkana has produced politicians of very high national stature. It is therefore not surprising that high profile mega projects are conceived and implemented here with steady flow of development funds, after ignoring much needed basic level projects.

However, the required funds for operation and maintenance are not allocated to the concerned authorities resulting in poor up keep or at times, deterioration. Nowhere, this phenomenon is more obvious than in the case of Larkana Development Package as projects completed under this package are already in poor condition of repairs. On the other hand the local administration does not find enough funds even for desilting of drains which are now choked and will not be able to drain rain water from the city, if there are heavy rains in next monsoon.

The local bodies as per the Sindh Local Bodies Act 2014 seem to have ample autonomy and opportunities to raise funds for them. However, in practical terms they are largely depended on provincial government in allocation of their share of funds. The release of funds is also erratic most of which comes with substantial delays. According to the Administrator, Larkana Municipal Corporation, their funds are not sufficient even for the payment of monthly salaries to the janitorial staff. The Local Bodies Act authorizes the municipal corporations to raise funds through various fees, levies and activities. It appears that the LMC staff has neither the motivation nor the capacity to organize the fund raising activities. Moreover, only a fraction of collectible mandatory fees and levies gets into the official coffers as the pilferage is reported to be common.

At present there is a very loose framework for the governance in Larkana due to the absence of local bodies. A multitude of agencies are responsible for the development and maintenance of urban services loosely coordinated by the Deputy Commissioner. Local Bodies elections are expected to be held sometimes in 2014. After the elections, when local bodies are established, the *Nazim* will be in-charge and various development agencies will be reporting to him directly or through District Coordination Officer. However, not much improvement is expected unless the capacity of the local bodies is increased and the elected representatives are aware of their responsibilities. We suggest that training programmes and presentations may be arranged for the local representative and official to make them aware of the development plan and strategies and get their commitment for the planned development. UDSDL has suggest the following measures are required:

1. Training of elected representatives, directed towards understanding their role as initiator of development.
2. Motivation of elected representative to understand the urban problems faced by residents and act in cohesion, above their political affiliations, to solve them. They will get public vote anyway if they make people feel better off.
3. Training of Municipal Corporation and Development Authority staff to increase their capacity.
4. Transfer of funds of completed projects approved in the PCI form under ‘annual recurring expenditure’ to the local agencies responsible for the O&M.
5. Encourage the LMC to generate funds from all authorized sources be to self- sufficient and sustainable. No governance is possible at local level without being sustainable

12. URBAN DEVELOPMENT STRATEGY LARKANA

Urban Development Strategy Larkana, prepared by the EA consultants in coordination Urban Unit, office of Directorate of Urban Policy & Strategic Planning, P&D Department, Government of Sindh, has proposed variety of development proposals pertaining various utility sectors aims to manage the future growth of city by 2033. This strategy aims to provide improved utility infrastructure services to projected population of city, approximately 854,000 residents, upto 2033.

12.1 Development Vision

The vision craved out for future growth of the city states that

' Restore past glory of Larkana as 'Eden of Sindh' and develop it on most modern urban development principles to be a clean, green, environment friendly, sustainable and most livable city in the northern Sindh and guide it to grow as the regional centre of economic production, infrastructure and social services. The human capital of the city to be developed in response to the governance, socio-economic and urban development needs of the city and the region.'

The Urban Development Strategy Larkana has identified various present day urban issues faced by Larkana city and briefly described how an improved metropolitan city will be delivered to create live able communities, business prosperity, housing choice, job opportunities and a sustainable natural environment.

12.2 Objectives

In accordance with the vision UDSL- 2033, the long term objectives of the development strategy are spelled out as follows:

1. Infrastructure is like veins and arteries of urban body. Adequate, well maintained and smooth flowing infrastructure is a must for the healthy life of the city and its citizens.

The objectives in this regard would be:

- Have 100 percent underground piped sewerage system for the city with localized treatment plants and re-use of treated affluent.
- The sewerage and storm water system will be separate in the existing and future planned areas, but for the congested old city areas where streets are narrow, combined sewerage and drainage system may be acceptable.
- Despite Larkana having flat topography, with proper comprehensive sewerage system design, including localized treatment plants, the number of pumping stations will be reduced resulting in reduced O&M costs and increasing the sustainability of the system.
- Safe water supply is of prime importance. Larkana at present has no piped water supply system. Therefore quality of water at the users' end cannot be monitored. The entire population of Larkana should be covered by piped water supply in phases.

- The geometrical disposition of road network needs some adjustments. Except in the old town (UC-8 and eastern part of UC-5) the road widths are adequate but encroachments have reduced the road capacities causing traffic congestions. The district administration should firmly remove all encroachments and ensure smooth flow of traffic. The hawkers should be relocated in specially designated hawkers market.
2. The decongestion of the old city areas will be achieved with planning for commercial and business centres outside the old city.
 3. Housing is the basic human need. The long term objective will be to provide housing for all the additional population falling in different income groups. While housing for high and middle income groups may be left to the private sector, the government has to facilitate housing for the low income group. For the “poorest of the poor”, areas will be earmarked for “Incremental Housing”.
 4. Larkana need to grow economically to provide incomes and jobs to the growing population. Rice, mustard and guava are identified as the potential in agricultural growth and rice processing, oil expelling, fruit processing and packaging etc., have potential for agro-industrial growth. All efforts will be made to achieve higher yields, better processing, marketing and export facilitation and infrastructure development for industrial growth.
 5. Governance should be improved to make it more effective and sustainable in terms of development control and quality of municipal services. Multitude of agencies, at present, concerned with the urban development, need to be brought under one point monitoring (The present chaotic situation expected to be improved with the installation of local bodies).
 6. Health and educational facilities will be rationalized as presently there is too much emphasis on tertiary health facilities and higher education and the whole hierarchy is too heavy.
 7. Larkana being a regional health service provider should increase hospital bed ratio from 1 bed / 1000 population at present to 2 beds / 1000 district population by 2033, in order to achieve standard NRM.
 8. In the field of education, the city is targeted to attain 100% enrolment upto secondary level with 1:1 male: female ratio by 2033. In short term plan, city needs to increase number of class rooms to cover current enrolment and provide training institutes for less privileged population.

12.3 Target Areas

UDSL aims to bring major metamorphosis through variety of urban development/redevelopment strategies to present day Larkana City. The future development proposals and associated policies regarding improvement of infrastructure services, housing provisions and various utility cover almost all parts of City. However, with respect to this strategy, the areas of concentration are located in UC-1, UC-2, UC-5, UC-8, UC-11 including Airport Road corridor which lays outside present municipal boundary in south ward direction, towards ruins of Mohan-Jo-Daro, of city.

12.4 Land Acquisition for Development

Urban redevelopment or regeneration have worldwide recognition of its complexity and require solid policy guided solutions. There are trends and common characteristics revealed by a number of development project case studies in Pakistan. The unprompted urban development is associated with it identified key risks such as: Landlessness, unemployment, homelessness, marginalization, food insecurity, and loss of access to common property resources, morbidity and social disarticulation.

Urban development/ redevelopment projects are critical in terms of their negative externalities in which efficient governance is the major weakness of local governance agencies. Thus, project proponent needs to ensure that the impediments for effective urban governance must be addressed with smart development managers capable of applying proper constitutional frameworks.

Impoverishment of displaced business and people is the central risk in development control process. To encounter this central risk, protecting and reconstructing communities' livelihood and income resources is the central requirement for equitable development programs. Empirical evidence shows that, more often than not, the risks of impoverishment and social disruption turn into a grim reality.

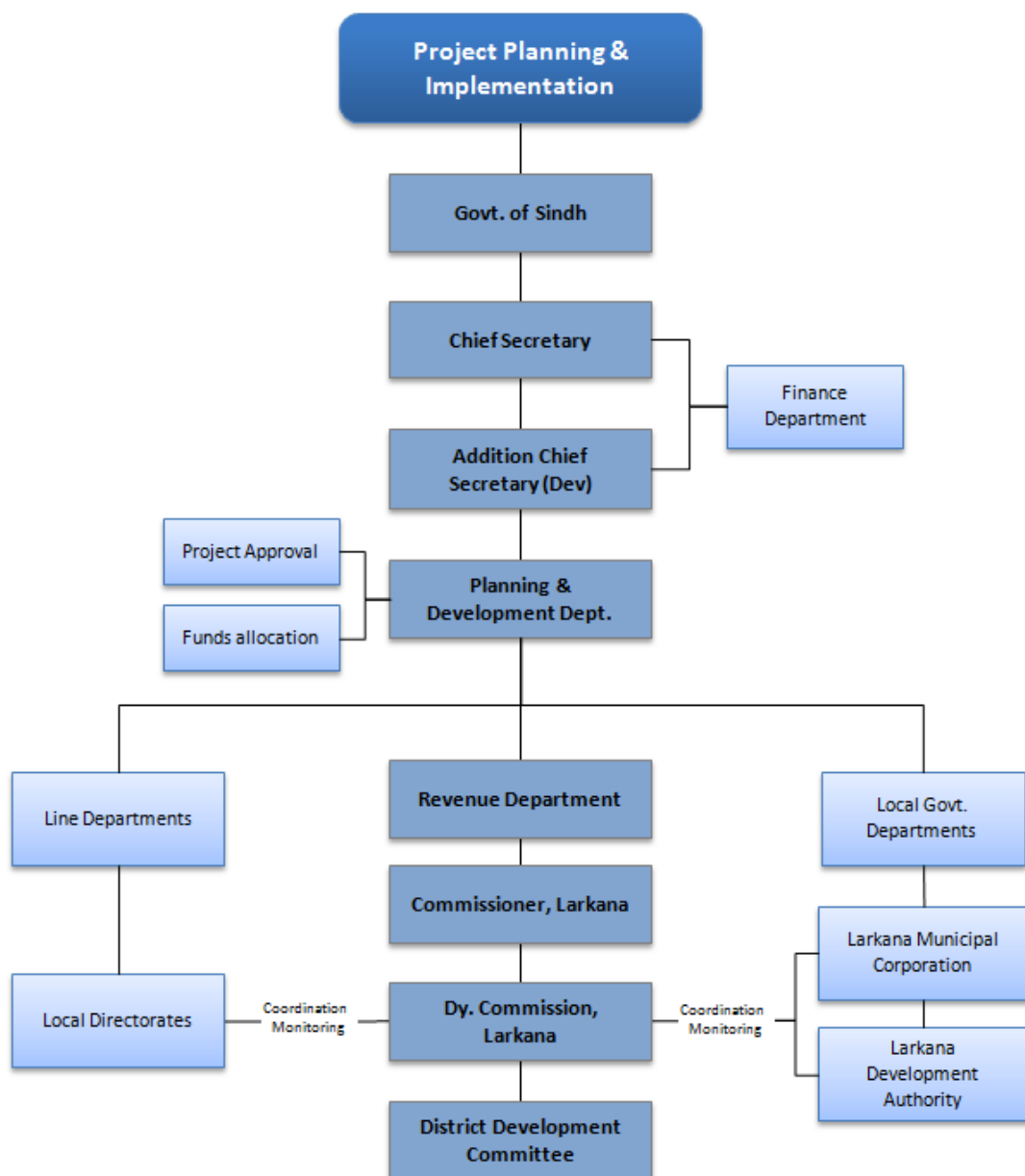
There needs to be evidence that these risks have been assessed by the local governance authorities as applicable for the specific proposed projects in Larkana and corresponding mitigation measures/ restoration measures need to be taken prior to implementation.

12.5 Institutional framework

It is the responsibility of city governance authorities, in collaboration of respective Provincial/ State government to implement the plan since it is the basic responsibility of city government to rebuild city ease of communities.

In Sindh, in the absence of Local Bodies elections, the local governance is in disarray. The situation will crystallize once local bodies are in position by the end of the year 2014. The governance at present is focused on the office of Deputy Commissioner, who in case of Larkana is also the Project Director of Larkana Development Package. The Sindh Local Government Act, 2014 has been recently promulgated and local bodies elections are expected to be held soon.

URBAN GOVERNANCE GENERIC ORGANOGRAM



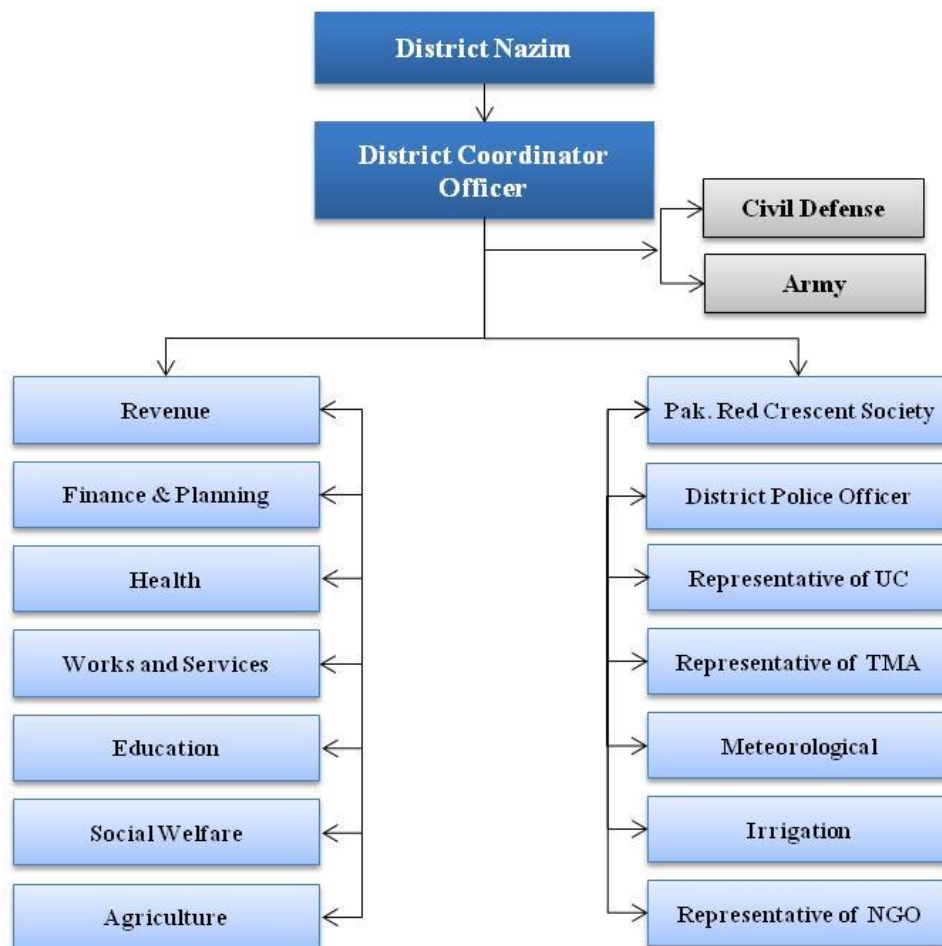
Local Governance composition may change once the local bodies will be elected by the government of Sindh. Under the previous devolution system Larkana's, being the district headquarter of Greater Larkana District, governance and administrative operations were operated by distributing the juridical boundary of city into tehsils in its revenue set up. Under this institutional setup, Larkana's government setup was administratively managed through Union Councils in the district government setup. The administrative set up of the district government in this setup is composed of following tiers:

a) Office of the Zila Nazim

Office of the District Coordination Officer followed by 09 groups of officers namely Revenue, education, Finance & Planning, Works & Services, Agriculture, Health, Education, Information Technology and Law.

b) Zila Council

Besides, there are sub tehsils in Municipal Administration.



12.6 Efforts to be taken by Project Proponents

Although the D.G UP&SP makes an effort to involve the stakeholders in planning process to take their commitment which is not as the ownership and only results in the lukewarm support in the implementation. The town planner at the local level should be fully involved in planning process by D.G UP&SP to continue the policy vision derive implementation of urban plans. The office of D.G UP&SP should take the responsibility for the notification of plans by the provincial government after legal framework. The most important element is the appropriate implementation of the plan in the presence of *Town Planners* in every TMA and their empowerment by the local government.

12.7 Development Planning

The development planning as such is concentrated in the P&D Department with inputs from the line departments. The whole process is based on sectoral lines with no regard to the project interdependencies in a spatial context. Projects are conceived basically on sectoral requirements or political pressure on province wise basis, and listed out in the annual development programmers according to administrative jurisdiction of provincial government's field offices. When the urban plans have been prepared and duly notified, it is important that the projects for the ADP and midterm plans should be taken off from the approved urban plans which will provide more effective and balance development in a spatial context. The P&D Department should give serious consideration while approving projects that the project under approved is in consonance with the urban plan.

13. IMPLEMENTATION STRATEGY

This part of the report aims to provide an implementation framework for various development proposals recommended in 'Urban Development Strategy' to drive future growth of Larkana City up to 2033, under the present governance framework of Government of Sindh.

13.1 Process of Implementation

The implementation of development plan is basically the process of prioritizing, phasing, coordinating, budgeting, scheduling, monitoring and making adjustments. Issues that must be addressed in this regard are:

- a) Determine priorities within and among the sub plans
- b) Determine the phasing or sequence of activities within among the sub plans.
- c) Address costs, timeframes, and budget availability
- d) Creating master schedule of activities with a progressive cost table so that the program can be appropriately expanded or contracted to meet implementation contingencies and budget fluctuations.
- e) Assign the various activities to be undertaken by qualified managers.
- f) Establish a timely monitoring and report system to keep the city officials and the public informed of progress and activities.

There are number of management systems and charting procedures available to help a city manager to control this process. The important requirement is that the implementation method should be effective to manage activities, timeframes, costs and interrelationships. It must also be a method that all participants can use and once adopted it must be used consistently, e.g. Critical Path Method (CPM) etc.

13.2 Implementation Agency

The office of district deputy commissioner or in case of local bodies' government the office district coordinator officer (Zila-Nazim) will be the key implementation agency to execute Urban Development Strategy Larkana 2033. Either of the offices mentioned above, working under auspices of government of Sindh, by utilizing its maximum resources and by engaging various lines departments offices of government of Sindh established in Larkana, would take responsibility of implementing various development proposals highlighted in previous chapter of this report. The concerned agency must ensure that the overall process must go after following themes of implementation process.

a) ***The overreaching theme of the implementation of Urban Development Strategy Larkana is:***

- Consultation with stakeholders during implementation at all levels.
- Decentralize decision making to the greatest extent possible.

- Promote transparency and accountability of decision making and implementation enforcement.
- Rationalize impacts where necessary;
- Ensure compensation to affected communities
- Enhance the quality of infrastructure provisions, promote utility services opportunities, and focus facilitating poor segments of society.

b) The principals that implementation process will follow:

- The overall implementation process to be carried out in coordination with Town Planning and Urban Development Standards (Frameworks) in which redevelopment will be phased to prioritization;
- The implementation process will be based on updated planning codes and regulations;
- Special consideration will be paid to implement planning standards relating to disaster preparedness in all development proposals/projects;
- Facilitate communities, government machinery, and other organizations of community to participate in overall implementation process;
- Educate stakeholders for technical assistance;
- Be comprehensive, coherent, and coordinate to avoid errors through continuous monitoring and evaluation
- Arrange supply of financial resources

13.3 Legal Frameworks

Local governance agencies dealing with any development proposal must ensure that all development related activities and their approval consent should be carried out in accordance with urban planning statutory frameworks of government of Pakistan operational at all government level levels. This includes all legal frameworks substantiated through the relevant articles of constitution of Pakistan and the primary act (LAA 1984) governing land acquisition and compensation.

a) National Level Policy Frameworks

The constitution of the Islamic Republic of Pakistan passed on the 10th April 1973 and as modified thereafter, is the supreme law of Pakistan Government. This constitution provides legal cover to all laws and acts, particularly those embedded in chapter-3 pertaining with land acquisition, development and compensation.

b) State level Statutory Frameworks pertaining to planning and development Control

On 14th Feb 2011, the government of Sindh notified the extension of the jurisdiction of Karachi Building Control Authority to the whole of Sindh. The five Regions of Sindh Building Control Authority notified by the Government of Sindh are: **Karachi, Hyderabad, Mirpurkhas, Sukkur & Larkana**, having the Head Quarter **Karachi**. Thus, any development activity within juridical boundary of these districts must be

carried out in accordance with the primary planning instrument ' *Sindh Town Planning and Building Control Regulation* '.

c) *Local Planning Instruments*

There is variety of regulations dealing with municipal services offences and penalties (Fines) in case of violation have been constituted in Schedule-VI (Section 139) 'Offences under the Act' Part-1 of Local Government Act-2013 of Sind Government.

In this regulation, various well defined public activity management and control regulations dealing with *Public Health Safety, Development Control, Encroachments, Protection of Drinking water, Solid Waste & Waste Water* generating through multiple activities, *Open Space* management and associated penalties, in case of violation, have been defined in detail.

d) *Other relevant planning and design standard instruments*

There are varieties of other documents that support assessment of development proposals prior to implementation. e.g. 'National Reference Manual' - *Ministry of Housing and works, Environment and Urban Affair Division*, etc.

If a regularization requirement of any of development proposal is beyond the capacity of regularity frameworks mentioned above, the concerned agency dealing with development/implementation process in Larkana may develop their own regulatory frameworks/ building code's to regularize the status of development with consent of local/provincial government authorities, if necessary.

13.4 Institutional Enhancement

While implementing the UDSL, the respective government development authority/municipal corporation/ office of commissioner/deputy commissioner or district coordinator officer may seek technical assistance from all line department or provincial government of Sindh in form of a '*Urban Management Unit*' temporally instituted within the respective governance agency. The '*Urban Management Unit*' will mainly consist of urban planners supported by other technical staff; architects, project managers, engineers, finance officers and any other technical staff expert in their relevant fields.

The '*Urban Management Unit*' shall supervise and coordinate respective urban developers involved in development activities, conduct monitory audits, preparer evaluation and impact reports and will report to the head of respective governance agency.

Development authorities will be responsible for implementing new approved town planning and building codes with the assistance of office of head of respective governance agency. The office

of district coordinator will be responsible for the overall coordination and monitoring and will provide support for development/redevelopment activity from federal to district level.

The district Urban Management Unit would also facilitate the office of district coordinator/ deputy commission for all development/ implementation related (a) needs identification (b) revision of annual plans (c) coordination (d) financial management and (e) monitoring of all development activities assigned to developers or government departments.

14. IMPLEMENTATION SCHEDULE

<p>Strategy:</p> <p>Balanced Urban Growth</p>	<p>Programs/ Policies</p> <p><u>(A) Densification within UC boundaries</u> Land Use Zoning Urban regeneration of UC 5 with emphasis on new culture based recreation opportunities. Development of Medium Density Low Income Housing in UC-2 Development of Medium Density Housing in UC-4, UC-6, UC-7, UC-9 and UC-11</p> <p><u>(B) Decongestion specially in the old city area</u> Development of low density low income housing in UC-2</p> <p><u>(D) Development Control</u> Amendment in Zoning Bye laws Restrict the provision of utility services for approved planned areas Peri-Urban Land use control Vertical growth options</p> <p><u>(E) Land Banking</u> Regeneration of empty land parcels UC-5 & UC-3 for new housing stocks</p> <p><u>(F) Air Port Road Regeneration</u> Zoning master plan for Airport Road Regeneration</p> <p><u>(G) Ring Road</u> Completion of New Ring Road in eastern ward of the city</p>
<p>Responsibilities to Plan:</p> <p>Detailed Urban Design Strategy Development Assessment Impact of property Assessment Environmental Impact Study (EIA,IEE)</p>	<p>Implementation Responsibilities:</p> <p>Public Sector/ Private developers</p>
<p>Concerned Agencies:</p> <p>P & D Department Government of Sindh/ District Government/ Line Departments of local Government /Private Developers</p>	<p>Time of Implementation:</p> <p>Short Term (6 months to 2 Years) Medium Term (1 year to 5 Years) Long Term (5 years to 20 Years)</p>

<p>Strategy:</p> <p>Future Transport Sector Development & Improvement</p>	<p>Programs/ Policies</p> <p><u>(A)Traffic Management Program</u></p> <ul style="list-style-type: none"> • Parking restrictions / Charged parking system • Control traffic movement specially Qingqis and Pick-ups • Manage unidirectional traffic flow. • Enforcement of traffic rules • Improved road infrastructure and street furniture <p><u>(B) Mass Transit System Development</u></p> <ul style="list-style-type: none"> • Utilization of existing railway line for mass transit purpose • New BRT System • Development of New Bus Bays <p><u>(C) Congestion Reduction in Old CBD Area</u></p> <ul style="list-style-type: none"> • Designated stands for qingqi / richshaws • Specified spaces for charged parking system • Alternate route for loading and unloading vehicles • Unidirectional traffic flow pattern • Removal of encroachments from major distributors • Development of infrastructure for pedestrian movement in old precinct.
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • Enforcement of encroachment and road space improvement byelaws • Traffic corridors detailed study • Encroachment Removal & Relocation Study • On Street & Off Street Parking Feasibility Study • Urban Design Study for Improved Street Design. • BRT/ Rail based transit feasibility studies • Urban Design Strategy and EIA for Mass Transit System development 	<p>Implementation Responsibilities</p> <p>International Development and Fund Supporting Agencies/Public Sector/ Private developers</p>
<p>Concerned Agencies Provincial Works & Services Department Government of Sindh./ District Highways Department/ Local Municipal Government/District Government/ Private Developers Line Departments of local Government including LMC, LDA</p>	<p>Time of Implementation</p> <p>Short Term (6 months to 2 Years) Long Term (5 years to 20 Years)</p>

<p>Strategy:</p> <p>Water Supply System Improvement</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • In the long term, piped water supply system for 100% population by 2033 • Installation of localize network in the planned housing schemes first and gradually cover the whole population in five year plans. • Reuse of treated effluent • Introduce Tariff System for utilities through Water Metering (first for water usage above marginal consumption then in long run for all users). • Comparative analysis study for surface and ground water quality and quantity for detail assessment of appropriate water source.
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • Need Assessment/Demand & Supply Study • New Master Plan for water utility services improvement. 	<p>Implementation Responsibilities</p> <p>Public Sector/ Private developers</p>
<p>Concerned Agencies</p> <p>State Government/District Public Health Department/ Local Government/ NSUSC.</p>	<p>Time of Implementation</p> <p>Short Term (6 months to 2 Years) Long Term (5 years to 20 Years)</p>

<p>Strategy:</p> <p>Drainage & Sewerage System Improvement</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Implementation of Larkana Drainage Master Plan prepared under SCIP Consultants. • Combined system of sewerage and drainage (Phase-wise approach of replacing open drains with covered sewers of PE pipes). • Decentralized of wastewater treatment plants. • Recycling wastewater.
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • Need Assessment/Demand & Supply Study • New Master Plan for Drainage & Sewerage services improvement. 	<p>Implementation Responsibilities</p> <p>Public sector / Private developers</p>
<p>Concerned Agencies</p> <p>State Government/District Public Health Department/ Local Government/ NSUSC.</p>	<p>Time of Implementation</p> <p>Short Term (6 months to 2 Years)</p>

<p>Strategy:</p> <p>Solid Waste Disposal System Improvement</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Immediate designation of Sanitary <i>Landfill Site</i> with special attention for hospital waste disposal. • Soil investigation and ground water level surveys for the selection of Sanitary Landfill site. • Collection and disposal of solid waste through specialized waste management companies.
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • Disposal Generation Assessment Study • New Master Plan for Solid Waste Disposal System improvement. 	<p>Implementation Responsibilities</p> <p>Public / Private Sector</p>
<p>Concerned Agencies</p> <p>State Government/District Public Health Department/ Local Government/ NSUSC.</p>	<p>Time of Implementation</p> <p>Short Term (6 months to 2 Years)</p>

<p>Strategy:</p> <p>Improving NSUSC's Efficiency</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Acquire the required additional sanitary workers as per requirement. • Make NSUSC self sufficient • Strengthening NSUSC's Financial Capacity • In long term introduce 4R Solid Waste Management System (reduce-reuse-recycle-reject)
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • NSUSC Progress Assessment Study • Solid Waste Management System Efficiency Study 	<p>Implementation Responsibilities</p> <p>Public / Private Sector</p>
<p>Concerned Agencies</p> <p>State Government/District Public Health Department/ Local Government/ NSUSC.</p>	<p>Time of Implementation</p> <p>Short Term (6 months to 2 Years)</p>

<p>Strategy:</p> <p>Improving Fire Fighting Capacity</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Establishment of five sub-stations to accommodate ten fire vehicles more. • Establish sub-stations at different locations to ensure short response time for the whole city. • Increase service efficiency through number of vehicles, dedicated staff and financial mechanism. • To ensure readiness of all vehicles with ample stocks of POL and spares.
<p>Responsibilities to Plan</p> <p>Assessment on LMC's fire fighting potential</p>	<p>Implementation Responsibilities</p> <p>Public Sector</p>
<p>Concerned Agencies</p> <p>District Government/Larkana Municipal Corporation.</p>	<p>Time of Implementation</p> <p>Short Term (6 months to 2 Years)</p>

<p>Strategy:</p> <p>Energy (Gas, Electric Power, Energy Generation through Alternate Resources)</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Development of alternative energy resources such as wind, solar and bio-gas etc. • To Improve existing infrastructure of WAPDA • Strengthening financial capacity of WAPDA • Solar street lights project • Energy generation through solar panel system for residential and commercial purpose.
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • Demand and Assessment of various energy resources. • Larkana alternate energy generation technical report. • Larkana solar panel based energy generation assessment system feasibility study. • Larkana solar street light rehabilitation study. 	<p>Implementation Responsibilities</p> <p>Public/ Public Private Partnerships</p>
<p>Concerned Agencies</p> <ul style="list-style-type: none"> • Sui Southern Gas Company Larkana • WAPDA • Private Companies 	<p>Time of Implementation</p> <p>Short Term (6 months to 2 Years)</p>

<p>Strategy:</p> <p>Health Sector</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Establishment of New BHU's. • Addition of 4,300 beds to achieve the target of 2 beds per 1000 district population • Hiring of 199 new doctors, 50 nurses and 23 paramedical staff. • Maintenance of existing incinerators in Chandka Medical Hospital. • Provision of incinerators in all main hospitals.
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • Larkana Health Provisions Improvement Master plan 	<p>Implementation Responsibilities</p> <p>Public Sector</p>
<p>Concerned Agencies</p> <p>State Government/District Health Department.</p>	<p>Time of Implementation</p> <p>Short Term (6 months to 2 Years)</p>

<p>Strategy:</p> <p>Education Sector Strategy</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Short term plan provision of 963 classrooms at different levels • Repairing of existing buildings • Training of teaching staff • 4,900 additional classrooms by 2033 • New schools and colleges for estimated population of 158,000.
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • Larkana Education Infrastructure Improvement Mater Plan 	<p>Implementation Responsibilities</p> <p>Public Sector</p>
<p>Concerned Agencies</p> <p>State Government/Local Education Department Larkana.</p>	<p>Time of Implementation</p> <p>Medium Term (1 year to 5 Years)</p>

<p>Strategy:</p> <p>Improving Recreation Sector</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Repairing of existing recreational facilities and completion of under construction work. • Introduce financial mechanism (like charging fee) for public parks and playgrounds to make them self sustaining. • Special arrangement for security, parking and alternate route during religious and cultural activities in the city. • Revitalization of existing Cinemas (conversion to mixed use building i.e. shopping and entertainment). • Provision of touristic facilities for Moen-Jo-Daro. • Encourage Private Investment in recreational sector (revitalization of existing cinemas and provision of touristic facilities in MJD) • Provide city scale Zoo and Amusement Water Park facilities for future, possibly on the Airport Road.
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • Larkana Recreation Provisions Improvement Master plan 	<p>Implementation Responsibilities</p> <p>Public Sector</p>
<p>Concerned Agencies</p> <p>District Government/ Provincial Buildings Department Government of Sindh /Line department of government including LMC/TMA/Forestry Department GoS.</p>	<p>Time of Implementation</p> <p>Medium Term (1 year to 5 Years)</p>

<p>Strategy:</p> <p>Disaster Risk Management</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> Engage all stakeholders of entire district in overall disaster rehabilitation process. Recognize the commitment of stakeholders and the need for collaboration across all levels of government, community, industry, commerce, and government owned corporations, private and volunteer organizations and local communities within all aspects of disaster management. Aligned job responsibilities of key stakeholders with job descriptions mentioned in principal guidelines proposed in <i>Pakistan National Disaster Risk Management Act 2010</i>, <i>National Disaster Risk Management Guidelines</i> and <i>Disaster Risk Management Plan, Sindh</i>. Ensure establishment of straight relationships, trust, teamwork, consultative decision-making and shared responsibilities among stakeholders. Develop disaster risk assessment system through statistical information, risk maps, emerging hazards information and their affects. Adopt measures of sustainability of local communities by utilizing local resources available to avoid post disaster cataclysms (dearth, theft, spread of epidemic diseases, etc). Promote economic sustainability after disasters.
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> Development of Community Training and Drill Organization Manual and SOP. Development Local stakeholders Roles and Responsibility SOP. 	<p>Implementation Responsibilities</p> <p>Public Sector</p>
<p>Concerned Agencies</p> <p>P & D department Gos/ SUPARCO/ Provincial Irrigation Department Gos/ Line departments of local government including Larkana District Disaster Management Authority.</p>	<p>Time of Implementation</p> <p>Short Term (6 months to 2 Years)</p>

<p>Strategy</p> <p>Local Economic Development</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Rehabilitation of Infrastructure in existing Small Industrial Estate (roads, street lights, parking for loading/unloading goods vehicles, etc.) • Increase strategic storage through construction of cold storage / Godowns for agro products. • Extension of Small Industrial Estate on western side to meet the additional demand. • Provide good incentives near peripheries for shifting / re-location of whole sale markets from the inner city to reduce congestion. • Prepare zoning plan for the area along Moen-jo-Daro Airport Road for control of Development. • Expedite development work of Larkana Industrial Estate in Arija through phase wise infrastructure development in next five year. • Encourage Local Private Investors by giving them subsidies. • Consider changing trends of crop production through periodically revise Economic Policy Framework (feasible studies for economic potentials) • Ensure measures for security / risk recovery plan for economic zone. • Market and logistics should also be added to enhance trade and commerce. • Livestock and dairy sector needs to encourage and facilitated. • Relocation of wholesale markets is needed to create connectivity with regional markets.
<p>Responsibilities to Plan Feasible studies for economic potentials</p>	<p>Implementation Responsibilities Public /private developers</p>
<p>Concerned Agencies Provincial Government/District Government/Local Government/Larkana Chamber of Commerce and Industries/Larkana Chamber of Agriculture.</p>	<p>Time of Implementation Medium Term (1 year to 5 Years) Long Term (5 years to 20 Years)</p>

15. SHORT TERM ACTION PLAN (2013-2018)¹⁸

With existing population of 460,000 the city of Larkana would accommodate additional population of approximately 77,000 (medium growth scenario) residents by 2018. Assuming a household size of 7.37 and an average of 10 plots per/acre with 1.5 dwelling units per housing unit, the planned gross residential density works out to 110 persons per acres. The total demand for additional land by 2018 for housing thus works out to 700 acres, to accommodate 10,500 dwelling units. The vacant land available in various union councils is sufficient to meet this housing demand and there should be no need to use the agriculture land outside the urban UCs boundary until 2033.

The replacement of dilapidated housing stock and squatters is not taken into account as dilapidated housing will be improved/reconstruction on the same land with the inter play of market forces. The squatters will be accommodated in the affordable incremental housing schemes.

The housing conditions in the old city are far from satisfactory due to congestion, lack of sanitation, ill maintained buildings and mixed land uses. However, the old city caters to all income groups except the high income group. As a result poor and low income families have no option but to go to the Katchi-Abadies mostly squatting on government or hazard prone land.

This short term plan focuses on rehabilitation, aims improvement in utility services. In this span of time, attention has been paid to resolve chronic issues of the city and to improve infrastructure quality of basic utility provisions of the city.

In short term development strategy, following improvement works (projects) has been suggested for 2013-2018:

15.1 Transportation

Most commercial and public institutions are located in UC-8 and UC-5. These are also the areas where most traffic generating functions are located, therefore extreme congestion is observed on roads serving these area which include Station Road, Bandar Road, Jalius Road, Ghanti Phatik, Civil Hospital Road, Ladies Jail Road etc. Concentration of colleges, schools, hospitals, private clinics and retail shops make the traffic flow at snail's pace and there are long hours of traffic jams. The available road widths are narrow, because road sides are encroached by traders, illegal hawkers and haphazard parking of cars, vans and loading vehicles (motorized / animals driven). The options available for solving these problems are:

Theoretically there are several options:

- 1- Widening Roads which may involve resistance and heavy land acquisition cost (ultimately even the wider road will be encroached).

¹⁸ Updated status is given in Addendum page no. 38

- 2- Removal of encroachments and hawkers (this is a management issue but there will be resistance and political interference).
- 3- Making unidirectional traffic flow on some of congested roads with appropriate inter-linkages to discourage tendency to cut short and go against the flow (also a traffic management issue).
- 4- Exploring alternate routes to relieve congestions.
- 5- Relocating some of the high traffic generating function in the less congested areas.

In the immediate phase, concentration should be on removal of encroachments which will release substantial road width for traffic circulation (two to four lanes). Unidirectional traffic flow should be studied in greater detail through a separate traffic study. The relocation of some of the educational institutions and private health clinics will be a mid-term objective.

a) Traffic Management Program

- Introduce and enforce parking restrictions / charged parking
- Control traffic movement specially qingqis and pick-ups
- Manage unidirectional traffic flow
- Enforce traffic rules more strictly
- Removal of encroachments
- Improved road infrastructure and street furniture
- Registration of qingqis and phase-out the over provision.

b) Improvement of Traffic in old areas

- Designated stands for qingqis / rickshaws
- Specified spaces for charged parking system
- Alternate route for loading and unloading vehicles
- Unidirectional traffic flow pattern
- Removal of encroachments from major distributors
- Pedestrianization through paving of circulation area in old bazaars

15.2 Water Supply

Larkana has almost no piped water supply and sewerage system. The situation regarding sanitation is also quite alarming. Most of the city dwellers rely on boring water and hand pumps, as due to higher water table boring is not difficult.

- In short term the major source of supply will remain the underground water, pumped to overhead tanks and supplied through a piped network.
- For upcoming planned housing schemes the strategy would be to install localized water supply network which will gradually link with the long term proposal of piped water supply by 2033.
- Comparative analysis study for surface and ground water quality and quantity would be conducted for detail assessment of appropriate water source.

- Introducing of Tariff System for utilities through Water Metering (in short term for water usage above marginal consumption).

15.3 Sewerage and Drainage

The Consultants have recommended combined system of sewerage and drainage with phase-wise approach of replacing open drains with covered sewers of PE pipes. Decentralized wastewater treatment plants are suggested to reduce pumping and infrastructure cost. The treated wastewater could be used for agricultural purposes. This could be achieved through waste stabilization ponds but the reuse of effluent is not recommended for the crops which can be eaten raw.

- “Larkana Drainage Master Plan” prepared through SCIP Consultants should be implemented in phases, only as a short term solution.
- Decentralized wastewater treatment plants are suggested to reduce pumping and infrastructure cost.

15.4 Solid Waste Disposal

The hazardous waste is also generated in the city in nominal amount which includes hospital waste, some oil spills from the mechanical workshops and waste from LINAR. According to best practices hospital waste need incinerators which are currently non-existent.

By assuming solid waste generation at the rate of 0.5 kg per capita per day (as per NRM), it is estimated that at present city population of 460,000 generates 230 tons solid waste per day (84,000 tons per year). This require approx 6 acres landfill site (0.5 acre per year per 10,000 population as per NRM)¹⁹ at present to accommodate disposal in four layers. Sanitary landfill site is required to be allocated away from any residential area. Further the selection landfill site would be based on proper soil investigation and ground water level survey.

The proposals are:

- Immediate designation of Sanitary Landfill Site with special attention for hospital waste disposal.
- Soil investigation and ground water level surveys for the selection landfill site.
- NSUSC is required to:
 - acquire the required additional Sanitary Workers as per requirements and arrange funds for POL and O&M of the equipments
 - make NSUSC self sufficient and resolve issues with TMA
 - clear liabilities for salaries and payment of vendors

¹⁹ Refer National Reference Manual: Section 8.4.6, Table 8.10 on page no. 243

15.5 Fire Brigade Station

The Larkana Municipal Corporation has only fire brigade in running condition, but due to lack of finances there is POL supply. There is a current need of five sub-stations to accommodate ten fire vehicles more.

- Establish sub-stations at different locations to ensure short response time for the whole city
- Increase service efficiency through number of vehicles, dedicated staff and financial mechanism
- To ensure readiness of all vehicles with ample stocks of POL and spares

16. PRIORITY PROJECTS

The Consultants has proposed variety of Immediate Action Plan / Priority Projects for the improvement in the services and quality of life. It is responsibility of District Coordinator Officer to timely execute these projects after framing 'Implementation Schedule' and by arranging appropriate financial resources.

16.1 List of Proposed Priority Projects - Short Term Development Proposals

S. No.	Project Name	Estimated Cost In Millions	Implementation Partners	Implementation Schedule		Targets Groups/ Beneficiaries
				Start	End	
Housing						
1.	Housing Development and Regeneration into Medium Density Low Income Housing at UC-2 (1000 Units).	300.00	P & D Department Government of Sindh/Private Developers	Jan 2015	July 2017	Local population
2.	Development of Low Density Middle Income Housing at UC-11 & UC-4 (500 Units).	400.00	P & D Department Government of Sindh/Private Developers	Jan 2015	July 2017	Local population
3.	Development of Low Density Low Income Incremental Housing to Support Extension of Larkana Industrial State as per UDSL-2020 recommendation in outskirts of UC-2 (300 Units)	150.00	P & D Department Government of Sindh/Private Developers	March 2015	July 2017	Local population
Economy						
1.	Larkana - Short Term Investment Opportunities - program.	100.000	Provincial Finance Department Gos.	Jan 2015	Jan 2016	Local Business Personal

Urban Development Strategy for Larkana

2.	Promote Tomato cultivation and processing through cottage industry.	300.000	Provincial Agriculture Department/Local Agriculture Department / Larkana Chamber of Agriculture/ Private Developers	Jun 2015	Jan 2016	Rural Population/Local Farmers/Peasants
3.	Processing, Cold storage, open air outlets land, and export Guava Production	50.000	Provincial Agriculture Department/Local Agriculture extension Department / Larkana Chamber of Agriculture/Private Developers	Jun 2015	Jan 2016	Rural Population/Local Farmers/Peasants
4.	Establishment of rice husking and polishing plant having capacity of 30 ton per day.	40.00	Local Agriculture extension Department / Larkana Chamber of Agriculture	Jan 2015	Dec 2016	Rural Population/Local Farmers/Peasants
5.	Establishment of Agro-market intelligence unit for distribution of qualified seed, fertilizers and pesticides distribution.	15.00	Larkana Chamber of commerce and Agriculture	March 2015	Jan 2016	Rural Population/Local Farmers/Peasants/Traders
6.	Proposed Industrial estate i. Completion of infrastructure for (200 acres) first phase of 500 acres industrial estate at Airport road Arija ii. oil extraction mill	2500.00 1000.00 1500.00	Government of Sindh/District Government Larkana / Larkana Chamber of Agriculture	Jan 2015	Dec 2016	Local business community
7.	Increase agricultural productivity through use of certified seed, fertilizer, plant protection on and off farm storage & mechanized crop harvesting.	52.00	Provincial Agriculture Department/Local Agriculture Department / Larkana Chamber of Agriculture	Jun 2015	Jan 2016	Rural Population/Local Farmers/Peasants
Education						
1.	Larkana Education Sector Short Term Plan - provision of 825 classrooms at different levels.	200.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jan 2015	Jan 2016	Local population/Youth

Tourism Infrastructure Improvement						
1.	Feasibility study for tourism cum recreational complex near the Airport on PPP/BOT basis	200.00	Provincial culture and tourism Department Gos/Archeology department/ Private Developers/District Government	Sep 2014	March 2015	Local Population/international tourists
2.	Feasibility :Reconstruction of Sambara-INN and cultural complex	200.00	Provincial culture and tourism Department Gos/Archeology department/ Private Developers/District Government	Feb 2015	March 2015	Local Population/international tourists
DRM						
1.	Development of disaster risk data base through statistical information, risk maps, emerging hazards information and their affects.	15.000	P & D department Gos./PDM Authority Sindh/DDM Authority Sindh/State Government of Sindh/ Irrigation Department Gos/ Private Developers	Jan 2015	Jan 2016	Local Population
Health						
1.	Larkana Health Sector Short Term Plan - Establishment of New BHU's (25-30).	500.00	Provincial Health Department/P&D Department Gos/District Health Department/ Private Developers	Jan 2015	July 2017	Local Population
Solid Waste Disposal						
1.	Soil investigation and ground water level surveys for the selection landfill site.	50.00	State Government/District Public Health Department/ Local Government/ District Government/NSUSC	Jan 2015	Jan 2016	Local and regional population

Urban Development Strategy for Larkana

2.	Larkana Solid Waste Disposal System Improvement Study	10.00	State Government/District Public Health Department/ Local Government/ District Government/NSUSC	Jan 2015	Jan 2016	Local Population
Transportation						
1.	Larkana Local Traffic System Improvement and Management Program Study.	20.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jan 2015	July 2017	Local and regional population
2.	Feasibility Study of Mass Transit on the Existing Railway Track.	50.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jan 2015	Jan 2016	Local and regional population
Water Supply						
1.	Comparative analysis study for surface and ground water quality and quantity would be conducted for detail assessment of appropriate water source.	50.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jan 2015	Jan 2016	Local Population
Sewerage and Drainage						
1.	Consultancy Service for preparation of Sewerage and Drainage Master Plan for next 20 years	40.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2015	Jan 2016	Local Population
Energy						
1.	Larkana alternative energy study	150.00	Energy and Power Department, Govt. of the Sindh /Education Department Gos/ Private Developers	Jun 2015	Jun 2017	Local Population
Urban Development						

Urban Development Strategy for Larkana

1.	Larkana CBD rehabilitation	300.00	State Government /Local Government/District Government	Jun 2015	Jun 2017	Local Population
2.	Consultancy services for per-urban growth control	50.00	State Government /Local Government/District Government	Jun 2015	Jun 2017	Local Population
3.	Cultural rehabilitation of Uc-5	1000.00	State Government /Local Government/District Government	Jun 2015	Jun 2017	Local Population

16.2 List of ADP Projects - Short Term Development Proposals

S. No.	Project Name	Estimated Cost In Millions	Implementation Partners	Implementation Schedule		Targets Groups/ Beneficiaries
				Start	End	
Housing						
1.	Construction of 100 units of Lowers Sub Ordinate Flats in Larkana.	300.00	P & D Department Government of Sindh/Private Developers	Jun 2015	Jun 2017	Local population
Economy						
1.	Introduction of Aerobic Rice Cultivation Technology (Thatta, Larkana, Jacobabad, Shikarpur, Kashmore, Kamber, Badin & Dadu)	14.00	Provincial Agriculture Department/District Agriculture Department / Larkana Chamber of Agriculture/ Private Developers	Jun 2014	Jun 2015	Rural Population/Local Farmers/Peasants
2.	Sindh Agricultural Growth Project (World Bank Assisted) (Hyderabad, Thatta, Sukkur, Khairpur, Larkana, Mirpurkhas, Umerkot, Sanghar, Matiari, Jacobabad, Shikarpur, Kashmor, Kambar-Shahdadkot, Tnado Allahyar, Badin, SBA, N. Feroze)	8867.50	Provincial Agriculture Department/District Agriculture Department / Larkana Chamber of Agriculture	Jun 2014	Jun 2018	Rural Population/Local Farmers/Peasants

Recreation						
3.	Construction of Larkana Arts Complex (Revised)	77.00	Provincial Buildings Department Government of Sindh / Local Municipal Government/ Private Developers	Jun 2014	Jun 2015	Local Population/ Tourism/ culture
4.	Improvement & Extension of Public Libraries in Sindh (Karachi, Hyderabad, Jamshoro, Khairpur Mirs, Dadu, Larkana & Shikarpur)	222.00	Provincial Buildings Department Government of Sindh / Local Municipal Government/ Private Developers	Jun 2014	Jun 2015	Local Population
5.	Establishment of Open Air Theatre at Larkana District Larkana (Revised)	60.00	Provincial Buildings Department Government of Sindh / Local Municipal Government/ Private Developers	Jun 2014	Jun 2015	Local Population/ culture
6.	Establishment of Shaheed Benazir Bhutto Museum at Sir Shah Nawaz Bhutto Library at Larkana.	59.00	Provincial Buildings Department Government of Sindh / Local Municipal Government/ Private Developers	Jun 2014	Jun 2015	Urban and rural Population
7.	Provision of Sports Facilities in High Schools / Colleges of Larkana	60.00	Provincial Buildings Department Government of Sindh / Local Municipal Government/ Private Developers	Jun 2015	Jun 2017	Local Population/Sportsmen
8.	Rehabilitation of Rice Canal RD-372 to 407 and its off-takes systems viz, Mehar Branch, Dhamrao Branch and Sehar Branch.	299.00	District Government Larkana/ Local Municipal Government/ Private Developers	Jun 2015	Jun 2017	Local Population
9.	Construction of Begum Nusrat Bhutto woman library and multipurpose hall at Larkana.	140.00	Provincial Buildings Department Government of Sindh / District Government Larkana /Local Municipal Government/ Private Developers	Jun 2014	Jun 2015	Local Population
10.	Construction of Bilawal Bhutto Zardari People's Park at Larkana	115.00	Provincial Buildings Department Government of Sindh / District Government Larkana /Local Municipal Government/ Private Developers	Jun 2014	Jun 2016	Local Population
11.	Construction of Bakhtawar People's Park at Moen jo Daro	641.00	Provincial Buildings Department Government of Sindh / District Government Larkana /Local	Jun 2014	Jun 2016	Local Population

			Municipal Government/ Private Developers			
12.	Repairing of existing recreational facilities and completion of under construction work.	125.00	Provincial Buildings Department Government of Sindh / District Government Larkana /Local Municipal Government/ Private Developers	Jan 2015	July 2017	Local Population/
Education						
1.	Up-gradation of Primary Schools to Middle Schools in District Larkana	30.0	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
2.	Construction / Reconstruction of Two Roomed Building in Existing Shelter less Primary Schools in District Larkana	20.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
3.	Rehabilitation / Reconstruction of Existing Primary & Elementary Schools in Sindh	40.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
4.	Provision of Furniture for Existing 260 Primary / Elementary Schools	60.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
5.	267Rehabilitation / Re-Construction &Provision of Missing Facilities in Existing Elementary Colleges in Larkana	100.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
6.	Rehabilitation of Existing High Schools & Higher Secondary Schools in District Larkana	40.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
7.	Up-gradation of Middle Schools to High Schools.	40.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
8.	Re-construction of Dangerous Elementary / High Schools in District Larkana	40.000	Provincial Education Department Government of Sindh/District Education Department / Private	Jun 2015	Jun 2017	Local population

Urban Development Strategy for Larkana

			Developers			
9.	Establishment of Shaheed Benazir Bhutto Girls Cadet College @ Garhi Khuda Bux, Larkana	428.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2014	Jun 2015	Local population
10.	Establishment of Shaheed Mohtarma Benazir Bhutto Govt. College of Education at Larkana (Revised)	179.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2014	Jun 2016	Local population
11.	Establishment of Quaid-e-Awam University of Engineering Science & Technology, Constituent College / Campus at Larkana	2,637.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2014	Jun 2015	Local population
12.	Provision of Sports Facilities in High Schools / Colleges of Larkana Division.	60.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
13.	Schools Improvement through Adopt a School Intervention Larkana Division	60.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
14.	Schools Improvement through PPP Initiatives Larkana Division	60.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
15.	Allotment of land Measuring 220 Acres for Establishment of Shaheed Mohtarma Benazir Bhutto Medical University, Larkana.	14.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
16.	Integrated rehabilitation and provision of missing facilities to existing elementary schools, District Larkana (69 units)	295.910	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2014	Jun 2016	Local population
17.	Integrated rehabilitation and provision of missing facilities to existing Secondary and Higher Secondary schools, District Larkana (15 units)	200.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2014	Jun 2015	Local population

Urban Development Strategy for Larkana

18.	Establishment of Begum Nusrat Bhutto Girls Degree College, Larkana	143.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2014	Jun 2016	Local population
19.	Integrated Rehabilitation of existing Elementary Schools in District Larkana (15 Units).	51.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2014	Jun 2015	Local population
Tourism Infrastructure Improvement						
1.	Protection, Preservation Promotion and Development of World Heritage Sites of Mohen-Jo-Daro	286	Provincial culture and tourism Department Gos/Archeology department/ Private Developers/District Government	Jun 2014	Jun 2015	Lower Income Groups
DRM						
1.	Geo-referred demarcation and construction of Earthen bunds for protection of forest land and up gradation of GIS Laboratory at Hyderabad (Larkana, Kandhkot, Shikarpur, Dadu, Sukkur, Ghotki, Khairpur, SBA, Sanghar, Thatta, T.M. Khan, Karachi, N. Feroze, Tharparkar, Jacobabad, Mirpurkhas and Badin.	247.00	P & D department Gos./PDM Authority Sindh/DDM Authority Sindh/State Government of Sindh/ SUPARCO/ Irrigation Department Gos/ Private Developers	Jun 2014	Jun 2016	Local Population
2.	Restoration work of J-Spur at mile 1/6 Nusrat Loop Bund	250.00	P & D department Gos./PDM Authority Sindh/DDM Authority Sindh/State Government of Sindh/ Irrigation Department Gos/ Private Developers	Jun 2014	Jun 2015	Local Population
Health						
1.	Establishment of Madam Faryal Talpur Cardiac Surgery Complex at CMC Hospital, Larkana having facilities of: i. Coronary Angiography Cardiac Catheterized Lab. ii. Cardiac Bypass Surgery. iii. Chest Surgery at Chandka Medical College Hospital	291.00	Provincial Health Department/P&D Department Gos/District Health Department/ Private Developers	Jun 2014	Jun 2015	Local and regional Population

Urban Development Strategy for Larkana

	Larkana.					
2.	Construction of Neuro-Science Complex at CMCH Larkana contains: 1. Neurosurgery Department 2. Neuro Medicine (Neurology Department) 3. Psychiatry Department.	215.00	Provincial Health Department/P&D Department Gos/District Health Department/ Private Developers	Jun 2014	Jun 2015	Local and regional Population
3.	Revamping / Revitalization of Sheikh Zaid Hospital for Women Larkana.	161.00	Provincial Health Department/P&D Department Gos/District Health Department/ Private Developers	Jun 2014	Jun 2015	Local and regional Population
4.	Renovation and Rehabilitation of Paramedical Institute at Larkana.	68.00	Provincial Health Department/P&D Department Gos/District Health Department/ Private Developers	Jun 2014	Jun 2015	Local and regional Population
5.	Construction of Medical Dispensaries in various villages of District Larkana (11 Nos.)	64.00	Provincial Health Department/P&D Department Gos/District Health Department/ Private Developers	Jun 2014	Jun 2016	Local Population
Environment						
1.	Study on wetlands especially Ramsar sites, in Sindh province (Jacobabad, Larkana, SBA, Thatta, badin, Tharparkar, Karachi, and Dadu).	54.00	Provincial Forest, Environment & Wildlife Department District Government /Private Developers/	Jun 2014	Jun 2015	Local Population
Solid Waste Disposal						
1.	Establishment of Hospital Waste Management at all Teaching Hospitals in Sindh.	142.00	State Government/District Public Health Department/ Local Government/ District Government/NSUSC	Jul 2014	Jun 2017	Local Population
Public Infrastructure						
1.	Rehabilitation/Renovation of Jails in Sindh (Karachi / Hyderabad / Dadu / Sanghar / Badin / Mirpurkhas / S.B.A /Sukkur / Shikarpur / Khairpur/ Larkana / Jacobabad)	300.00	Provincial Home Department Government of Sindh/District Police	Jan 2015	Jun 2017	Prisoners/Jail Security department
Transportation						
1.	Improvement of Old Indus Highway (Larkana Town Portion Left Over Portion of NHA) Mile 191/0-198/4 I/C Link Connection Larkana Naudero Road Total Length 8/4 Mile (13.60	775.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local and regional population

Urban Development Strategy for Larkana

	K.M)					
2.	Construction/Reconditioning of Roads District Larkana	609.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Aug 2014	Jun 2016	Local and regional population
3.	Construction of CC topping Roads / Streets and CC drains in various colonies of Larkana City.	268.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jul 2014	Jun 2016	Local population
4.	Construction of Flyover Bridge 500 Rft at Larkano City (2 Nos.)	200.000	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local population
5.	Construction of road from Kamber Railway Track, new Nazar Mohalla along with Rice Canal IP Side to Circular By-Pass 5.00 KM	60.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2015	Local population
6.	Construction of Road from Larkana Ratodero Road at village Fatehpur to village Haji Motayo Jagirani via Khair Mohammad Jagirani (Parellel to Mirwah) mile 0/0-1/4 (2.40 Kms)	36.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local population
7.	Construction of Road from Garhi Khuda Bux Bhutto Bypass	51.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local population
8.	2672 Construction of metallic Road from the Bridge of Dadu Canal at Pir Sher to Noor Khan Jatoi 0/0-0/7.	20.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local population
9.	Construction of Road in village Lal Bux Shaikh i/c storm Water Drains	39.00	Provincial Works & Services Department Gos./District Highways	Jun 2014	Jun 2016	Local population

			Department/ Local Municipal Government/District Government/ Private Developers			
10.	Construction of Road from Bacho Wahan to village Abdul Majeed Chandio along 5-L Zakria Sim Drain mile 0/0-1/4 (2.4 Kms)	30.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local population
11.	2675 Construction of Road from village Khuda Bux Mohel to Dargah Pir Chozal ali Shah mile 0/0-1/0 (1.60 Km)	19.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local population
12.	Construction of Road from Sukkur Naudero Road to village Budho Khokhar mile 0/0-0/4 (0.80 Km)	16.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local and regional population
13.	Construction of Road from Larkana Naudero Road at Quaid Awam Agriculture Farm to village Jeewan Bhutto mile 0/0-1/2 (2.0 Km)	23.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local and regional population
14.	Construction of link road from Tunio Ali Shah to main Road Khairo-Dero, Taluka Ratodero (2.0 kms)	17.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developer	Jun 2014	Jun 2016	Local and regional population
15.	Construction of link road from village Mavalkot to Warish Dino Machi mile 0/0-3/0 (4.83 Kms)	55.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local and regional population
16.	Construction of link road from Kambar Ratodero Road Labano Khan Khokhar to connect Panjoo Lorar mile 0/0-1/2	23.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local and regional population

17.	2816 Block provision for Construction of various roads in Sind (Upper sindh) 100 Kms (Larkana, Dadu, N. Feroz, Kambar, Ghotki, Sukkur, Kashmore & Shikarpur)	1,484.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local and regional population
18.	Construction of Additional Carriageway of Larkana Naudero Road (16.00Kms)	176.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2017	Local and regional population
19.	Construction of road from Bab-e-Shahnwaz (Naudero city to Masoleum Garhi Khuda Bux Bhutto i/c over head bridge on Railway Track near Shahnwaz Bhutto Railway Station. (6.40 Kms)	600.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2017	Local and regional population
20.	Construction of road from Punjodero to Garhi Khuda Bux Bhutto	55.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2017	Local and regional population
21.	Construction of Larkana Naudero Road Circular road to connect Indus Highway (N-55) at the Larkano By-Pass.	300.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2017	Local and regional population
22.	Construction of road from Larkana Rashid Waggan road Nazar Muhllah along with sim Nala (both side) to Murad Shah i/c 10000rft Retaining Wall = (6.00Kms)	66.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2017	Local and regional population
23.	Construction of road from Arija Bye-Pass to Gud Purani to Yar Muhammad Huilo along path of Glipsy ,minor	36.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2017	Local and regional population
24.	Construction of Asphalt Road between	67.00	Provincial Works & Services	Jun 2014	Jun 2016	Local and regional

	Moin Jo Daro village Haji Lal Bux Shaikh (Balhrej) Taluka Dokri		Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers			population
25.	Construction of new bridges in Sindh (Shikarpur, Larkana, Khairpur, Sukkur, S.B.A., Jamshoro & Dadu.)	594.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local and regional population
26.	Construction of Larkana Naudero Road Circular road to connect Indus Highway (N-55) at the Larkano By pass.	300.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jan 2015	July 2017	Local and regional population
Sewerage and Drainage						
1.	Construction of 1RE Sub-Drain RD-0 to 35 (Village Abdul Wahab Khoso), Sub-Drain Qubo Saeed Khan, 3LA Sub Drain RD-0 to 37 and Extension of 3R Sub-Drain RD - 18 to 32 of Shah dad kot System in Drainage Division Larkana.	80.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2015	Local population
2.	Rehabilitation of SCARP Drains & Allied Structure Works in Larkana Shikarpur Drainage Project	992.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2017	Local population
3.	Consultancy services for preparation of sewerage and drainage Master plan for next 20 years.	40.00	Consultant/ P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jan 2015	Jan 2016	Local population
4.	Rehabilitation / Restoration of Drainage Infrastructures and Construction of Retaining Wall around Larkana City on various Drains including 1R, 2R and 1R-C Sub Drain of Larkana South System, 1R Ghar Sub Drain and Reconstruction of Structures including VRBs, VRCs, Water Course X-ings, Inlets, Junction culverts etc.	1,000.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2017	Local population

Urban Development Strategy for Larkana

5.	Construction of Paver Block & Drains in various streets of Larkana City.	70.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2015	Local population
6.	Construction of Paver Block & CC Drains in Various Streets of Larkana City	70.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2016	Local population
7.	Construction of C.C. drain i/c block & paver tiles in various units of UC-8, 9, 10, 16 & 19 Larkana City	40.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2015	Local population
8.	5 Nos: Schemes of R.O Plant	60.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2017	Local population
9.	Development Schemes relating to Drainage Sector C.C. Drains and C.C Block in various Muhalla of U.C -07 Larkana City.	22.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2015	Local population
10.	1893 Development Schemes of NA-204 Larkana Construction of C.C. Drains i/c C.C Blocks for various U.Cs.	32.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2017	Local population
11.	1898 Construction of C.C. Drains and C.C. Block of various U.C's of PS-38 Taluka /District Larkana.	35.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2017	Local population
12.	1899 Construction of CC Drains and CC Block at for various UC's of Larkana City (20 Villages)	40.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2017	Local population
13.	Improvement & Extension of Drainage System in Sachal Colony Larkana City.	20.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2015	Local population

Urban Development Strategy for Larkana

14.	Implementation of Short Term Drainage Plan (Approved)	829.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2015	July 2015	Local Population
15.	Extension & Improvement of Existing Sewerage system of Larkana City.	830.00	State Government / Public Health Department/t/District Government/NSUSC	Jun 2014	Jun 2017	Local Population
16.	Requisition of Land for sewerage treatment plant as per Sewerage and Drainage Master Plan	150.00	State Government / Public Health Department/t/District Government/NSUSC	Jan 2015	July 2015	Local Population
17.	Development of integrated pipe water supply/sewerage project with treatment plants Phase I - Zone C Phase II - Zone B Phase III - Zone A	2000.00 500.00 750.00 750.00	State Government / Public Health Department/t/District Government/NSUSC	Jan 2014	July 2017	Local Population
Energy						
1.	Establishment of Junior Section, Solar Energy Project @ Cadet College Larkana	630.00	Energy and Power Department, Govt. of the Sindh / Private Developers	Jun 2015	Jun 2016	Local Population
Miscellaneous						
1.	Special Package of Development Schemes for Distt: Larkana.	1,000.00	P & D Department Government of Sindh/Local Municipal Government/ District Government/Private Developers	Jan 2014	Jun 2015	Local Population

17. MONITORING AND EVALUATION²⁰

In the context of future related development activities proposed in UDSDL-2033 monitoring can be defined as a process of regularly measuring of development activities in an efficient manner for achieving the objectives of UDSDL-2033 plan. Whereas, evaluation of development activities is a regular assessment of the impact of interventions and the extent to which the given development objectives have been achieved.

17.1 Internal Monitoring

Internal monitoring of development proposals of UDSDL-2033 plan provides routine flow of field level information for implementing agency on the basis of predetermined indicators coupled with verification of information by monitoring unit. In case of UDSDL-2033, internal monitoring will be conducted by the office of district coordinator with the involvement of 'Urban Management Unit'.

Internal monitoring results will be communicated through monthly project implementation reports to provincial government's respective agencies. Indicators for internal monitoring will be related to process, outputs and outcomes to assess progress and results against each development proposal or activity, and to adjust the work program if necessary. Monthly reports will be prepared on standard format. The compliance report will be communicated to the provincial government concerned agency and will need to be provided as a condition before developers can start work.

17.2 External Monitoring

External monitoring will be carried by concerned agency (e.g. P&D Department) of provincial government of Sindh. In sub projects external monitoring will be carried out in parallel with the implementation of each development proposal. An independent monitoring consultant may be contracted for the purpose. A final implementation compliance report than will be prepared stating whether the development proposal has been carried out based on the envisaged plan.

17.3 Third Party Monitoring

The office of district coordinator Larkana or the concerned agency of provincial government of Sindh can engage/hire independent professionals to carry out monitoring function.

17.4 Evaluation

It will be the responsibility of concerned agency of provincial government of Sindh to conduct evaluation of sub projects highlighted in UDSDL-2033, whereas the third party engaged for monitoring of projects will provide an independent assessment of the impacts. The first evaluation of sub development project/proposal implementation will be carried out six month after its completion. Thereafter the evaluation can be done on yearly basis. These evaluations will help representative of provincial government to advice office of district coordinator larkana and

²⁰ 'Draft Resettlement Policy Framework Thar Coal Fields, Coal and Energy Development Department, Government of Sindh, 2013.

other government agencies for taking measures mitigate adverse impacts, if any, during post implementation stage.

18. COSTING AND BUDGETING²¹

Urban Development Strategy Larkana is a comprehensive project which will involve different national and international investors working on different sub- projects/proposals. Financing of any sub project/proposal will be the primary responsibility of project proponent, i.e. provincial government of Sindh. Finances for development, redevelopment, regeneration, administration, and implementation will be provided by the provincial government of Sindh through its internal/external resources. The office of district coordinator officer Larkana will identify the funds needed to cover these costs.

18.1 Development Financing and Budget Flows

The project proponent, provincial government of Sindh is responsible for timely allocation of the funds needed for the sub project development/redevelopment including compensation of the assets, e.g. land, etc. Among other things, allocations for costs provided by the office of district coordinator Larkana will be reviewed by 'Management Unit'

Based on the review of 'Management Unit', compensation for land, tax or another activity will be provided by the concerned agency of government of Sindh to DC/ District Coordinator Officer who will disburse it to the development agencies/developers. This process will also be overseen and monitored by the department of revenue at local/ provincial level.

18.2 Evaluation of Total Cost of Development

Total development/redevelopment costs can be placed in three distinct budgeting categories: development/redevelopment costs, compensation costs and administrative costs. Development involves complex and contingent processes, therefore developing cost estimates and a budget for development is not simple. The basic elements for identifying and estimating development/redevelopment costs are the following;

- A policy framework to establish eligibility criteria for entitlements and other forms of assistance
- A census to establish the number and identity of communities that will be benefited or affected;
- An asset inventory to detail all of the properties (e.g. land, structures and other improvements) that will be demolished, usually carried out at the same time as the census;
- A socio economic survey to determine impacts of development on communities;
- Project technical designs, to determine the full range of facilities and services that will need to be constructed or provided.

²¹ Ibid

“URBAN DEVELOPMENT STRATEGY FOR LARKANA” (2013 - 2033)

WITH ADDENDUM-2018

ADB Loan No. 2499-PAK



FINAL REPORT

January, 2019

Volume- III

ECONOMIC DEVELOPMENT PLAN REPORT (EDPR)



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ECONOMIC DEVELOPMENT PLAN REPORT (EDPR) 2013-2033

Volume- III



EA Consulting Pvt Ltd
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Engineering, Architecture & Project Management



ECONOMIC DEVELOPMENT PLAN REPORT (EDPR)

Table of Contents

1.	LOCAL ECONOMIC DEVELOPMENT STRATEGY	1
1.1	Process	1
1.2	Key Indicators	2
2.	LOCAL ECONOMIC ASSESSMENTS	3
2.1	Demography	3
2.1.1	General	3
2.1.2	District Population Size and Growth	3
2.1.3	Economically Active Population	3
2.1.4	Literacy Ratio	4
2.1.5	Population by Age Structure	5
2.2	Economic Sectors	6
2.2.1	Agricultural Potential	6
2.2.2	Irrigated Crop Area	6
2.2.3	Rice Production	7
2.2.4	Agro Processing	10
2.2.5	Forestry	12
2.2.6	Industrial Establishment	13
2.3	Social Sector	16
2.3.1	Health	16
2.3.2	Education	17
2.3.3	Housing	18
2.3.4	Environment	18
2.3.5	Recreation	20
2.3.6	Tourism	21
2.4	Integrated Assessment of Local Economy	22
2.4.1	Demography	22
2.4.2	Economic sector	22
2.4.3	Health	24
2.4.4	Education	24
2.4.5	Housing	25
2.4.6	Environment	25
3.	SWOT ANALYSIS MATRIX	26
3.1	Demography	26
3.2	Economy Sector	27
3.3	Social Services	30
3.4	Housing	32
3.5	Environment	33
3.6	Land Use & Transportation	35
4.	CONCLUSION OF SWOT ANALYSIS	42



4.1	Strengths and Weaknesses	42
4.1.1	<i>Institutional Capacity</i>	42
4.1.2	<i>Economy</i>	42
4.1.3	<i>Regional Service Center</i>	42
4.1.4	<i>Governance</i>	42
4.1.5	<i>Private Participation</i>	43
4.2	Opportunities and Threats	43
5.	THE VISION 2033	44
5.1	Goals	44
5.2	Objectives	45
5.3	Programs	46
6.	SHORT TERM INVESTMENT REQUIREMENT	47
6.1	Objectives and Targets	47
6.2	Identification of Economic Strategies	47
6.3	Intervention by the Government	49
6.4	Strategy to Stimulate Private Investment	50
6.5	Identification of Projects	50
7.	IMPLEMENTATION STRATEGY AND PRIORITY PROJECTS	52
7.1	Public Sector:	52
7.2	Private Sector:	53
8.	PROJECT DESCRIPTION AND BACKGROUND	54
8.1	Overview	54
8.2	Summary of Main Features of Development Strategy	54
8.3	The Project Area	55
9.	POTENTIAL URBAN DEVELOPMENT CHALLENGES AND RISKS	56
10.	URBAN DEVELOPMENT STRATEGY LARKANA	58
10.1	Development Vision	58
10.2	Objectives	58
10.3	Target Areas	60
10.4	Land Acquisition for Development	60
10.5	Institutional framework	60
10.6	Efforts to be taken by Project Proponents	63
10.7	Development Planning	63
11.	IMPLEMENTATION STRATEGY	64
11.1	Process of Implementation	64
11.2	Implementation Agency	64
11.3	Legal Frameworks	65
11.4	Institutional Enhancement	66
12.	IMPLEMENTATION SCHEDULE	68
13.	PRIORITY PROJECTS	81
13.1	List of Proposed Priority Projects - Short Term Development Proposals	81
13.2	List of ADP Projects - Short Term Development Proposals	85
14.	MONITORING AND EVALUATION	97
14.1	Internal Monitoring	97

14.2	External Monitoring.....	97
14.3	Third Party Monitoring	97
14.4	Evaluation	98
15.	COSTING AND BUDGETING	98
15.1	Development Financing and Budget Flows	98
15.2	Evaluation of Total Cost of Development	99

1. LOCAL ECONOMIC DEVELOPMENT STRATEGY

The Local Economic Development is defined by SCIP-03 Consultants¹ “a process by which public, business and non-governmental sector partners work collectively to create better conditions for economic growth and employment generation”. While public sector is more visible in development efforts in the secondary cities, the private sector nevertheless makes its modest contribution with support from the public sector.

All government departments, formal private sector organizations, informal groups, non-government and community based organizations and even individuals, are actors and stakeholders in the economic development. Even an employed individual supporting his family is making contribution at work as well as at home by feeding, sheltering and educating his family.

The economic development is therefore seen as sum total of efforts of all the stakeholders, who may be working in different sectors, collectively contributing towards the Local Economic Development (LED). The Local Economic Development Strategy (LEDS) process needs to involve all the stakeholders from the initial planning stage, not only to get their feedback in the preparation of LEDS but also to get their commitment in implementation of the strategy.

1.1 Process

The process of LEDS lies in the analysis of existing conditions, diagnosis of problems and preparation of strategies for growth in sectors, which contribute to economic development. The complementarities of various sectors in the LED are then manipulated to get the optimum results.

The focal point for the preparation of LEDS for Larkana is the Director General of the Directorate of Urban Policy and Strategic Planning, who has initiated the consultancy for the planning and will remain involved in the inter-sectoral coordination and monitoring of LEDS objectives. In the field, however, the implementation and coordination will be focused on the Deputy Commissioner, who is also officiating as the Administrator, Larkana Municipal Corporation and Director General, Larkana Development Authority; two most important organizations charged with the development of the city.

The stakeholders and the interest groups were identified at the outset and interaction with them started during the data collection stage. Although no formal working group was announced, the stakeholders group comprising representatives of district administration and line departments of provincial government (bureaucrats), Chamber of Commerce and Industries (business interest) Chamber of Agriculture (Agriculture), utilities companies

¹ Draft Guidelines for the Preparation of Local Economic Development Strategies (LEDS) by Requito V. Bellosillo, Regional Economic and Urban Development Advisor SCIP-03

(service providers), LMC and LDA (Local Government, political leaders) and common citizens, were identified and involved in the process.

The interaction with the stakeholders took place at four stages:

1. During data collection/information gathering stage.
2. Formal workshop at presentation of Draft Report stage.
3. Formal workshop at Final Report presentation stage.
4. Detailed discussions with local officials of Line Departments in compliance to comments on Final Report.
5. Workshop/meeting held in UPSP for vetting by government departments.

As the availability and quality of data had some question marks, the focal group discussions and interviews with stakeholders proved to be the most cost effective way of getting valuable information filling up data gaps. The data analysis was carried out at two spatial parameters: the city itself within municipal boundaries; and its area of influence and catchment of services comprising Larkana District as well as Sindh Province.

1.2 Key Indicators

The data collected has been analyzed as key indicators of development sectors relevant to the economic growth of Larkana. These indicators will provide a bench mark to measure the performance of the economy in future. The key indicators are listed below:

- Demography
- Economic Sector
- Social Service Sector
- Housing
- Environment
- Land Use and Transportation
- Infrastructure
- Governance

2. LOCAL ECONOMIC ASSESSMENTS

2.1 Demography

2.1.1 *General*

Human resource, as labour, is one of the four important factors of production; especially bulging young populations of a country provide the necessary human capital for its rapid economic development. It can be a productive asset to the country, if put to proper training and skill development.

As cities generate jobs, income and opportunities for social mobilization, the level of earnings of individuals in urban centers is naturally higher with associated better and broader outlook on life style. In view of expanding urban areas, cities' development has become one of the key pillars of Pakistan's growth framework.

2.1.2 *District Population Size and Growth*

Population growth and urbanization go jointly and economic development is closely correlated with urbanization. Since 1951, when first population census in Pakistan was held, the population of Larkana district has increased nearly four times - from 502 thousand in 1951 to 1,927 thousand persons in 1998, resulting in enormous cumulative increase of about 284% in less than 50 years.

The rate of growth of the city had both positive and negative impacts on the residents. On the positive side, the increased population contributed to emergence of additional commercial and economic activities. It generated new business investment openings which created employment opportunities for the residents, besides providing the accelerated financial support to local business and industry. On the negative side, rapid increase in population places increased stress on municipal services, physical resource and infrastructure.

2.1.3 *Economically Active Population*

Economically active population as defined in the census document represented the 'working labour force'. According to the 1998 census, the proportion of labour force to the total population for Larkana taluka (urban) was 21%, compared to 23% for rural area and 22% for the district as a whole. The unemployment rate in Larkana taluka was 22.55% for urban locality, 6.72% for rural area and 11.04% for the district as a whole.²

The occupational structure significantly varied in urban and rural areas. In the former case 70% were classified as "self-employed", 17% as government employees, 2% in private service, 5% worked as 'Unpaid Family Helpers' and 3% as self 'Employed'. In the rural

² 1998 District Census Report of Larkana, Table-2.9, pp46, Population Census Organization, Govt. of Pakistan, Islamabad

area about 75% of the total population was categorized “Skilled Agricultural and Fishery Worker” and 16% were engaged in ‘Elementary Occupations’.

According to 1998 census data, nearly two thirds of the total population in the district was engaged in agriculture, forestry, hunting and fishing sectors, while the rest was employed in non-agricultural industries. In the rural area, the highest employment providing sector has been “Agriculture, Forestry, Hunting and Fishing” while in urban localities 27% of the working population was associated with “Construction” activities.

With the changing paradigm it is assumed that at least one fourth of the female work force will be encourage to engage in different economic activities, targeting an employment rate of 90% for males and 25% for females.

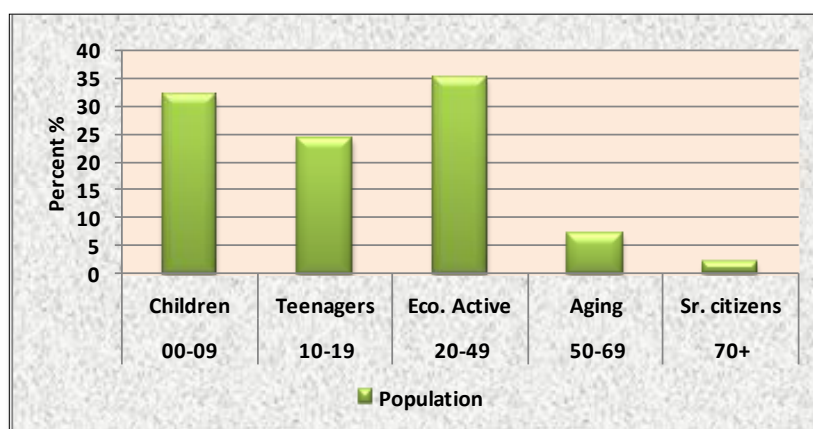
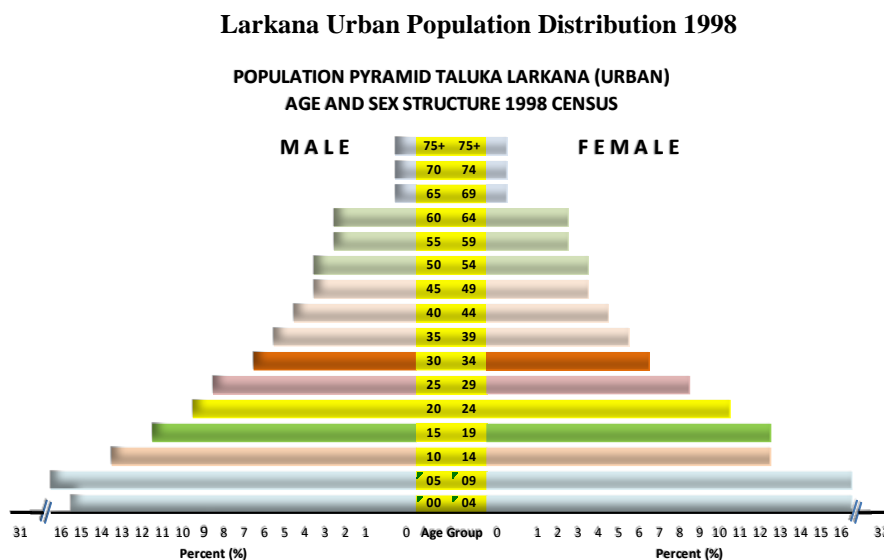
Thus, at present there is a shortage of 65,000 job opportunities has been work out, while there will be 119,000 additional job requirement expected during 20 years of plan period. Therefore, by 2033 there will be a need of additional 184,000 job opportunities to cater for upcoming work force in different sectors (medical, engineering, cottage industry, government officials, servants, service sector, trade and commerce, transportation) but majorly in agriculture and industries.

2.1.4 Literacy Ratio

Literacy and education is important to improve the quality of human resources. In 1981 and 1998 censuses, the population aged above 10 year was used as the basis to work out literacy ratios. The published data for the two censuses indicated that (i) literary ratio for district Larkana had improved in 1998 by 12.83 percentage points and (ii) there were sharp differences in the ratios by sex and between urban and rural areas. The population of male literates was much higher than female, both in urban and rural areas and Larkana district as a whole. The literacy ratio in 1981 indicated that 6.51 literate males were for one (01) literate female in rural area of Larkana taluka. However, after more than 16 years the situation in rural area rapidly dropped as by 1998 there were 3.16 educated males to one (01) educated female (about one-half of 1981).

2.1.5 Population by Age Structure

A review of male and female age structure data for urban population of Larkana taluka in 1998 census would reveal a few important trends. The figures below illustrate the changes in the demographic profile of Larkana (urban taluka) over this period.



Above figures show that not more than half of the total population is in economically active age group (which also include females) and the rest are 'dependants'. This situation needs to be changed through increasing employability particularly among women by increasing literacy, vocational training and skills.

2.2 Economic Sectors

2.2.1 Agricultural Potential

The importance of agricultural potential in Larkana district could be realized from the historical data (1990-91/1998-99) of crops. Rice, oil seeds and barley are major crops. Rice alone forms nearly one third of the total rice area of Sindh province. Using the average growth rate that prevailed during the 1990s, projections for subsequent years were made till 2013. A summary of data by five years interval is presented in the table below:

CROPPED AREA IN LARKANA DISTRICT AS PERCENTAGE OF SINDH

Index Years	Larkana District Crop Area as Percent (%) of Sindh Province						
	Rice	Oilseeds	Barley	Gram	Wheat	Sorghum	S/cane
1990-91	30.13	11.60	11.81	8.85	5.26	0.98	0.38
1995-96	29.64	11.50	11.97	9.68	6.40	1.59	0.37
2000-01	30.40	16.04	12.48	10.07	6.33	2.01	0.40
2005-06	30.24	16.39	12.55	10.19	6.30	2.06	0.41
2010-11	30.09	16.75	12.61	10.31	6.26	2.10	0.41
2012-13	30.03	16.90	12.63	10.36	6.24	2.12	0.42
Avg. (23 Yrs)	28.0	13.80	11.40	9.2	5.7	1.80	0.40

Source: Socio-Economic Indicators at District Level (SINDH), November 2001, FBS, GoP, page 63-122.

Some of the agricultural crops cultivated in Larkana district may be commercially more significant. These are Rice, Oilseeds, Barley and Gram. ‘Sugdasi’ variety of rice has special fragrance (aroma) and taste and therefore it enjoys a premium over market price of other rice varieties grown in Larkana rice growing tract.

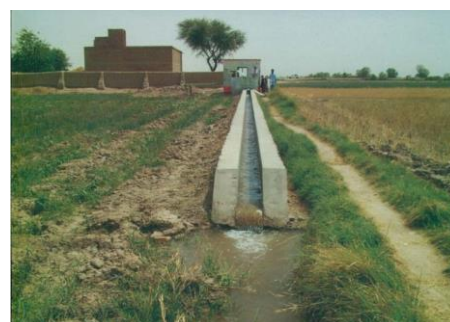
2.2.2 Irrigated Crop Area

Taluka Larkana receives irrigation supplies mainly from Rice and Dadu canals. However, river Indus is passing through its Eastern boundaries for the benefit of localities like Agani, Akil, Sanhani and Meher Wada. The position of irrigation network for other talukas is given below:

Taluka

Canal

- | | |
|---------------|--|
| 1. Dokri | Rice Dadu |
| 2. Miro Khan | Warah branch, Shahdadkot Branch |
| 3. Kamber | Nalas |
| 4. Ratodero | Ratodero Br., Sijawal Br., Warah Br., Rice Canal, Dadu Canal |
| 5. Shahdadkot | Shahdadkot Br., Nalas/Flood Protective Bunds |
| 6. Warah | Warah Br. |



Besides, weir controlled irrigation the “Katcha” areas within the two protective bunds of Larkana, Ratodero and Dokri talukas, are cultivated making use of flood water. It is termed in revenue records as ‘Sailabi (flood) cultivation’. Furthermore, when there are sufficient rains, a large area is brought under cultivation on the other side of the protective bunds towards the Kohistan tract. Cultivation with tube-well water is also practiced in the area.

2.2.3 Rice Production

The importance of rice produced in Larkana can hardly be denied if seen in the provincial/national or regional/global perspective. Not only it is highly commercial crop in the district, providing employment and income to the people, but it is also a good source of food and is the third largest crop grown after wheat and cotton.



➤ National-International Significant

Rice ranks as second amongst the staple food grain crop in the country and it has been a major source of foreign exchange earning in recent years. Rice production comprises 40% of Basmati (fine) type and 60% of coarse varieties. It accounts for 2.7% of the value added in agriculture and 0.6% of GDP. During the last 5-6 years (2005-06 to 2011-12) rice contributed 10-14 percent in the total production of “Food Crops” in Pakistan. In the year (2011-12) rice was grown on 2.571 million hectare, producing 6.160 million tonnes, with an average yield 2,396 kg / hectare³.

Punjab and Sindh province are the two leading producers of rice in Pakistan contributing nearly 60% and 30% respectively to the national rice production. The ‘Basmati’ rice constituted about 50% in the total rice production and is the main export variety of the country. Pakistan Basmati rice has been a favorite among international rice buyers as they are willing to pay a premium price for this variety.

➤ Sindh Situation

Rice has been historically an established crop in Sindh as its cultivation dates back even before the advent of Moen-Jo-Daro civilization. The barrage controlled irrigation was started in Sindh in early 1932, but rice cultivation was there even before it. However, with more water available, its cultivation started to expand. In Sindh, there are two geographical areas where rice cultivation is undertaken i.e. Northern or upper Sindh area and Southern or Lower Sindh.

³ Pakistan Economic Survey 2012-13, Govt. of Pakistan, Finance Div, Economic Adviser’s Wing Islamabad, pp-21

Area and production statistics for Sindh at district level (1990-91 to 1998-99) published by Federal Bureau of Statistics, Government of Pakistan is reproduced in the table below as well as data from Department of Agriculture, Government of Sindh is also shown from 2009-10 to 2012-13.

AREA, PRODUCTION AND YIELD OF RICE

Years	Area (1000 Hectare)			Production (1000 Mt)			Yield / Hectare (In Kg)		
	Sindh	Division Larkana	District Larkana	Sindh	Division Larkana	District Larkana	Sindh	Division Larkana	District Larkana
1990-91	680	419	205	1433	1114	592	2108	2659	2889
1991-92	692	419	205	1488	1118	586	2148	2666	2855
1992-93	569	395	189	1273	1060	525	2238	2684	2773
1993-94	703	448	209	1955	1420	706	2781	3173	3373
1994-95	598	390	192	1407	1135	583	2351	2914	3039
1995-96	642	404	190	1697	1157	553	2642	2862	2904
1996-97	702	447	210	1962	1353	660	2795	3024	3139
1997-98	689	451	212	1841	1322	630	2671	2929	2975
1998-99	704	459	214	1930	1449	672	2741	3160	3131
2009-10	708	269	98	2422	1007	384	3422	3742	3921
2010-11	361	133	84	1230	471	329	3406	3543	3907
2011-12	636	305	99	2260	1162	388	3555	3816	3926
2012-13	511	177	94	1844	627	362	3608	3545	3854
Average	630	363	169	1749	1107	536	2806	3132	3286

Source: Federal Bureau of Statistic Government of Pakistan and Department of Agriculture, Government of Sindh.

The share of Sindh province in the total rice production of Pakistan is slightly over 30% while the percentage share of Larkana district in the total production of Sindh is nearly one third (33%). Hence the proportion of rice production of Larkana district in the total production of rice in Pakistan works out to about 11%. Therefore, the role that rice production is playing in the national and regional economy is very significant and is expected to continue in future at least in short and medium term perspective.

➤ **Area, Production and Yield of Rice in Larkana**

The Agriculture Department, Government of Sindh has released final estimates of rice area, production and yield by all districts in Sindh province including Larkana. Details for Larkana District are shown in the table below:

RICE STATISTICS FOR LARKANA DISTRICT

Description	2009-10	2010-11	2011-12	2012-13	Average
Area (hectares)					
IRRI	82,191	73,139	76,352	82,441	78,531
Hybrid	9,273	6,723	14,049	8,448	9,623
Basmati	5,674	4,097	7,816	2,345	4,983
Others	685	163	718	710	569
Total:-	97,823	84,122	98,935	93,944	93,706
Prod. (tonnes)					
IRRI	318,792	282,616	301,032	309,667	303,027
Hybrid	55,963	40,000	74,488	48,435	54,722
Basmati	8,157	5,890	12,237	3,303	7,397
Others	688	168	690	695	560
Total:-	383,600	328,674	388,447	362,100	365,705
Yield (kg/ hectare)					
IRRI	3,879	3,864	3,943	3,756	3,860
Hybrid	6,035	5,950	5,302	5,733	5,755
Basmati	1,438	1,438	1,566	1,409	1,462
Others	1,004	1,031	961	979	994
Total:-	3,921	3,907	3,926	3,854	3,902

Source: Department of Agriculture, Government of Sindh.

The most popular commercial varieties of rice are IRRI-6, Basmati and Hybrid, while others are meant for domestic consumption by farmers. Amongst all the rice varieties cultivated in Larkana, the proportion of IRRI-6 looked predominant during the recent four years which ranged from 84–88 percent (average 84%) whereas the cultivation of ‘Basmati’ variety varied from 2–8 percent (average 5%). The share of ‘Hybrid’ variety averaged about 10 percent during the same period.

Average production of cleaned rice, based on total of all varieties, during 2009/10 to 2012/13 period, was 365,705 tonnes per annum including 303,027 tonnes of IRRI-6 which is 84% of the total rice production. The average yield of IRRI-6 and Basmati varieties during the same period worked out to 3,860 kg/hectare and 1,462 kg/hectare, respectively. Therefore, the maximum quantum of clean rice production that can be expected from Larkana district could be of the order of 365,705 tonnes of cleaned rice per annum. If the cleaned rice is converted back to paddy, using a conversion factor of 1.70 (based on grain: straw paddy ratio of 0.70:0.30) the total production of paddy should be around 475,416 tonnes per annum.

➤ **Paddy Prices in Larkana Market and Around**

The market rate of Paddy (IRRI-6) in Larkana during October 2013, as reported by Dy. Director of Agriculture Extension, Government of Sindh, ranged from Rs.700 / 800 per 40 kg or an average rate of Rs.750 per 40 kg. However, in the neighboring towns of Shikarpur and Jacobabad these were higher as Rs.981/40 kg in Shikarpur and Rs.888 /40 kg at Jacobabad. The overall average rate for Sindh province is estimated at Rs.898 / 40 kg. It is therefore obvious that paddy rate of Rs.750 / 40 kg at Larkana market during October 2013 were the lowest.

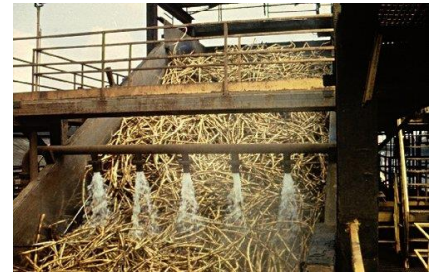
As a general rule of economic theory, this situation would prevail if (i) supply is in excess of demand obviously because of competition between growers or (ii) if the buyers in local market temporarily suppress their factual demand for paddy and only make token purchases, and/or (iii) mill owners may form buyers' cartel to dictate monopolistic purchase price with the intention to keep the paddy market rates at the minimum. Moreover, in comparison to numerous farmers, who are generally disunited and are also in hurry to sell paddy due to their poor holding capacity / weak financial position, the buyers/(mill owners) are fewer in number and unite quickly to dictate prices. Paddy prices in Larkana market would tend to increase whenever there was an influx of outstation buyers which would naturally generate additional demand. This clearly shows a need for better marketing network having links with traders in Karachi as well as with international importers.

2.2.4 Agro Processing

Larkana city is a good market for transaction of agricultural production especially for rice, rapeseed/ mustard, barley and wheat, which are grown in the adjoining rural area in appreciable quantities. Although wheat is a staple crop but its cultivation is not more than 5-6 percent of the total provincial area. Likewise sugarcane is a cash crop and bulk of it is sold to Naudero Sugar Mills near Larkana, but surprisingly its area is less than 0.5% of the total provincial acreage under sugarcane. Rice and sugarcane both have high water demand and are also mutually competitive vis-à-vis land and irrigation water. However, rice crop is readily purchased by numerous rice husking mills operating within Larkana taluka and as such farmers prefer to cultivate this crop rather than go for sugarcane.



The industrial processing of paddy-rice is fairly established in the district because many rice milling units are operating in Larkana taluka. Rabi oilseeds- (rapeseed and mustard) - is partly processed by local oil expellers in Larkana city while the rest is purchased by traders from other districts of Sindh for oil extraction at their respective places. There is therefore need for establishing more oil extraction factories in Larkana.



➤ **Oil Seeds Edible Oils**

Oilseeds in Larkana District have bright chances of succeeding as a commercial crop. This is more so because Pakistan is increasingly importing edible oil each year. Therefore, to reduce import content of edible oil and to encourage indigenous oil seed production, import substituting industry in the edible oil seed sector is very essential. It is also necessary to curtail imports and preserve foreign exchange earnings.

Over the last eight years (2004-2012) the total amount spent on imports of edible oil into Pakistan has increased more than four times during (2004-2012). At present the total requirement of edible oil in Pakistan is 2.045 million tonnes. During FY 2010-11 the total requirement of edible oil was 3.08 million tonnes of which local production contributed only a small proportion of 0.696 million tonnes or 34% of the requirement while import of oil or oilseeds was 2.38 million tonnes. The import bill reached a huge sum of US \$ 2.611 billion, equivalent to Pak Rs.224 billion during 2010-11 fiscal years.



➤ **Horticulture**

The climate of Larkana district is suitable for growing guava, lemon, mango and date. Good quality of mangoes and guavas are generally grown in Larkana, Ratodero and Dokri talukas. Guava is the most popular fruit grown on large scale in Larkana taluka although some mango gardens also exist. The Larkana variety of Guava has become a brand name and as such it is marketed throughout Pakistan by the same trade name. Hence, Larkana variety enjoys a premium over price of other guava varieties.

The cultivated acreage and production of guava including other fruit in Larkana district has been expanding gradually over the years. Some benchmark data for the last four year 2008 - 2011 is given in the table below:

**DATA FOR THE LAST FOUR YEARS FOR
LARKANA DISTRICT**

Year	Guava	Mangoes	Lemons	Dates	Ber
2008	3,982	228	NA	102	NA
Area (hectares) Production (mt)	29,449	1,481		1,260	
2009	4,705	209	NA	100	NA
Area (hectares) Production (mt)	30,194	1,281		1,240	
2010	4,705	169	NA	100	NA
Area (hectares) Production (mt)	36,182	1,069		1,137	
2011	5,138	171	NA	106	NA
Area (hectares) Production (mt)	40,121	1,065		1,187	

Source: Department of Agriculture, Government of Sindh.

Unfortunately, more than 50% of guava production goes waste due to lack of processing facilities, cold storage and swift transportation facilities to markets.

2.2.5 Forestry

Ratodero, Dokri and Larkana taluka have continuous belt of forest in the eastern parts. According to provincial Bureau of Statistics, Government of Sindh, there were 25,532 hectares of forests in 1997-98 which increased to 79,030 hectares in 2003-04. Since then there was no change and it remained constant⁴ till 2006-07 which is the last year covered in Development Statistics of Sindh 2008. The total quantity of Timber/ Fire wood obtained in Larkana district along with provincial figures is given in the table below:

⁴ Development Statistics of Sindh 2008, (latest published), Bureau of Statistics, P&DD, GoS, Karachi, pp-144

FOREST PRODUCTION

Description	Forest Production – (tonnes)				Gr. factor	Projected 2011-12
	2003-04	2004-05	2005-06	2006-07		
Larkana Dist.						
- Timber	1,260	90,035	70,467	75,467	1.4088	106,320
- Firewood	-	115,000	122,076	121,076	0.9597	116,198
-Total	1,260	205,035	192,543	196,543	1.1083	217,823
Sindh Province						
- Timber	1,941,842	1,792,698	2,377,019	2,386,239	1.0195	2,423,468
- Firewood	1,007,218	810,640	1,221,727	1,219,946	0.9927	1,212,847
- Total	2,949,060	2,603,338	3,598,746	3,606,185	1.4889	5,358,297
Larkana as % of Sindh	0.04	7.88	5.35	5.45		4.07

Source: Basic data from Development Statistics of Sindh 2008, BOS, P&DD, GOS, Karachi, page 144-148.

It can be seen from data in the above table that total forest production (Timber and Firewood) over 04 years has varied in Larkana district as well as Sindh province. Compared to the provincial figure, forest production in Larkana district has fluctuated between 0.04 to 4.07 percent, except remaining high at 7.88% in 2004-05. The four yearly average production of forest in Larkana district worked out to 4.67% or say 5% of Sindh province. Considering the physical output of wood, the proportion of district production to that of Sindh province may not be significant but in monetary terms the value of wood produced in Larkana district could be much higher.

The average wholesale price of firewood (mixed dry) in 03 major markets of Sindh province (Karachi, Hyderabad, Sukkur) for the last ten years is estimated at Rs.117.43 per kg or Rs. 1,174 per tonne. Using FY 2011-12 projected combined production figures of timber and firewood for Larkana Taluka and the ten yearly average annual wholesale price of firewood (mixed dry) in 03 principal markets of Sindh, the total value of taluka projected wood production is estimated at Rs.255.73 million per annum.

2.2.6 Industrial Establishment

➤ Sindh Industrial Policy 2010

The Sindh Industrial Policy was framed for the first time in 2009-10 to accelerate pace of industrial growth in Sindh province with a corresponding improvement in economic development. Its basic objective was to distribute the achieved twin benefits to the grass root level so that standard of living of the people may be improved coupled with alleviating poverty from the masses by liberal expansion in the job opportunities. In order to achieve these objectives, the Industries and Commerce Department, Government of Sindh had initiated in the past some major policy changes as enumerated below:

- The Government switched over its policy from regulatory to facilitation towards stakeholders.
- Decided to reduce its interference in the private sector to the bare minimum.
- Done away with the NOC culture (except for setting up sugar mills) by liberalizing the industrial location policy except for a few strategic industries like Arms and Ammunition, Security Printing, Currency and Mint, high explosive and Radio Active Substances.
- Certain inspections were abandoned, which caused unnecessary problems and hindrances in their day-to-day work.
- Resolved to upgrade domestic industry from “Low Tech Low Value” to “High Tech High Value” with twin headed approach such as:
 - a) Extension of all of possible facilitation to attract direct foreign investment, and
 - b) Providing latest infrastructure facilities by establishing large industrial estates of international standard, with state-of-the-art infrastructure facilities
- Prominent Objectives of Industrial Policy
- To promote balanced rural and urban industrialization with focus on agro and mineral based industries in rural areas and export-oriented and high tech industries in urban areas
- Shifting of industries and flight of capital from Sindh Province to be stopped
- SME sector in close co-ordination with BOI and SMEDA be developed
- Encourage entrepreneurs for investing in value added products rather than raw material

➤ **Potential Industrial Sectors in Sindh**

According to a survey undertaken in the past by Industries Department, Government of Sindh, the following sectors were found emerging as most potential Industrial Units:

Textile, Agro based Industries, Agro Processing, Mining and Mineral, Energy, Heavy Engineering, Light Engineering, Auto Industry and Iron and Steel.

➤ **Industrial Establishments in Larkana Taluka**

Cotton and Woolen textiles mills were established in Larkana during 1970s while another one called “PIDC Textile Mills” was established at Shahdadkot in 1980. All of these mills were closed down as they were located away from the production areas for the raw material required for these mills. However, the most significant and commercially viable industrial activity in Larkana is “Rice Husking”. There were as many as 54 rice milling units in Larkana District of which 32 numbers (59%) alone were based in Larkana Taluka, employing more than 514 workers per shift of 8 hours. The next in importance to Rice Milling is “Ice Making” activity. There are as

many as 28 Ice Factories in the Larkana District of which 19 are located in Larkana Taluka employing 81 workers per day. Ice making is generally considered low or less “labour specific” job. The entire ice manufacturing process would need 3-5 persons per factory as reflected from the data provided by the Directorate of Industries, Government of Sindh. The production capacity ranged between 60-250 blocks of ice per day per factory but the actual production ranged between 80-100 blocks per day.

➤ **Employment Generation**

Employment provided in each taluka of Larkana district by Rice husking mills and Ice factories is shown in the below table:

**EMPLOYMENT SITUATION IN INDUSTRIAL UNITS
OF LARKANA DISTRICT**

Taluka	Rice Mills		Ice Factories		Total No. (Rice Mills & Ice Factories)		Total % (Rice Mills & Ice Factories)		Labor per Unit (Rice Mills & Ice Factories)
	Units (No.)	Labor (No.)	Units (No.)	Labor (No.)	Units (No.)	Labor (No.)	Unit %	Labor %	
Larkana	32	514	19	81	51	595	62%	58%	11.67
Ratodero	15	269	5	22	20	291	24%	29%	14.55
Dokri & Bakrani	7	120	4	14	11	134	13%	13%	12.18
TOTAL	54	903	28	117	82	1020	100%	100%	12.44

Source: Prepared from data in “Industrial Establishments in Sindh-Directory”, Directorate of Industries, Government of Sindh, Karachi.

Similar to Ice factories some additional low profile industrial units are currently based in Larkana. The Sindh Small Industries Corporation had established an Industrial Estate in Larkana with 45 small industrial units functioning as self-employment scheme while 43 units were functioning under Small Industrial Estate’. These units fall in the following groups:

- Oil Expellers
- Vegetable Ghee manufacturing units
- R.C.C. Pipe factory
- Building material (cement block making units)
- Da'al making Chakkies
- Chakkies for Wheat grinding (flour making)

➤ **Future Strategy**

In line with the Sindh Industrial Policy 2010 and specific potential and needs of Larkana, the future strategy for industrial development is recommended as:

- Rehabilitation of Infrastructure in existing Small Industrial Estate (roads, street lights, parking for loading/unloading goods vehicles, etc)
- Increase strategic storage through construction of cold storage / Godowns for agro products
- Extension of Small Industrial Estate on western side to meet the additional demand
- Provide good incentives near peripheries for shifting / re-location of whole sale markets from the inner city to reduce congestion
- Prepare zoning plan for the area along Moen-Jo-Daro Airport Road for control of Development
- Expedite development work of Larkana Industrial Estate in Arija through phase wise infrastructure development in next five years
- Encourage Local Private Investors by giving them subsidies
- Consider changing trends of crop production through periodically revised Economic Policy Framework (feasibility studies for economic potentials)
- Ensure measures for security / risk recovery plan for economic zone
- Market and logistics should also be added to enhance trade and commerce
- Livestock and dairy sector needs to encourage and facilitated
- Relocation of wholesale markets are needed to create connectivity with regional markets

2.3 Social Sector

2.3.1 Health

Larkana City is blessed with a number of higher order health and educational facilities. Specialized tertiary level hospitals are serving the regional population but need certain improvements for better quality of service. The data on secondary and primary level health facilities is weak as the quality of service to the population is not just dependent on number and size of physical facilities but also on the availability of medical staff and medicines etc. The hierarchy of health facilities, which is top heavy at present, needs to be rationalized.

For the improvement of health facilities there is a need of augmenting primary level health services by public sector, like BHU serving the outlying areas, to reduce pressure on the main hospitals. Surgical and diagnostic facilities and equipment need minor and major repairing and maintenance in the main hospitals. There is need of 199 doctors, 50 nurses and 23 other paramedical to fill already sanctioned position. Maintenance of existing incinerators in Chandka is required. New technologically more advanced incinerators in the main hospitals are also required.

Better health means better productivity, which is a prerequisite for accelerated economic growth. The target for the year 2033 is to provide two beds per 1000 projected population as per standard given in the National Reference Manual on Planning and Infrastructure Standards (NRM). The emphasis will be towards better quality and equitable spatial distribution of primary health services by Public Sector. In view of lack of staff and material, some parts of the hospital (like diagnostic services) may be outsourced to medical practitioners located in Larkana. There is proliferation of private hospitals, clinics and diagnostic laboratories in the city. It is important that there should be regulatory controls on such private facilities to ensure standard of service and sanitation. Awareness programs should be launched for the people to avail preventive health measures arranged by local administration.

2.3.2 *Education*

There is a shortage of schools and colleges for the present population if full enrolment is considered. But due to low enrolment ratio there are several schools and colleges which are not utilized properly. On the other hand, city also has private schools which cater for middle and high income groups. The schools and colleges expansion program will however need to take into account that the existing facilities are fully utilized first before new facilities are to be created.

There is a shortage of classrooms to the extent of 581 in primary and elementary schools and 382 in secondary and higher secondary. For the short term plan provision of 963 classrooms at different levels with the repairing of existing buildings and training of teaching staff is required.

The long term plan is to achieve 100% enrolment with 1:1 male/female ratio by 2033, for which 4,900 additional classrooms will be required. This need could be fulfilled either by addition in existing buildings or more new schools and colleges will be constructed in future to serve estimated student population of 158,000 upto 2033.

The spatial distribution of schools is lopsided. One of the reasons for this is that the Education Department, as a policy, constructs schools in the localities where free government land is available or where the land is provided by the community free of cost. In most of private sector development schemes and in informally developed communities, no amenities plots are provided for schools therefore, government schools are not constructed. This policy has resulted in the unequal distribution of schools. There is a strong case to change the government policy on school land and funds for purchase of land should be included in construction budget. In the short term, where no land is available, the schools could be opened in rented buildings.

- **Higher Education:** Larkana is the focal point for the higher education services for north Sindh. Higher education facilities include among others, Quaid-e-Awam University of Science and Technology, Shaheed Mohtarma Benazir Bhutto Medical University and SZABIST. These institutions serve a large catchment area stretching beyond the Larkana district and division's boundaries.
- **Vocational Training:** Skill development centers and vocational training institutes are to enable young men and women to be productive in the society and also to promote local handicraft. It is suggested to develop skill development centres and vocational training institutes for men and women on priority basis in less privileged areas to increase job opportunities for the upcoming youth.

2.3.3 *Housing*

Housing is a basic human need at the same time is an important contribution to the economy. Proper housing in healthy environment helps in healthy families improves learning capacities of children and increases productivity through fewer days lost to sickness. Housing is also one of the largest employers of skilled and unskilled labour, consumer of local construction materials, and supporter of construction material industry. Unfortunately the large section of the population which lacks proper housing is also the population who cannot afford decent housing. For the affordable housing, innovative solutions will need to be founded; otherwise the squatters and slums will keep on expanding.

The consultant's strategy for general housing (Lower middle and higher income groups is to leave it entirely to private sector groups to develop affordable housing. However for the lowest income groups who cannot afford to pay for any type of built housing areas should be ear marked for incremental housing which should be planned by public sector (Municipal Corporation or Development Authority) with the provision of outer development plots may be provided to incremental population and schemes dwells free of cost. They should be allowed to erect any kind of shelter initially and improve it gradually.

2.3.4 *Environment*

The River Indus Basin across Larkana district is contaminated by wastes coming in the form of waste water drainage, waste disposal and other toxins. These toxins adversely affect human and livestock health, agriculture crops, fishing, land and water quality.

Water Contamination during droughts had also threatened the habitat of many native species within district. Also live stock has also been seriously affected by this situation. The negative externalities of these disasters have now appeared in form of economic loss resulting in the increase of poverty.

- **Noise Pollution:** The study was carried out to measure the intensity of traffic noise pollution in the city Larkana. It was concluded that high level of traffic noise levels was observed due to un-planned and lack of sustainable planning. Environmental quality has been deteriorated due to ribbon developments. The data was collected from the nine different roads. As per noise guide lines of National Environmental policy the standard of Noise in Pakistan 85 dB. Noise pollution can be minimized through sustainable national development control approach in terms of sustainable physical planning. Following are the maximum and minimum levels of sound pressure:

TRAFFIC NOISE POLLUTION ⁵

S.No	Location Name	Sound Pressure Level	
		Min:	Max:
1	Sheikh Zaid Hospital Road	73	91
2	Lahori Mohalla Road	73	100
3	VIP road	70	91
4	Municipal High School Road	72	100
5	Bakrani Road	70	91
6	Bandar Road	72	91
7	Miro Khan Road	73	101
8	Jinnah Bagh Chowk	75	91
9	Qambar Road	72	100

- **Air pollution:** At present, monitoring of urban air pollution in Pakistan is limited to isolated instances where air pollutants measured for brief periods at selected locations. Urban locality, city, region or country wide continuous or repeated air quality monitoring data does not exist. Similarly, there is no formal system of air quality data storage and reporting. The result of EIA study conducted at Arija which is 18km away from the Larkana city is as followed:

AIR QUALITY⁶

S. No	Parameter	Units	NEQS Limits	Concentration	Method
1	Carbon Monoxide	mg/m ³	10	0	EVM7
2	Carbon Dioxide	ppm	.....	330	EVM7
3	Oxide of Nitrogen	ug / m ³	120	0	VRAE PGM-7840
4	Sulphur Dioxide	ug / m ³	120	O.O	VRAE PGM-7840
5	Particular Matter	ug / m ³	250	65	EVM7

⁵ Source: Critical study of roads traffic noise and land use, Research gate, Sep 2010

⁶ Source: Air quality data available in EIA study for Larkana Industrial Estate on Airport road 2013.

- **Water Quality:** Six nos. of water samples were collected from water courses, hand pumps, and stream sites during the field survey of various locations for water quality analysis. The water samples were measured using “pH” and “TDS” meter that was calibrated before being used in the field. The water samples from various locations/points were handled as per USEPA (US environmental protection agencies) sampling procedures. The parameters tasted for the water quality were pH value, TDS (total dissolved solids), Total Suspended Solids, Chloride, Total Hardness, BOD (Biochemical oxygen demand), COD (Chemical oxygen demand), Iron, Copper, Chromium, Phenolic Compounds, Alkalinity, Ammonia, Oil and Greases.

WATER QUALITY ⁷

S. No	Parameter	Units	NEQS Limits	Concentration	Method	Remarks
1	pH value	.....	6.5-8.5	7.09	pH	
2	Total Dissolved Solids	mg/l	< 1000	980	APHA 2540 C	
3	Total Suspended Solid	mg/l	< 5	< 5	HACH METHOD 8006	
4	Chloride	mg/l	< 250	202.35	APHA 4500 Cl C	
5	Total Hardness	mg/l	< 500	342.65	APHA 2340 C	
6	BOD	mg/l	-----	< 5	HACH BOD TRAK 10099	
7	COD	mg/l	-----	< 5	HACH METHOD 8000	
8	Iron	mg/l	-----	BDL	AAS	
9	Copper	mg/l	2.0	BDL	AAS	
10	Chromium	mg/l	< 0.05	BDL	AAS	
11	Phenolic Compounds	mg/l	< 0.002	0.18	MERCK CELL TEST 14551	Higher
12	Alkalinity	mg/l	-----	BDL	APHA 2320 B	
13	Ammonia	mg/l	-----	0.40	HACH METHOD 8038	
14	Lead	mg/l	< 0.05	BDL	AAS	
15	Oil & Grease	mg/l	-----	BDL	SOLVENT EXTRACTION	

2.3.5 Recreation

In all zones there are parks of different sizes and standards, which are in-sufficient and poorly maintained. However, the city lacks amusement parks, leisure areas, zoo, water parks etc. which should be provided in future.

The strategy for recreational facilities includes:

- Repairing of existing recreational facilities and completion of under construction work.

⁷ Source: EIA study for Larkana Industrial Estate, Arija city, Global Environment Management Service, 2013.

- Introduce financial mechanism (like charging fee) for public parks and playgrounds to make them self-sustaining.
- Special arrangement for security, parking and alternate route during religious and cultural activities in the city.
- Revitalization of existing Cinemas (conversion to mixed use building i.e. shopping, entertainment and cineplexes).
- Provision of touristic facilities for Moen-Jo-Daro.
- Encourage Private Investment in recreational sector
- Provide city scale Zoo and Amusement/ Water Park facilities for future, possibly on the Airport Road.

2.3.6 *Tourism*

Tourism sector provides tremendous economic spin off for the national economy. Tourism is the major foreign earning sector for several countries of the world and is a major contributor to their GNP. Despite having a glorious past and the world heritage site of Moen-Jo-Daro which could attract thousands of tourists, the tourism in Sindh has remained a much neglected sector. A proper tourism complex needs to be developed next to the archeological site close to the airport with, tourist accommodation of various categories including 3-4 star hotels, recreational areas including golf course, entertainment and leisure facilities for all ages, shopping areas, souvenir and gift shops, conference centre, parks and gardens including botanical garden and zoo etc. This complex could be one point complete family holiday as well as research and study area. The Government will only have to provide land and infrastructure and private sector will develop facilities on PPP or BOT basis. Being close to the airport and having its own security will attract a lot of domestic and foreign tourists if private sector is facilitated for proper marketing and tour packaging. The direct investment and ripple effect of tourists' spending will give a boost to the economy of Larkana.

2.4 Integrated Assessment of Local Economy

2.4.1 Demography

- Larkana's overall population distinguish by the general values of human resource that are very powerfully affecting the lives of the people, for the upgrading of the human lives the fewer values of the importance is the production regarding the young population of the source for the economic development and their trainings for the skill courses for the overall productive assets of the economic development. The new urban areas give results for having new style of life with new social mobilization. Growth of the 284% of population of Larkana from 1951 to 1998 is very redefining in haphazard direction. New growth advantages and disadvantages are as follow

ADVANTAGES	DISADVANTAGES
New commercial and economic activities	Stress on municipal services
New business investment	Stress on physical resources
Employment opportunities	Stress on infrastructure

- As for the population growth is adversely affecting the employment part very affectively for about 11.04% on overall district. Mostly the people are self employed and rural base people are engaged in elementary occupation. Lastly in 1998 2/3 of population is engaged in agriculture, forestry, fishing sectors. If the populations main part is female growth sector which is not playing the part in economic development should make is the female force should include in different economic activities. Mainly the large number of jobs is about 1, 84,000 by 20 years of period of time. For this part we have to know the equal education ratio of the male and female for both urban and rural areas.

2.4.2 Economic sector

- The economy of Larkana is largely shaped by extensive cultivated area in Larkana District producing rice, wheat and mustard among crops and Guava among fruits. There is a very small industrial area mainly accommodating agro-based processing industries such as rice mills, flour mills and ice factories with some service industries to support the main industries.
- Rice is major agricultural product of Larkana. Rice contributes 10-14% in the total production of food crops in Pakistan. The share of Sindh province in total

rice production of Pakistan is slightly over 30%. Hence the share of rice production of Larkana district in the total production of rice in Pakistan is about 11%. Larkana district represents as regional rice production centre in Sindh. Rice production is the major source of economic and plays major role for the development of district. It is major source of foreign exchange earnings in last year's. Tomato and guava are the second largest agricultural products of Larkana district. Cold storages and ware houses required to reduce the wastage and boost the consumption of seasonal products like tomato and guava.

- Small industrial units of rice husking are the most significant and economically viable activity in Larkana district. There were as many as 150 rice milling units in Larkana district of which 32 numbers 20% alone were based in Larkana taluka, employing more than 514 workers per shift of 8 hours.
- The next in importance to Rice Milling is “Ice Making” activity. There are as many as 47 Ice Factories in the district of which 19 are located in Larkana city employing 184 and 81 workers respectively per day. Ice making is generally considered low or less “labor specific” job. The entire ice manufacturing process would need 3-5 persons per factory as reflected from the data provided by the Directorate of Industries, Government of Sindh. The production capacity ranged between 60-250 blocks of ice per day per factory but the actual production ranged between 80-100 blocks per day.
- Larkana district have continuous belt of forest along the river Indus in the eastern parts. Major production of timber and fire wood obtained in the Larkana district.

The future strategy proposal for industrial development for Larkana is below:

- Rehabilitation of Infrastructure in existing Small Industrial Estate (roads, street lights, parking for loading/unloading goods vehicles, etc)
- Increase strategic storage through construction of cold storage / Godowns for agro products
- Extension of Small Industrial Estate on western side to meet the additional demand
- Provide good incentives near peripheries for shifting / re-location of whole sale markets from the inner city to reduce congestion
- Prepare zoning plan for the area along Moen-Jo-Daro Airport Road for control of Development
- Expedite development work of Larkana Industrial Estate in Arija through phase wise infrastructure development in next five years
- Encourage Local Private Investors by giving them subsidies
- Consider changing trends of crop production through periodically revised Economic Policy Framework (feasibility studies for economic potentials)

- Ensure measures for security / risk recovery plan for economic zone
- Market and logistics should also be added to enhance trade and commerce
- Livestock and dairy sector needs to encourage and facilitated
- Relocation of wholesale markets are needed to create connectivity with regional markets

2.4.3 *Health*

- Larkana having a very strategic position in north Sindh provides high level of health services to the region. The target for the year 2033 is to provide two beds per 1000 projected population as per standard. The emphasis will be towards the better quality and equitable spatial distribution of primary health services by public sector.
- In view of lack of staff and material, some parts of the hospital may be outsourced to medical practitioners located in Larkana.
- There is proliferation of private hospitals, clinics, and diagnostic laboratories in the city. Standard regulatory authority should be present for the monitoring of services which are provided and sanitation. Awareness programme should be launched for the people to avail preventive health measures arranged by local authorities.

2.4.4 *Education*

- There is a shortage of schools and colleges for the present population if full enrolment is considered. But due to low enrolment ratio there are several schools and colleges which are not utilized properly. On the other hand, city also has private schools which cater for middle and high income groups. The schools and colleges expansion program will however need to take into account that the existing facilities are fully utilized first before new facilities are to be created.
- There are good opportunities available for the higher education and vocational trainings.
- There is a shortage of classrooms to the extent of 581 in primary and elementary schools and 382 in secondary and higher secondary. For the short term plan provision of 963 classrooms at different levels with the repairing of existing buildings and training of teaching staff is required.
- The long term plan is to achieve 100% enrolment with 1:1 male/female ratio by 2033, for which 4,900 additional classrooms will be required. This need could be fulfilled

either by addition in existing buildings or more new schools and colleges will be constructed in future to serve estimated student population of 158,000 up till 2033.

2.4.5 *Housing*

- Housing is a basic human need at the same time is an important contribution to the economy. Proper housing in healthy environment helps in healthy families improves learning capacities of children and increases productivity through fewer days lost to sickness. Housing is also one of the largest employers of skilled and unskilled labor, consumer of local construction materials, and supporter of construction material industry. Unfortunately the large section of the population which lacks proper housing is also the population who cannot afford decent housing. For the affordable housing, innovative solutions will need to be founded; otherwise the squatters and slums will keep on expanding.
- The proposed strategy for general housing (Lower middle and higher income groups is to leave it entirely to private sector groups to develop affordable housing. However for the lowest income groups who cannot afford to pay for any type of built housing areas should be ear marked for incremental housing which should be planned by public sector (Municipal Corporation or Development Authority) with the provision of outer development plots may be provided to incremental population and schemes dwells free of cost. They should be allowed to erect any kind of shelter initially and improve it gradually.

2.4.6 *Environment*

- The impact of every day deteriorated environment and its impacts upon local economy is the issue of concern in Larkana. The River Indus Basin across Larkana district is contaminated by wastes coming in the form of waste water drainage, waste disposal and other toxins. These toxins adversely affect human and livestock health, agriculture crops, fishing, land and water quality. Water Contamination during droughts had also threatened the habitat of many native species within district.
- Other issues of concern include increase of noise and air pollution. It has been found out that high level of noise and air pollution is mainly caused by un-planned street pattern of recent developments and lack of implementation of sustainable planning parameters.
- To make improvements in local environment quality studies on condition of existing natural features are essential for future. For improvement in water quality, it is necessary to built water purification infrastructure. The noise and air pollution provisions could only be reduced by development of mass transit system and sustainable urban form patterns for new developments.

3. SWOT ANALYSIS MATRIX

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
3.1 Demography				
a	Composition			
	<ol style="list-style-type: none"> 1. Sizeable potential work force as 50 % population in age group 15 to 64 years including females 2. High growth rates provide a large base for future population 3. Different ethnic groups live in harmony 	<ol style="list-style-type: none"> 1. High rate of un-employment 2. Fewer skills and lack of training 3. Lack of job opportunities due to constraints of economic growth 	<ol style="list-style-type: none"> 1. Human capital is a potential resource for boosting economy 2. Offers opportunities for economic diversification 3. Could produce quality professionals through opportunities available for education and health 	<ol style="list-style-type: none"> 1. Intra state migration of skilled professionals 2. Unemployment (can give birth to social crime) 3. Possibilities of tribal strife.
b	Distribution			
	<ol style="list-style-type: none"> 1. Population redistribution has started 2. Sufficient land available 	<ol style="list-style-type: none"> 1. Housing industry is not fully geared to meet demand 2. Government not taking measures for providing low income housing 	<ol style="list-style-type: none"> 1. Townships may develop on the outskirts 2. Private developers to be encouraged for developing low income housing 	<ol style="list-style-type: none"> 1. Higher room densities and house hold size 2. Uncontrolled informal development

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
c	Change			
	<ol style="list-style-type: none"> 1. Large number of highly educated and trained manpower in education and health sectors 2. Tertiary education and health services provide a strong focus for migration to Larkana 	<ol style="list-style-type: none"> 1. Migration of skilled professionals to larger cities 	<ol style="list-style-type: none"> 1. Health and education sectors can attract migrants from surrounding localities 2. Opportunities for turning Larkana in to a strong regional centre 	<ol style="list-style-type: none"> 1. Infrastructure deterioration
3.2 Economy Sector				
a	Agriculture			
	<ol style="list-style-type: none"> 1. Availability of rich and fertile agricultural land 2. Major rice production area 3. Larkana is famous for guava production 4. Healthy environment 5. Agricultural land is well served by irrigation / canal network 	<ol style="list-style-type: none"> 1. Low productivity 2. Low yield varieties such as Irrigation-6 3. More than 50% of guava crop is lost 4. Improper use of cultivated land parcels 5. Poor transportation for delivering agricultural products from field to market 	<ol style="list-style-type: none"> 1. Potential for higher production through Increased yields. 2. Introducing certified seeds. 3. Processing industry, cold storage and exports should be encouraged for guava. 4. Well organized delivery of agricultural goods in regional and international markets will also boost local economy 	<ol style="list-style-type: none"> 1. Disaster (flood & drought). 2. Conversion of agricultural land into housing estates at periphery. 3. Monopoly of landlords in seed distribution 4. Land grabbing mafia. 5. Losing agricultural land to urbanization pressure. 6. Rice being the major crop and life line of Larkana's economy will lose production if hybrid varieties not used. 7. Farmers losing profits may turn to other crops.

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
b	Trade & Commerce			
	<ol style="list-style-type: none"> 1. Very active Chamber of Commerce & Industry 2. Financial institutions are present in Larkana 3. Strong local retail 4. Large number of local skilled artisans available 	<ol style="list-style-type: none"> 1. No control over crop market rates 2. Unplanned local business activities 3. Less participation of women in labour force for industrial sector 4. Lack of awareness regarding micro finance opportunities offered by financial Institutions 5. Lack of market mechanism 6. Banks are reluctant to open L/C for local traders 7. Trade mostly through outsider traders 	<ol style="list-style-type: none"> 1. Market network for direct export from Larkana 2. Local economy will improve if banks are more progressive 3. Agricultural surplus available for trade 4. Homegrown handicrafts can be promoted through proper exposure to export markets 5. Large number of business interest groups available 	<ol style="list-style-type: none"> 1. Farmers/ local traders are exploited by middle men or Karachi traders 2. The producer does not get good returns of exportable surplus 3. Security issues (which lead a large number of agriculturists and business persons to migrating from the city) 4. Low subsidies provided by local and provincial government
c	Industrial			
	<ol style="list-style-type: none"> 1. Raw material for agro-processing industries available 2. 500 Acres land allotted for Industrial estate on Airport Road 3. Availability of labour force 4. Active participation of SSIC (Sindh Small Industrial Corporation) 	<ol style="list-style-type: none"> 1. Lack of proper infrastructure 2. No development has taken place in the new Industrial Estate 3. Shortage of large scale developed Industrial land 4. Inadequate infrastructure provisions at existing small industrial estate 5. Lack of proper administrative setup to guide industrial activities & update business record of production 6. Lack of warehousing space 	<ol style="list-style-type: none"> 1. Industrial estate should be developed which will increase investment and job opportunities 	<ol style="list-style-type: none"> 1. Larkana's economy could face stalemate and people would lose jobs 2. Lack of security and enforcements 3. Shortage of power supply & gas 4. Industrial development in unplanned manner

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
d	Tourism			
	1. Moen-Jo-Daro is a world heritage site and a potential tourist attraction	1. Touristic infrastructure in lacking	1. Moen-Jo-Daro should be developed as world class tourist resort to generate income and foreign exchange	1. Salinity water logging in Moen-Jo-Daro 2. Security environment 3. Drought / floods
e	Livestock & Fisheries			
	1. Local skills and vet services available 2. Mechanism for milk collection available 3. Favorable environment for livestock growth (Pasture) and poultry farming in surroundings of city	1. Large scale breeding has not developed 2. Lack of facilities to industrialize livestock based products	1. Cooperative dairy farming and in-land fisheries has sufficient scope 2. Large pasture land and labour force available for livestock growth 3. Livestock based products can enhance economic activities if produced through appropriate industries	1. Theft and security issues 2. Losses due to Disasters (floods and epidemics)
f	Forestry			
	1. Approximately 25,500 Hectares (63,000 Acres) area of forest land available	1. Over cutting / thinning out of density	1. Aggressive plantation to increase timber and fuel wood	1. Theft 2. Over cutting, deforestation
g	Informal Sector			
	1. Very active informal sector in retail and housing 2. Significantly contributes in local economy 3. Offers job opportunities to youth 4. Contributes in small scale industrial development	1. Lack of resources and public control. 2. Lack of effort to regularize informal sector (Katchi abadis) into formal sector and provide basic facilities 3. Conversion to commercial use particularly in residential areas 4. Land grabbing	1. With proper guidance and financial help can make positive contribution in local economy	1. Spread of road side encroachments and Katchi Abadies (slums)

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
2h	Business Climate			
	<ol style="list-style-type: none"> Progressive entrepreneurship available Strong financial services 	<ol style="list-style-type: none"> Lack of infrastructure Dependent on regional market products due to lack of local production Unplanned growth of business sector along inner city streets Gave birth to encroachments 	<ol style="list-style-type: none"> Larkana Chamber of Commerce & Industry needs to be guided and assisted with incentives 	<ol style="list-style-type: none"> Local entrepreneur would be encouraged to invest in larger cities. Security Issues.
3.3	Social Services			
a	Public Safety			
	<ol style="list-style-type: none"> Good administrative & law enforcement setup exists for public security purpose 	<ol style="list-style-type: none"> Law enforcement agencies failed to apply safety impediments for the protection of local communities Adoptability of poor administrative mechanism for operating local security matters Political Influence is an impediment in governance and administration 	<ol style="list-style-type: none"> Improvements in public safety measures implemented through proper security mechanisms will ultimately produce maximum economic benefits 	<ol style="list-style-type: none"> Theft Law & order Situation Communal strife/ tribal clashes
b	Sports & Recreation			
	<ol style="list-style-type: none"> Sports and recreation facilities are available within city Interest groups exist s to avail these facilities 	<ol style="list-style-type: none"> Poor maintenance Unplanned landuses in grounds 	<ol style="list-style-type: none"> Properly maintained and managed sports & recreation infrastructure will improve health and livelihood of local communities Engage youth in positive social activities that builds peaceful societies 	<ol style="list-style-type: none"> Land grabbing. Poor health and efficiency of youth and labour Crime/ frustration Lack of healthy activities attracting youth towards unhealthy and anti social activities

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
c	Culture			
	<ol style="list-style-type: none"> 1. The indigenous cultural activities of various social groups and minorities in Larkana comprise many events that attract people from its surrounding localities 2. Strong potential for producing culturally ornamented products used in daily life 	<ol style="list-style-type: none"> 1. Poor Management for organizing cultural events 2. Lack of infrastructure to accommodate visitors into such events. 3. Lack of opportunities to commercialize / merchandize cultural goods 	<ol style="list-style-type: none"> 1. If organized appropriately could generate handsome amount of revenues with other spin-off effects 	<ol style="list-style-type: none"> 1. Security Threats 2. Demise of cultural values and norms
d	Health			
	<ol style="list-style-type: none"> 1. Good quality health facilities infrastructure exist in the form of hospitals, clinics, dispensaries, and private clinics, etc. 	<ol style="list-style-type: none"> 1. Staff shortage 2. Poor administration 3. Absenteeism of staff in public institutions 4. Shortage of appropriate medical equipments and medicines 	<ol style="list-style-type: none"> 1. As a strong tertiary health service centre Larkana can become focus of urbanization 	<ol style="list-style-type: none"> 1. Poor health condition of local communities 2. Spread of diseases 3. Out migration 4. Poor productivity
e	Education & Literacy			
	<ol style="list-style-type: none"> 1. With the presence of reputable professional educational institutes, city is serving a large number of regional population through its educational services and produces good quality professionals every year 	<ol style="list-style-type: none"> 1. Lack of consideration for merit appointment system of teaching staff 2. Absenteeism 3. Lack of appropriate teaching aids 4. Poor condition of school buildings & shortage of class rooms 5. Un-availability of play grounds within school buildings 	<ol style="list-style-type: none"> 1. Education services mark steady growth in urbanization process 2. Highly qualified professionals are intellectual assets 	<ol style="list-style-type: none"> 1. Illiteracy, dropouts 2. Discrimination (appointments of non-meritorious teaching staff 3. Poor health of youth 4. Resistance to female education

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
3.4 Housing				
a	Housing Situation			
	<ol style="list-style-type: none"> Approximately 70-80% population lives in self owned houses The trend of rental housing is low Private sector is active in providing housing 	<ol style="list-style-type: none"> Large house hold size Single or Two bedroom houses are high in quantity Poor quality of general housing 	<ol style="list-style-type: none"> Projects of low income housing with appropriate infrastructure & sufficient utility services can overcome the housing shortages & offer healthy living environment Opportunities for micro financing for house construction, repair & purchase through financial institutes will reduce the housing demand 	<ol style="list-style-type: none"> Homelessness/ poverty Slums Poor access to housing finance
b	Housing Services			
	<ol style="list-style-type: none"> 88% Pucca Houses 80% of houses have toilets inside the house Electricity is available to 97% of residents Gas supply is available to 88% of residents 	<ol style="list-style-type: none"> Lack of proper water supply system Lack of efficient drainage system Poor solid waste management system 	<ol style="list-style-type: none"> Improvements in housing utility services will improve lifestyles 	<ol style="list-style-type: none"> Environmental Degradation Frustration among residents Social disorders
c	Affecting Policies			
	<ol style="list-style-type: none"> Katchi abadies regularization policy in action National Housing Policy 2011 (under revision) 	<ol style="list-style-type: none"> Insufficient coverage for the lowest income groups 	<ol style="list-style-type: none"> The proper application of housing policy levers will smoothly deliver housing supply to mitigates housing shortages for low income people 	<ol style="list-style-type: none"> Development of slums & squatters Homelessness/ poverty Crimes and violence

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
d	Major Programs & Projects			
	<ol style="list-style-type: none"> 1. SMBBT - Sheheed Mohtarma Benazir Bhutto Townships (low income housing project), 650 plots 2. PHC- Peoples Housing Cell at Naudero Road, construction of 600 low income housing units in Larkana & distribute free of cost 3. 5 to 10 number of housing schemes from private developers 	<ol style="list-style-type: none"> 1. Un-fair distribution of subsidized housing 2. Low construction quality and lack of utility services for housing 3. High cost of land and construction in Larkana is beyond the affordability of low income groups 	<ol style="list-style-type: none"> 1. Considerable scope in expanding subsidized housing projects by government /NGOS 2. New projects will provide planned developments 	<ol style="list-style-type: none"> 1. Transformation of fertile agricultural land into housing estates at periphery
3.5 Environment				
a	Land			
	<ol style="list-style-type: none"> 1. Flat fertile land suitable for development 2. Rural rich fertile agriculture land that produces quality crops 	<ol style="list-style-type: none"> 1. Unplanned land uses 2. Limited availability of govt. land for future spatial growth 3. Incomplete development of agricultural land parcels (scattered agricultural growth) 4. Poor administration by agencies monitoring urban growth of the city 	<ol style="list-style-type: none"> 1. If treated through appropriate urban design principals & standards, can be transmitted into mixed land uses and strong activity centres 2. May increase productivity cultivated at full strength 	<ol style="list-style-type: none"> 1. Land shortage for new development. 2. Slum formation 3. Contamination of land in un-irrigated areas

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
b	Fresh Water Bodies			
	<ol style="list-style-type: none"> Huge irrigation canal based network available Main course of River Indus close by inland fisheries water ponds exist 	<ol style="list-style-type: none"> Water contamination due to waste disposal Rice Canal used for raw sewage disposal Contamination of standing water bodies created by rain and flood water at open lots is an invitation to malaria and dengue 	<ol style="list-style-type: none"> Temporary water bodies can be used for fish farming 	<ol style="list-style-type: none"> Contaminated water serious threat for human health Standing water gives birth to diseases Threat to agricultural land Affect agricultural production Water logging
c	Climate			
	<ol style="list-style-type: none"> Suitable for producing crops 	<ol style="list-style-type: none"> Rainfall shortages affect the efficiency of canal system 	<ol style="list-style-type: none"> Agricultural practices can be changed in accordance with weather condition for maximum production 	<ol style="list-style-type: none"> Droughts Heavy rains <p>Climate change affects agricultural production</p>
d	Air			
	<ol style="list-style-type: none"> Air quality in the rich agricultural belt is good for human health, and also keeps ecological balance in atmosphere 	<ol style="list-style-type: none"> Inner city air is polluted by high volume of traffic Rice production adds moisture in air 	<ol style="list-style-type: none"> Development planned with respect to air circulation can provide relief to inner city's polluted environment 	<ol style="list-style-type: none"> Air pollution Respiratory diseases
e	Urban Area & Areas Suitable for Urban Development			
	<ol style="list-style-type: none"> Land available for future development near Central Jail, Airport Road, Wagan Road upto Bugti Village and Ratodero Road 	<ol style="list-style-type: none"> Loss of agricultural land through land development for housing purpose Water logging Unplanned growth in outskirts Lack of utility services 	<ol style="list-style-type: none"> Mixed land uses may create activity centres High density will overcome housing shortages 	<ol style="list-style-type: none"> Land grabbing Slums Unplanned growth Threat to agricultural land

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
f	Risk & Hazard Prone Areas			
	1. Can be used for disposal of industrial toxic wastes & garbage disposal	<ol style="list-style-type: none"> Two union council areas of Larkana city fall into flood prone area category Urban areas exposed to flood due to low lying from the adjoining road Lack appropriate measures for flood water control 	<ol style="list-style-type: none"> Agriculture land near flood prone areas can be used for cultivating the crops that need more water Temporary fish breeding ponds could be created to boost fisheries sector 	<ol style="list-style-type: none"> Human safety Livestock safety Cultivated land
3.6 Land Use & Transportation				
a	Land Use Pattern			
	1. Mixed landuses (residential, commercial, industrial, administration)	<ol style="list-style-type: none"> Unplanned street network Absence public transport Ribbon type commercial development in residential neighborhoods 	<ol style="list-style-type: none"> Workability Promotes compact development. Activity centers (support local business) 	<ol style="list-style-type: none"> Encroachments Congestion On street parking (paid/unpaid) Reduced flow of traffic (low speed)
b	Modes of Transportation			
	<ol style="list-style-type: none"> Good national / regional connectivity through railway , air and road networks Local public transport provisions by auto-rickshaws 	<ol style="list-style-type: none"> Poor traffic management. lack opportunities for integrated transport provisions Lack of coordination between different transport operating agencies Possible use of rail for intra-city mass transportation 	<ol style="list-style-type: none"> Opportunities in the form of wide roads available for mass transit system development 	<ol style="list-style-type: none"> Security issues Economic losses due to transporters strikes Inconvenience due to traffic congestion

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
c	Road Network			
	1. Strong network of inter and intra city	<ol style="list-style-type: none"> Poor condition of roads Default road geometry Unplanned road space Open drains / drainage overflow 	<ol style="list-style-type: none"> Wider road space can be used to facilitate multiple transport activities by implementing road space design standards Adequate space available for street furniture installation 	<ol style="list-style-type: none"> Encroachments (political influence barrier against removal) Rain water (disaster) Un-authorized excavations
d	Road Capacity			
	1. Sufficient road right of ways in most new areas	<ol style="list-style-type: none"> Poor traffic management Poor administration (municipal) controls Insufficient right-of ways in relation to surrounding activity in commercial areas No parking space earmarked On street parking reduces road capacity 	<ol style="list-style-type: none"> Proper management can promote public transport, workability, on-street parking and appropriate street furniture 	<ol style="list-style-type: none"> Encroachments On-street parking Political involvement - barrier against encroachment removal
e	Ancillary Road Facilities			
	1. Appropriate road space available for street furniture installation in most locations	<ol style="list-style-type: none"> Lack provision of street furniture Unaesthetic streetscape Haphazard on street parking reduces road capacity 	<ol style="list-style-type: none"> After removal of encroachments adequate space available for traffic signs, lane markings and foot paths 	<ol style="list-style-type: none"> Encroachment Irregular on street parking

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
f	Transportation Terminals			
	<ol style="list-style-type: none"> Multiple transport mode terminals available A new bus terminal has been constructed in north-east of the city 	<ol style="list-style-type: none"> Poor design of bus terminals Poor maintenance of airport and railway station Poor administration and management control Encroachments around terminal sites 	<ol style="list-style-type: none"> If properly administrated and space utilized, could promote smooth flow of traffic on nearby corridors A new transport terminal for goods transport will facilitate timely supply of industrial goods 	<ol style="list-style-type: none"> Give birth to illegal public transport stands within and outside city Encroachments Traffic congestion
3.7 INFRASTRUCTURE				
a	Water Supply & Distribution			
	Nil	<ol style="list-style-type: none"> Boring water only source of water Absence of systematic water supply system and treatment plant Defunct water supply overhead tank Poor administrative setup for water supply management and distribution Absenteeism of staff of local water board department 	<ol style="list-style-type: none"> Adequate water resources available for water supply system development Extension of existing irrigation system will boost agricultural productivity 	<ol style="list-style-type: none"> Negative externalities on human and plant health Depletion of water quality due to “drains down”

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
b	Drainage & Flood Control			
	<ol style="list-style-type: none"> 1. Good administration setup and equipment exist to flood related disasters 2. A proper drainage network including man-force and machinery is existent 	<ol style="list-style-type: none"> 1. Existing drainage system has been choked due to siltation 2. Rice canal also used for sewage disposal 3. Open drain on street 4. Improper channelization of drains 5. Over flow of storm water drains 6. Lack of interest among stakeholders involved in disaster relief activities 7. Poor administrative control for operating existing drainage system of the city 	<ol style="list-style-type: none"> 1. The city's 50 year old drainage system needs revival through cleaning 2. Flood protection embankments on river Indus should be enhanced upto greater extent to provide maximum protection to surrounding villages 	<ol style="list-style-type: none"> 1. Rice canal's water has been contaminated by open drains 2. Flood disaster threat to local communities living near main course of river Indus 3. Open and overflowing drains impact human health and give birth to epidemic diseases
c	Irrigation			
	<ol style="list-style-type: none"> 1. A good network of irrigation system operated through barrage canals 	<ol style="list-style-type: none"> 1. Negligence regarding timely desiltation 2. Weak banks of irrigation canals 3. Un-treated disposal of solid waste in rice canal (irrigation artery) 	<ol style="list-style-type: none"> 1. Support agricultural activities 2. Opportunities for enhancement of agriculture through tube well irrigation 	<ol style="list-style-type: none"> 1. Flooding / over flow of water 2. Water contamination

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
d	Power Supply & Distribution			
	1. Strong electricity supply network	<ol style="list-style-type: none"> Shortage of electricity & power supply Poor maintenance of electricity supply infrastructure Estimation of power bill defaults reached Rs. 4 billion 	<ol style="list-style-type: none"> Increased capacity of grid station will minimize electricity shortage & maximize production Opportunities available for alternative energy production through solar energy, bio-gas/ bio-fuels. (availability of sunny days thought the year) 	<ol style="list-style-type: none"> Loadshedding Threat to agriculture and industrial production and overall economy Crime
e	Information & Communication Technology			
	1. Strong networks available for advanced technologies, e.g. internet, cellular networks, broadcasting, satellite communication	<ol style="list-style-type: none"> Lack of information dissemination regarding agricultural activities, public health, veterinary, disaster forecasting, etc 	<ol style="list-style-type: none"> Media can play important role in economic development and prosperity Immediate disaster forecasting through disaster emergency response centre Can marketing campaign support of development initiative 	<ol style="list-style-type: none"> Negative cultural and ethical exposure to young minds (youth), if not regulated properly
f	Sewage Collection & Disposal			
	1. The existing sewerage system facilitates 50% urban area of the city	<ol style="list-style-type: none"> Poor maintenance condition; garbage enters into sewers, which requires desilting Drain water is disposed of untreated into Rice Canal and SCARP drain Open sewers 	<ol style="list-style-type: none"> An appropriate sewerage system plan should be implemented Improvement of general hygiene/ public health by cleaning sewerage system Rice canal should be saved from toxic disposals The cleaning of rice canal will promote inland fisheries 	<ol style="list-style-type: none"> Public health Storm water flooding/ over flow of sewers Environmental degradation

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
g	Solid Waste, Toxic & Hazardous Waste Management			
	1. Municipal Corporation & NSUSC are responsible for operating mechanism for solid waste management	<ol style="list-style-type: none"> Poor financial and operational management Less awareness among local communities regarding household waste disposal There is no system to identify toxic wastes produced by various activities 	<ol style="list-style-type: none"> Appropriate measures should be adopted for collecting, sorting and re-cycling solid waste management SWM recycling will help to generate revenue Landfill sites should be identified for future disposals 	<ol style="list-style-type: none"> Sanitation Public health Drainage system Plant and animal Life
3.8 GOVERNANCE				
a	Planning Actors			
	<ol style="list-style-type: none"> Taluka Municipal Administration (TMA) Deputy Commissioner Office (DCO) Larkana Development Authority (LDA) Politicians Sindh Building Control Authority (SBCA) 	<ol style="list-style-type: none"> Lack of co-ordination Weak technical base of agencies Weak financial base of agencies There is no system to identify toxic wastes produced by various activities 	<ol style="list-style-type: none"> Strengthen the institutions, responsible for planning and execution 	<ol style="list-style-type: none"> Wastage of development funds Scarcity of local funds Infrastructure deterioration
b	Network within Local Government			
	<ol style="list-style-type: none"> Larkana Municipal Corporation / Taluka Municipal Administration Executive Offices of Line departments Politicians Sindh Building Control Authority (SBCA) 	<ol style="list-style-type: none"> Weak co-ordination mechanism 	<ol style="list-style-type: none"> Preparation of local co-ordination standard procedures 	<ol style="list-style-type: none"> Damage to infrastructure which is also the cause of financial losses Political interference

S. No.	STRENGTH	WEAKNESSES	OPPORTUNITY	THREATS
c	Local Council			
	1. Being a Municipal Corporation, has strong powers for governance including fund generation	1. Not actively pursuing the stated objectives 2. No councilor available at present	1. With awareness and training of councilors the local councils can be more effective	1. Confusion and chaos in the local development affairs at present until local bodies are established
d	Financial Resources			
	1. Local bodies law allows fund generation by the council	1. The council does not affectively pursue fund generation	1. Self sustainable financial system needs to be effectively followed	1. Poor maintenance of infrastructure and sanitation services

4. CONCLUSION OF SWOT ANALYSIS

Details of SWOT Analysis are given in the Annexure. The summary of the main findings of SWOT analysis are given in the following sections:

4.1 Strengths and Weaknesses

4.1.1 Institutional Capacity

Government agencies responsible for development of infrastructure, service delivery and operation and maintenance in Larkana have significant human and material resources and regulatory mechanisms at their disposal to undertake large scale development/redevelopment in multiple sectors.

However, their limited institutional coordination, financial capacity and less effort to engage local communities into planning process has resulted in ineffective use of budgetary resources and poor implementation of government policies.

4.1.2 Economy

Larkana has great economic potential in agriculture and agro – based industries; the economic growth can be accelerated by enhancing its agriculture sector production through medium scale industrial development and by establishing new infrastructure services for health and education sectors. A shift in local crop production and their marketing through local small or medium size entrepreneur, in presence of large labor force, adequate water resources and strong regional distribution networks, can produce maximum economic benefits.

4.1.3 Regional Service Center

The development of local education and health sectors at Larkana in last few years has also gained the attention of people from surrounding localities. Larkana's future development as a city offering enhanced provisions of health, education, recreation and commercial services, delivered through policy frameworks of sustainable development would help the city to grow as regional centre of economic production, infrastructure and services.

4.1.4 Governance

In the presence of multiple governance bodies aiming to exploit planning tools, the sustainable development seems relatively easy task. However, continuous change in local governance system in short span of time by Government of Sindh, created monopoly based situation between different governance agencies. As a result, development funds in Larkana have been massively spent only on developing / rehabilitating roads. On the other hand chronic problems like improving drainage system have been ignored by the governance authorities. Due to unfair distribution of resources and lack of management, present day Larkana lacks safe water supply and sanitation, suffers severe energy crisis and contamination of Rice Canal (City's main water body). Besides, unprecedented and

galloping inflation, unemployment and law and order situation has given rise to economic uncertainty and social unrest.

4.1.5 Private Participation

Larkana's present Chamber of Commerce and Industry is a very active local agency, which at present has taken keen interest in highlighting various development constraints, through various forums and strongly advocated development of new small industrial estate. It has extensive understanding of local issues through its partners, who are also keen to see Larkana growing as a regional trade hub and have emphasized on local needs that require immediate action.

4.2 Opportunities and Threats

Effective management of resources by government agencies provides a great opportunity for Larkana to move towards sustainable development. Implementation of successful sustainable development strategies in Larkana would also be able to influence the functioning of local government expected to rise in form of challenging goals and identify their weakness.

The paradigm of sustainable development on this one hand demands effective management of local resources and on other hand it aims to preserve such resources so that it can be consumed by future generations.

Success of sustainable development in Larkana largely depends on the capacity of local governance agencies to implement strategies by engaging their partners. Limited capacity (financial or understanding) of local governance agencies and their partners to implement a systematic approach towards sustainability is the single most important threat that barricades paradigm implementation in coming future.

Some additional threats that may affect equitable distribution of utility services and resources includes; unfair distribution of local resource under political influence, unemployment due to deindustrialization, illiteracy giving birth to theft, crime and unemployment, lack of health facilities and polluted environment directly affecting human health, natural calamities and on-going tribal clashes.

5. THE VISION 2033

“A vibrant Agro-industrial city boosting agriculture productivity, higher farms incomes, flourishing business and economic opportunities, wide ranged employment openings, progressive trade and commerce with accelerated exports of value added agricultural products transforming Larkana into a World Class, progressive, neat-clean agile living place and home to self-reliant, healthy and morally upright people”.

Vision is first step towards transformation of the city from pastoral to progressive agriculture, eventually becoming a self-reliant industrial processing zone drawing upon raw material from agricultural holdings, guava and mango orchards which spread around the rural area that envelops the city.

5.1 Goals

Pursuant to 2033 Vision of Larkana City, which serves as the basis of growth of ‘Green Environment’, the transformation of the shape of city’s infrastructure shall be facilitated with a focus on ‘goals’ that may facilitate to achieve the vision 2033. Some such goals are stated below:

- Paddy and horticulture areas to be complemented with industrial estate containing expanded rice husking and polishing business and guava /tomato processing plants
- Industrial Estate on 500 acres at Airport Road to be made fully operational with added rice husking and polishing units
- Promote Market network for direct export of rice and fruit production from Larkana
- Increase agricultural productivity through wide use of certified seed, fertilizer, plant protection, on-farm and off-farm storage and mechanized crop harvesting
- Cold storage facilities for guava, tomato, mango and other perishables

5.2 Objectives

The next component of “Economic Strategy” for development of Larkana City is formulation of objectives in the light of each Goal, making them as much as possible, quantifiable, attainable, lucid, specific, and realistic and time oriented. These objectives are presented below in tabular form:

S. No.	Goals	Objectives
1	Paddy growing and horticulture areas to be complemented with industrial zone with expanded rice husking and polishing business and guava / tomato processing plant	Initially to establish under private sector one Rice Husking and Polishing Plant at Larkana of 30 tonnes capacity per day in FY2015-16 because 170,000 tonnes of paddy is surplus in the district. In the next 05 years (FY 2015-16/2020-21) another 5 such units to become operational under private sector, using the surplus raw paddy. These would be located in Industrial Estate on 500 acres already allotted on Airport Road. Around more than 50,000 metric tonnes of guava and 76,000 metric tonnes of tomato are produced in Larkana. Improved preservation methods under guidance of SSIC would accelerate export and income of farmers.
2	Promote Market network for direct export of rice and fruit production from Larkana	Establish Market Intelligence Unit at Larkana during 2015-16 jointly by Directorate of Agriculture, Govt. of Sindh and Local Office of Chamber of Agriculture in Larkana City with a mandate to collect, maintain and disseminate data on export demand and prices and provide it to their members who are legitimate rice growers and horticulturists.
3	Increase agricultural productivity through use of certified seed, fertilizer, plant protection on and off farm storage and mechanized crop harvesting	Certified Seed Distribution Organization to be established under private sector ASAP but not later than 2016-17 to perform the following tasks: a) Procure certified high yield IRRI seed and Basmati for distribution to members b) Open “Sales Outlet” in Larkana for supply of quality fertilizers and pesticides to members at rock bottom rates c) Cold Storage facility for Guava/ Mango is urgently needed. It was observed that substantial portion of guava production is lost during the process of fruit picking and marketing d) The use of locally made threshers can be increased with financial support from SSIC

4	Availability of Improved Agricultural Inputs	Higher agricultural production is dependent on availability of certified high grade seed, chemical fertilizer, pesticides and extension services. The supply chain of chemical fertilizers and pesticides is present in urban and rural areas through a competitive network of private commercial agencies that also provide complementary service advising the farmers on the use of product being sold to them. The advice is rendered on the basis of prevailing soil condition and the type of crop being sown. However, the plant protection service provided by the provincial government through Deputy Director of Agriculture is grossly inadequate. Similarly supply of certified seed on extensive scale is badly missing and needs improvement. Only influential landowners have access to it.
5	The use of locally made threshers can be increased with financial support from SSIC or SMEDA	The most common practice followed by farmers is beating paddy which is easy but the losses are quite high. It is therefore preferred to thresh paddy in the field itself and then transport the grain in bags as it will minimize grain losses. As sufficient workforce is available, use of combine harvesters is not advocated. Instead either pedal operated paddy threshers or power operated threshers would be useful. The former type of thresher consists of rotating drum having pegs on periphery and is operated by pedal. It has threshing capacity of 40-50 kg per hour. The later are operated by 5-10 hp electric motor or diesel engine and tractor. The working capacity varies from 200-1300 kg per hour.

5.3 Programs

The objectives of economic strategy outlined above would only become meaningful and effective if these are supported by appropriate programs of action. There could be many programs to initiate action but only those would be effective and significant if they were based on the following broad range of selection criteria:

- Development programs which are clearly of high significance in terms of their usefulness and impacts on the targeted objectives.
- Programs which command the ability to address the most important goals and objectives.
- Their ability to build on and increase the competitiveness of the stakeholders in the project area.
- Availability of resources; human, physical and financial, is needed to implement the program.
- Presence/availability of stakeholders' support to the program, especially if it is to be under a joint venture or through a system of "Public-Private Partnership".
- Its ability to complement or go-together with other programs.

The programs shall be Short Term having 5 years duration and Medium Term with slightly longer range spread over 10 years. It is proposed to commence the Short Term program with effect from the FY 2015-16 and terminate by FY 2019-20 followed by Medium Term program starting from FY 2020-21 and terminating by FY 2030-31.

6. SHORT TERM INVESTMENT REQUIREMENT

6.1 Objectives and Targets

The overall objective of the LEDS is to substantially enhance the Agro-industrial potentials in and around Larkana and thereby increase socio-economic well being of the people as envisaged in previous studies identified in LEDS by SCIP 3 Consultants. For preparation of LEDS the most crucial aspect to be considered shall focus on the following:

- Identification of development strategies
- Intervention by the Government, and
- Naming of Projects that will result in economic revival of the City and its environments

To achieve higher productivity and economic growth, the primary instrument to measure the change shall be reflected from increase in the per capita income with long term objective of doubling it in a period of 20 years through an annual average GDP growth of 6 percent coupled with effort to restrict population growth at <2% or preferably between 1.2 to 1.5 percent per annum so that economic achievements made over the plan period may clearly become discernible. This broad framework shall be geared to:

- Attaining 5 percent annual growth in agriculture and 7 percent in industrial or manufacturing sector
- Encouraging private sector's participation in the development process and more equitable sharing of the benefits
- Generating additional employment opportunities by expanding productive avenues in the city environment, through public-cum-private initiative and Government policies and programs
- Alleviating poverty through well-knit approach of income generation, extension of physical infrastructure, social and community services, and population welfare programs for the city dwellers, and
- Ensuring macroeconomic stability and discipline

6.2 Identification of Economic Strategies

The central idea of Local Economic Development Strategy for Larkana is (i) to address assigning the allocable efficiency in the use of factors of production (land, labour, capital, organization) and distribution in respect of obtainable income to these factors,

and (ii) to assign high priority in the planning process to those sectors of the local economy, which possess comparative advantage such as agriculture vis-à-vis forestry, livestock or fisheries etc. Even within the agriculture sector development of such crops is to be promoted like 'Paddy/rice' whose per hectare yield and economic returns are highest compared to other crops coupled with high degree of intra sector utilization for value addition purposes. Preference to manufacturing sector for development purposes cannot be overlooked in case of Larkana because husking and polishing industrial units are the chief users of paddy crop. Therefore the industrial use of paddy is fairly established in the district. Cultivation of paddy/rice is historically on massive scale in the area and none of the other crops can outclass paddy rice in terms of monetary returns to the growers.

The industrial growth of Larkana is "rice based" as numerous rice husking and polishing plants are functioning. The availability of cheap raw material and labour has dictated this trend but it would change over time and the comparative advantage will move away from "land and resource" to labour intensive products first, and eventually to products embodying newer technologies and sophisticated skills and knowledge. High industrial growth rate will be achieved by up-gradation of technologies, modernization of industries, full utilization of existing capacities and setting up of new capacities and development of wide variety of technical management and operative skills. All such changes are only possible over long time horizon. The objective of sustained long term economic development in Larkana will be achieved through progressively restructuring of industrial structure, which is capable of meeting the domestic needs as well as able to compete in the world market by producing high quality polished rice. Hence high technology, high value added, labor intensive and knowledge based husking and polishing industries must be given priority.

Next to Rice, the other potential crop is Oilseeds (Rapeseed and Mustard) which occupy, on an average of more than 20 years, about 14% of the cultivated land in Larkana district. The crop is currently sold out to outside buyers due mainly to absence of oil extraction facilities in the district. The projected oilseed production for FY 2015-16 is 77,580 tonnes, which strongly ensures high prospects for establishment of a couple of mini or medium size oil extraction plants in Larkana. Market prospects for rapeseed and mustard oil are extremely bright because the product is used by housewives for cooking food as well as by various manufacturers of 'pickle' that are based in the neighboring Shikarpur town- a famous place for pickle making on large scale. Manufacturers of detergents and cosmetics also require oil. Mustard oil is also used as an ingredient in other foods like baked items or fried products.

Rapeseed and mustard is traditional variety of oilseed. However, the non-traditional variety would include other edible oils such as sun flower, soybean, cotton seed, Palm kernel and safflower. The vegetable ghee / cooking oil industry is the largest user of edible oils in Pakistan most of which is imported. In view of large gap between demand

and indigenous production of edible oils, efforts are needed to augment indigenous production. Agriculture sector in Larkana needs to change over to sowing of above mentioned more commercial and value added varieties of oilseeds, so that local production could be used by large scale Ghee making plants in the country. The vegetable ghee plants in Pakistan which had obsolete, redundant, and second hand machinery have been modernized over time. Extraction of oil through solvent extraction technology is being pursued in the country. In the process of change over of oil extraction system, a well knit integrated cohesive strategy is required to restructure the edible oil and vegetable ghee industry by taking into account (i) promoting and facilitating the development of both farming and processing of domestic non-traditional oil seed (rapeseed and mustard), (ii) fiscal and monetary incentive given for setting up new modernized plants, preferably oil solvent extraction units, (iii) marketing strategy for the sale of sunflower meal to make solvent extraction unit as a viable proposition, and (iv) adjustment of sale price of vegetable ghee/cooking oil in a manner to discourage its smuggling to neighboring countries. It would require government intervention and assistance to progressive entrepreneurs for stimulating their participation in industrial development of Larkana.

Establishment of paddy husking, rice polishing and oilseed extraction plants at Larkana would open up employment opportunities both in farming and manufacturing sectors for the local population besides accelerating business and trade opportunities for the small and medium sized investors. Expanded production activities would have positive impact on transport owners who would expect to fetch more goods moving business. Likewise, the banking and insurance sector shall find conducive environment to accelerate their business operations. The communication sector is expected to revitalize owing to more frequent use of the network by business community generating additional revenue income to the service providers. The demand for industrial labour, both skilled and unskilled, shall go up concurrently as additional rice polishing and oilseed extraction plants are established in the City. Increase in wage earning opportunities would help poverty alleviation from the less privileged classes of society.

6.3 Intervention by the Government

Rice husking and polishing segment of the local economy is already a semi developed sector as reflected from numerous husking and polishing units operated by private entrepreneurs. However, the economic life of most plants has outlived, which reflects economic inefficiencies in the use of financial resources tied up with the plants. The Government of Sindh, through Industries Department, may initiate, preferably prior to FY 2015-16, a program for the up-gradation and modernization of the worn-out industrial units and provide institutional credit to the mill owners by out-sourcing the task for conducting 'assessment survey' through any one of the existing professional organizations like SMEDA, GALLOP, IBA Sukkur Campus, or AERC (Applied Economic Research Centre) University of Karachi.

As a template or lead setting project, the Government of Sindh may establish one number of Mustard Oil Extraction Plant with 15 tonnes seed crushing capacity per day during the FY 2016-17 at Larkana. The Plant shall require 3,200 tonnes of seed per annum and would be working for 300 days a year.

The provincial Government of Sindh may induce private sector to establish five such plants during the next five years commencing FY 2016-17 by allowing tax holiday and assisting in procurement of institutional credit to reputable parties. The total quantity of mustard seed required as raw material by all the proposed six (06) Oil Expellers would be a little over 19,000 tonnes while the projected oilseed production shall be nearly 76,000 tonnes per annum. This would still leave a substantial surplus production in the district. The total investment needed both by Public and Private sector for all the six plants would be around Rs 960 million.

6.4 Strategy to Stimulate Private Investment

Private sector is expected to play a key role in making industrial investment provided appropriate policy and strategy for industrial development of Larkana is adopted by the Government. In this respect the most positive change that has already been made by the Government of Sindh has introduced “Sindh Industrial Policy 2010” for the first time to accelerate pace of industrial growth in the province. The industrial policy envisages greater freedom of choice to stakeholders and it also abolished the culture of granting NOC by the Government to private investors and to upgrade domestic industry from “Low Tech Low Value” to “High Tech High Value”. In addition to all the virtues of Sindh Industrial Policy, some additional measures are required to stimulate private sector investment in rice processing sector.

These are as follows:

- Expanding infrastructural facilities in Public sector for rapid transportation of industrial goods
- Maintenance of Law and Order for secure and peaceful marketing transactions,
- Rationalization of laws governing the market mechanism, the entrepreneur’s decision to develop the industrial base
- Establishment of “Special Estates”- Any private concern interested in setting up private special zones on their own would be provided the required land
- Institutionalized loaning facilities network development
- Liberal conditions for import of spares and equipment needed for up gradation of worn-out husking and polishing plants

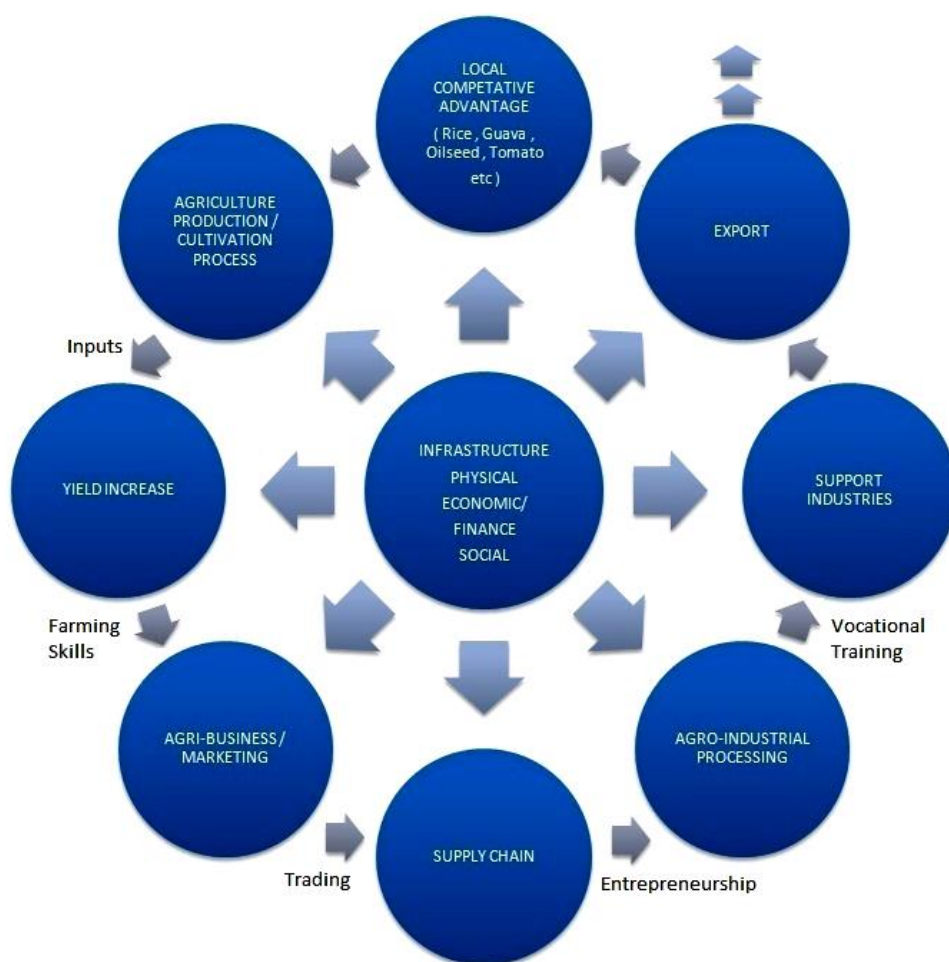
6.5 Identification of Projects

For processing the agricultural produce of Larkana district twelve (12) industrial projects have been proposed under the Short Term Plan. These would be implemented with Government-cum-private sector’s participation during FY 2015-16 through 2023-24. Six (06) projects would be established for Paddy Husking and Rice Polishing in Larkana City.

Two Rice Plants shall be established with finances provided by the Sindh Government while four plants would be developed with private sector participation.

The total investment required for twelve Husking and Polishing and Oil Extraction Plants is estimated at Rs.960.918 million. The share of provincial Government of Sindh would be around one-third or Rs 307.429 million (32%) while the Private Investors would be contributing about two third or Rs 653.489 million (68%). The role of private sector in the industrial development of Larkana City would be predominant. In order to stimulate private investment the Government of Sindh shall have to perform proactive role as a primary agency performing the facilitation services to the stakeholders.

LARKANA DEVELOPMENT WHEEL



7. IMPLEMENTATION STRATEGY AND PRIORITY PROJECTS

The preparation of growth strategies and development plans is easier compared to put in place a sustainable implementation mechanism, where stakeholders have knowledge of their roles and are eager to play the role in the business environment.

7.1 Public Sector:

Government, the public sector, affects all parts of business and investment environment. In all tiers the most important role of the public sector is to create conditions for productivity growth. The government needs to facilitate and encourage the private sector to feel tempted to invest and minimize risks on the investment. This includes development of infrastructure, meet the energy requirement, prepare policies, rules and legislation to regulate and protect investment, provide a friendly and conducive administrative step up for promotion and development of businesses and invest in the development of human capital by ensuring right kind and amount of investment in social sectors. The government also has a role to encourage local competition in business so that cartels and monopolies are not formed and equal opportunities are created for all, not just the few influential persons.

The government on its part has announced Sindh Industrial Policy 2010 which is a paradigm shift from the previous practices. The policy reiterates Government's intention are to facilities private sector rather than compete with it in investment in industries and commerce; reduce controls and monitoring and a shift from "Low Tech Low Value" industries to "High Tech High Value" industries. Specialized financial institutions have been established with branches in Larkana to provide much needed financing for investment which include; Agricultural Development Bank (ZTBL), Small and Medium Enterprise Development Authority (SMEDA), Small Business Finance Corporation (SBFC) and Micro-Finance. Besides, all major commercial banks have branches in Larkana though obtaining business loans from them is quite cumbersome.

Development of physical infrastructure, a pre-requisite for economic growth and development, is largely a public sector responsibility. For specific physical infrastructure for industries, government has established Small Scale Industrial Development Corporation which has already developed a Small Industrial Estate in Larkana that has been fully utilized and need expansion. Besides, a 500 acre site has been allocated for an industrial estate on Airport Road which has not been developed since last five years.

Utilities and social infrastructure in the city is the responsibility of various provincial government departments who have local level offices / directorates to carryout development work in their own sphere of interest which includes; Roads and Works, Education, Health, Agriculture, Public Health Engineering, Vocational Training etc. Funding is allocated by the Planning and Development Department, Government Sindh but onsite coordination and monitoring is provided by the office of the Deputy

Commissioner, Larkana. Besides, Larkana Municipal Corporation and Larkana Development Authority are responsible for operation and management of municipal services and local development schemes; respectively both these organizations are in a state of slumber at present.

7.2 Private Sector:

Private sector has the all important role to play in the implementation of growth strategies and development plan for investing capital and effort in producing goods and services that bring incomes and generates growth funds, improve quality of life and alleviate poverty. Private sector is all inclusive term, which includes individuals, families, farmers, business interests, industrialists, bureaucrats, informal and formal groups including non-governmental organization, politicians, traders etc. Private sector is always looking up to government for positive initiatives and has very sensitive antenna to sense potential gains and risks, and respond to it quickly.

Chamber of Commerce and Industries and Chamber of Agricultural are formal group of industrialists and farmers, respectively who provide important market feed back to the government policy makers, as well as, act as pressure group to obtain facilities and concessions from the government. The Chambers thus act as a bridge between policy makers and their members representing business interest group. Their involvement in the planning process as the major stakeholders is important and thus has been achieved at various stages in the preparation of this Report.

8. PROJECT DESCRIPTION AND BACKGROUND

8.1 Overview

In order to realize the development potential of urban Sindh, Government of Sindh has established the office of Directorate of Urban Policy and Strategic Planning (DUP&SP) in the Planning and Development Department. Recently, DUP&SP has endeavored to carry out preparation of Urban Growth Strategy and Development Plans so that public investment decisions in socio-economic and physical infrastructure sectors of secondary cities of Sindh are made on a rational basis. In this regard, the cities of Larkana and Sukkur have been identified as the priority cities for the preparation of Urban Development Strategy. M/s EA Consulting (Pvt). Ltd. has been awarded the project for the “Preparation of Urban Development Strategy for Larkana”.

The planning concept for preparation of a suitable urban development strategy for Larkana stemmed over a period of time from the realization that urban centers are hubs for economic growth and they also act as service centers for surrounding areas. Seen in global and regional context there is rapid increase in urbanization across countries in Asia where 20% of population lived in cities during 1960s. This proportion increased to 30% in 2003 and projected to go up to 55% by 2030⁸. If cities are to be transformed into ‘engine of growth’, they need reliable power supplies for industry, agriculture, commerce, manufacturing units, potable water supplies to the residents, efficient sewerage & drainage system to dispose of waste & gray water as well as to have adequate transport facilities for mobility of individuals and goods without polluting the city environments⁹. Above all cities need sufficient serviced land for housing the additional population and infrastructure development.

8.2 Summary of Main Features of Development Strategy

- The agricultural economy to be strengthened
- Agricultural potential in rice, oilseed and guava to be fully exploited.
- Agro based industries and allied industries to be facilitated.
- Additional small industries areas to be developed adjacent to the exiting one.
- Acceleration of the development of 500 Acres Industrial Estate at Airport Road.
- Exploitation of full tourism potential of MJD ruins and development of facilities (hotels, restaurants, conference centre, parks, souvenir shops etc.).
- New schools to be added to meet the present requirements upto 2013.
- Skill Development and Vocational Training Institutes are needed for less privileged population to increase job opportunities.
- Health facilities are generously provided; operational efficiency needs to be improved.
- Road network has additional capacity: traffic management needs to be improved.

⁸ City Cluster Development Report by ADB, August 2008

⁹ Tiwari, Geetam 2002, Urban Transport for Growing Cities: High Capacity Bus Systems, New Delhi, Macmillan.

- Old city areas are over-congested. Long term measures for decongestion to be taken.
- Building control to be exercised more efficiently specially in parts of UC-8 and UC-5.
- No reconstruction with large foot print and / or height to be allowed in UC-8 and UC-5
- Developed land for more than 3000 housing units is available in different public/private schemes. Measures should be taken to expedite construction on them.
- Addition housing schemes for different income groups should be initiated on vacant land in UC-1 UC-2 and UC-11.
- To discourage growth of katchi-abadies, land for incremental housing may be provided in UC-2 close to the industrial area.
- The hawkers encroaching main roads, should be removed to alternative locations.
- Traffic circulation on inner city roads may convert to uni-directional flow.
- The Qingqi traffic may be regulated. Urban bus transport system may be revived on major roads.
- The railway line has strategic alignment through the city. It may be utilized for urban rail transport.
- Safe water supply scheme may be revived to supply piped and safe water to Larkana in phases.
- The existing sewerage system with sewage treatment may be extended to the whole town in phases.
- Solid waste management may be outsourced to a private organization.
- NSUSC should be made independent in terms of funding and manpower so as not be dependent on TMA. Otherwise it is has failed to perform and should be disbanded.
- Airport road is gaining importance for urban development. It should be planned for ribbon development, with a special institutional arrangement.
- The VIP road with large open areas may be redeveloped as urban renewal and a new town centre may be developed in medium to long term.

8.3 The Project Area

The Urban Development Strategy for Larkana plan has been prepared to highlight opportunities and guidelines that would drive future development of Larkana City. The area delimitation of this plan comprises all rural and urban settings laying inside Larkana City's Municipal Boundary.

9. POTENTIAL URBAN DEVELOPMENT CHALLENGES AND RISKS

Most of the urban problems faced by Larkana city are due to bad governance or lack of governance. Larkana has grown in population and acquired all the complexities of urbanization such as migration, congestions, ethnic mix, lack of housing and infrastructure and a vocal society more aware of their rights than their obligations.

Unfortunately, governance institutions and administrators in Larkana have not acquired the maturity to perceive the complexity of urban problems, much less to proactively manage them. It is not possible to solve urban problems with rural mind sets.

In Larkana, the governance framework and institutions are practically subservient to the local political leaderships who have strong influence on postings and transfers of bureaucracy as well as allocation and utilization of funds. The political affiliations create pressure groups that thwart efforts for good governance, a phenomenon which is abundantly clear in the poor building control, encroachments, incompatible land uses and ineffective rehabilitation of urban infrastructure. Despite existence of local government institutions, relevant bylaws and regulations and previous master plans, Larkana today looks like an almost ungoverned city except in small patches where large government projects and functionaries are located.

The other major problem with respect to governance is O&M funds for recurring expenditure. Larkana has produced politicians of very high national stature. It is therefore not surprising that high profile mega projects are conceived and implemented here with steady flow of development funds, after ignoring much needed basic level projects.

However, the required funds for operation and maintenance are not allocated to the concerned authorities resulting in poor up keep or at times, deterioration. Nowhere, this phenomenon is more obvious than in the case of Larkana Development Package as projects completed under this package are already in poor condition of repairs. On the other hand the local administration does not find enough funds even for desilting of drains which are now choked and will not be able to drain rain water from the city, if there are heavy rains in next monsoon.

The local bodies as per the Sindh Local Bodies Act 2014 seem to have ample autonomy and opportunities to raise funds for them. However, in practical terms they are largely depended on provincial government in allocation of their share of funds. The release of funds is also erratic most of which comes with substantial delays. According to the Administrator, Larkana Municipal Corporation, their funds are not sufficient even for the payment of monthly salaries to the janitorial staff. The Local Bodies Act authorizes the municipal corporations to raise funds through various fees, levies and activities. It appears that the LMC staff has neither the motivation nor the capacity to organize the fund raising

activities. Moreover, only a fraction of collectible mandatory fees and levies gets into the official coffers as the pilferage is reported to be common.

At present there is a very loose framework for the governance in Larkana due to the absence of local bodies. A multitude of agencies are responsible for the development and maintenance of urban services loosely coordinated by the Deputy Commissioner. Local Bodies elections are expected to be held sometimes in 2014. After the elections, when local bodies are established, the *Nazim* will be in-charge and various development agencies will be reporting to him directly or through District Coordination Officer. However, not much improvement is expected unless the capacity of the local bodies is increased and the elected representatives are aware of their responsibilities. We suggest that training programmes and presentations may be arranged for the local representative and official to make them aware of the development plan and strategies and get their commitment for the planned development. UDSL has suggested the following measures are required:

1. Training of elected representatives, directed towards understanding their role as initiator of development.
2. Motivation of elected representative to understand the urban problems faced by residents and act in cohesion, above their political affiliations, to solve them. They will get public vote anyway if they make people feel better off.
3. Training of Municipal Corporation and Development Authority staff to increase their capacity.
4. Transfer of funds of completed projects approved in the PCI form under 'annual recurring expenditure' to the local agencies responsible for the O&M.
5. Encourage the LMC to generate funds from all authorized sources be to self-sufficient and sustainable. No governance is possible at local level without being sustainable

10. URBAN DEVELOPMENT STRATEGY LARKANA

Urban Development Strategy Larkana, prepared by the EA consultants in coordination Urban Unit, office of Directorate of Urban Policy & Strategic Planning, P&D Department, Government of Sindh, has proposed variety of development proposals pertaining various utility sectors aims to manage the future growth of city by 2033. This strategy aims to provide improved utility infrastructure services to projected population of city, approximately 854,000 residents, upto 2033.

10.1 Development Vision

The vision craved out for future growth of the city states that

' Restore past glory of Larkana as 'Eden of Sindh' and develop it on most modern urban development principles to be a clean, green, environment friendly, sustainable and most livable city in the northern Sindh and guide it to grow as the regional centre of economic production, infrastructure and social services. The human capital of the city to be developed in response to the governance, socio-economic and urban development needs of the city and the region.'

The Urban Development Strategy Larkana has identified various present day urban issues faced by Larkana city and briefly described how an improved metropolitan city will be delivered to create live able communities, business prosperity, housing choice, job opportunities and a sustainable natural environment.

10.2 Objectives

In accordance with the vision UDSL- 2033, the long term objectives of the development strategy are spelled out as follows:

1. Infrastructure is like veins and arteries of urban body. Adequate, well maintained and smooth flowing infrastructure is a must for the healthy life of the city and its citizens.

The objectives in this regard would be:

- Have 100 percent underground piped sewerage system for the city with localized treatment plants and re-use of treated affluent.
- The sewerage and storm water system will be separate in the existing and future planned areas, but for the congested old city areas where streets are narrow, combined sewerage and drainage system may be acceptable.
- Despite Larkana having flat topography, with proper comprehensive sewerage system design, including localized treatment plants, the number of pumping stations will be reduced resulting in reduced O&M costs and increasing the sustainability of the system.
- Safe water supply is of prime importance. Larkana at present has no piped water supply system. Therefore quality of water at the users' end cannot be monitored.

The entire population of Larkana should be covered by piped water supply in phases.

- The geometrical disposition of road network needs some adjustments. Except in the old town (UC-8 and eastern part of UC-5) the road widths are adequate but encroachments have reduced the road capacities causing traffic congestions. The district administration should firmly remove all encroachments and ensure smooth flow of traffic. The hawkers should be relocated in specially designated hawkers market.
2. The decongestion of the old city areas will be achieved with planning for commercial and business centres outside the old city.
 3. Housing is the basic human need. The long term objective will be to provide housing for all the additional population falling in different income groups. While housing for high and middle income groups may be left to the private sector, the government has to facilitate housing for the low income group. For the “poorest of the poor”, areas will be earmarked for “Incremental Housing”.
 4. Larkana need to grow economically to provide incomes and jobs to the growing population. Rice, mustard and guava are identified as the potential in agricultural growth and rice processing, oil expelling, fruit processing and packaging etc., have potential for agro-industrial growth. All efforts will be made to achieve higher yields, better processing, marketing and export facilitation and infrastructure development for industrial growth.
 5. Governance should be improved to make it more effective and sustainable in terms of development control and quality of municipal services. Multitude of agencies, at present, concerned with the urban development, need to be brought under one point monitoring (The present chaotic situation expected to be improved with the installation of local bodies).
 6. Health and educational facilities will be rationalized as presently there is too much emphasis on tertiary health facilities and higher education and the whole hierarchy is too heavy.
 7. Larkana being a regional health service provider should increase hospital bed ratio from 1 bed / 1000 population at present to 2 beds / 1000 district population by 2033, in order to achieve standard NRM.
 8. In the field of education, the city is targeted to attain 100% enrolment upto secondary level with 1:1 male: female ratio by 2033. In short term plan, city needs to increase number of class rooms to cover current enrolment and provide training institutes for less privileged population.

10.3 Target Areas

UDSL aims to bring major metamorphosis through variety of urban development/redevelopment strategies to present day Larkana City. The future development proposals and associated policies regarding improvement of infrastructure services, housing provisions and various utility cover almost all parts of City. However, with respect to this strategy, the areas of concentration are located in UC-1, UC-2, UC-5, UC-8, UC-11 including Airport Road corridor which lays outside present municipal boundary in south ward direction, towards ruins of Mohan-Jo-Daro, of city.

10.4 Land Acquisition for Development

Urban redevelopment or regeneration have worldwide recognition of its complexity and require solid policy guided solutions. There are trends and common characteristics revealed by a number of development project case studies in Pakistan. The unprompted urban development is associated with it identified key risks such as: Landlessness, unemployment, homelessness, marginalization, food insecurity, and loss of access to common property resources, morbidity and social disarticulation.

Urban development/ redevelopment projects are critical in terms of their negative externalities in which efficient governance is the major weakness of local governance agencies. Thus, project proponent needs to ensure that the impediments for effective urban governance must be addressed with smart development managers capable of applying proper constitutional frameworks.

Impoverishment of displaced business and people is the central risk in development control process. To encounter this central risk, protecting and reconstructing communities' livelihood and income resources is the central requirement for equitable development programs. Empirical evidence shows that, more often than not, the risks of impoverishment and social disruption turn into a grim reality.

There needs to be evidence that these risks have been assessed by the local governance authorities as applicable for the specific proposed projects in Larkana and corresponding mitigation measures/ restoration measures need to be taken prior to implementation.

10.5 Institutional framework

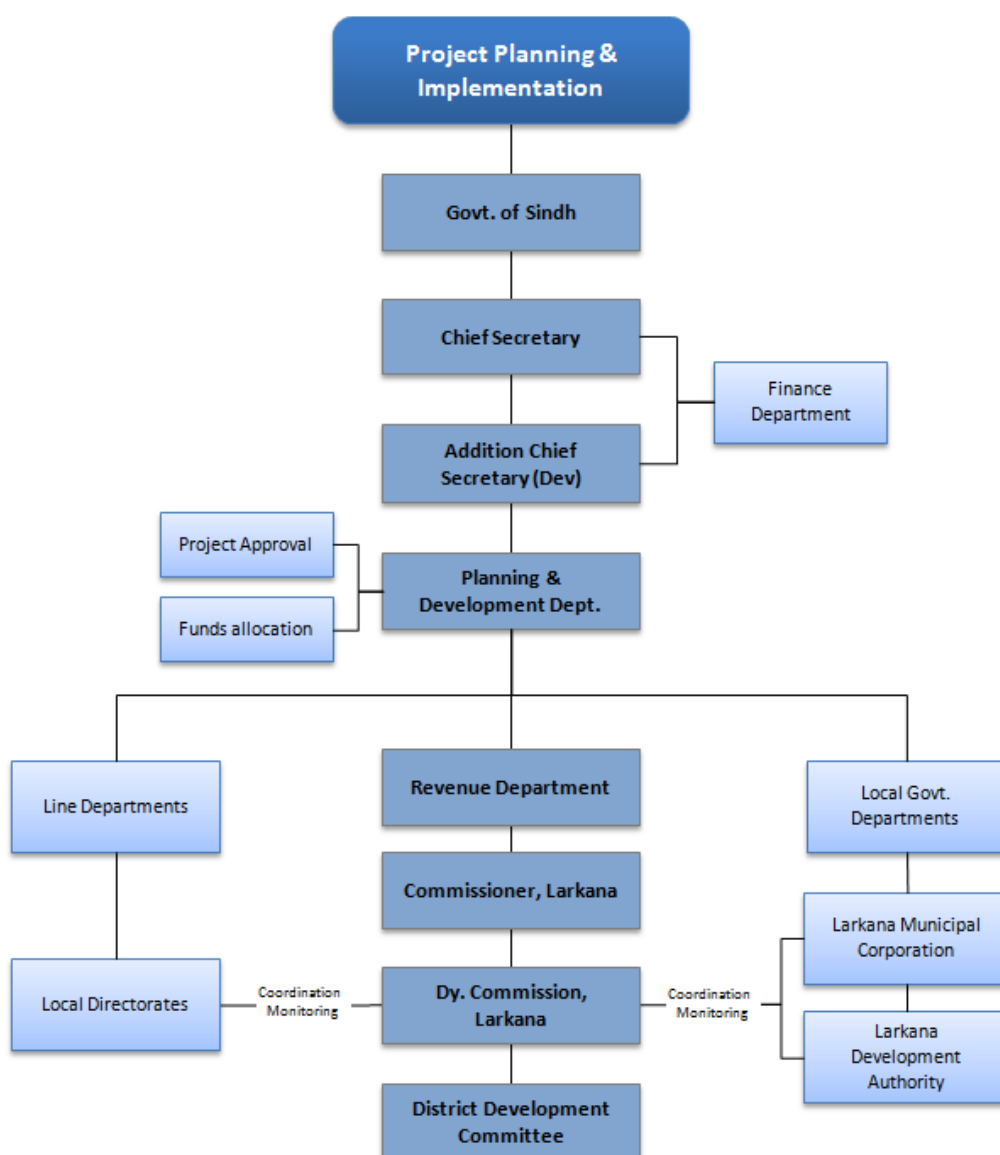
It is the responsibility of city governance authorities, in collaboration of respective Provincial/ State government to implement the plan since it is the basic responsibility of city government to rebuild city ease of communities.

In Sindh, in the absence of Local Bodies elections, the local governance is in disarray. The situation will crystallize once local bodies are in position by the end of the year 2014. The governance at present is focused on the office of Deputy Commissioner, who in case of Larkana is also the Project Director of Larkana Development Package. The Sindh Local Government Act, 2014 has been recently promulgated and local bodies elections

are expected to be held soon. However, the past experience shows that nothing much will be achieved unless there is ownership of the plan backed by institutional and legal coverage of the plan proposal.

The institutional framework for urban planning is almost non-existent at the local level. The local bodies are expected to have a Town Planner at TMA level, but the post remains either vacant or when filled, the incumbent has no education or training in understanding of urban issue or skills to use the solution tools. The most of the planning will be concentrated in remote locations at the provincial government level, the Directorate General of UP&SP in the P&D Department of Government of Sindh.

URBAN GOVERNANCE GENERIC ORGANOGRAM



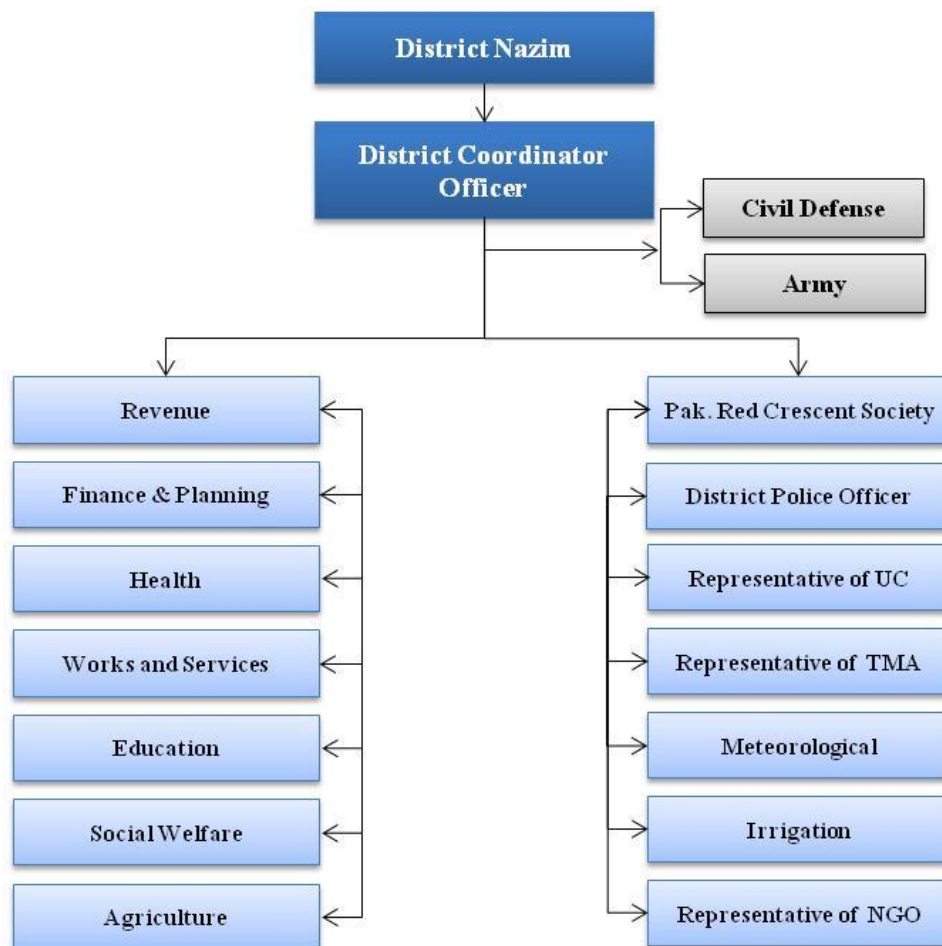
Local Governance composition may change once the local bodies will be elected by the government of Sindh. Under the previous devolution system Larkana's, being the district headquarter of Greater Larkana District, governance and administrative operations were operated by distributing the juridical boundary of city into tehsils in its revenue set up. Under this institutional setup, Larkana's government setup was administratively managed through Union Councils in the district government setup. The administrative set up of the district government in this setup is composed of following tiers:

a) Office of the Zila Nazim

Office of the District Coordination Officer followed by 09 groups of officers namely Revenue, education, Finance & Planning, Works & Services, Agriculture, Health, Education, Information Technology and Law.

b) Zila Council

Besides, there are sub tehsils in Municipal Administration.



10.6 Efforts to be taken by Project Proponents

Although the D.G UP&SP makes an effort to involve the stakeholders in planning process to take their commitment which is not as the ownership and only results in the lukewarm support in the implementation. The town planner at the local level should be fully involved in planning process by D.G UP&SP to continue the policy vision derive implementation of urban plans. The office of D.G UP&SP should take the responsibility for the notification of plans by the provincial government after legal framework. The most important element is the appropriate implementation of the plan in the presence of *Town Planners* in every TMA and their empowerment by the local government.

10.7 Development Planning

The development planning as such is concentrated in the P&D Department with inputs from the line departments. The whole process is based on sectoral lines with no regard to the project interdependencies in a spatial context. Projects are conceived basically on sectoral requirements or political pressure on province wise basis, and listed out in the annual development programmers according to administrative jurisdiction of provincial government's field offices. When the urban plans have been prepared and duly notified, it is important that the projects for the ADP and midterm plans should be taken off from the approved urban plans which will provide more effective and balance development in a spatial context. The P&D Department should give serious consideration while approving projects that the project under approved is in consonance with the urban plan.

11. IMPLEMENTATION STRATEGY

This part of the report aims to provide an implementation framework for various development proposals recommended in 'Urban Development Strategy' to drive future growth of Larkana City up to 2033, under the present governance framework of Government of Sindh.

11.1 Process of Implementation

The implementation of development plan is basically the process of prioritizing, phasing, coordinating, budgeting, scheduling, monitoring and making adjustments. Issues that must be addressed in this regard are:

- a) Determine priorities within and among the sub plans
- b) Determine the phasing or sequence of activities within among the sub plans.
- c) Address costs, timeframes, and budget availability
- d) Creating master schedule of activities with a progressive cost table so that the program can be appropriately expanded or contracted to meet implementation contingencies and budget fluctuations.
- e) Assign the various activities to be undertaken by qualified managers.
- f) Establish a timely monitoring and report system to keep the city officials and the public informed of progress and activities.

There are number of management systems and charting procedures available to help a city manager to control this process. The important requirement is that the implementation method should be effective to manage activities, timeframes, costs and interrelationships. It must also be a method that all participants can use and once adopted it must be used consistently, e.g. Critical Path Method (CPM) etc.

11.2 Implementation Agency

The office of district deputy commissioner or in case of local bodies' government the office district coordinator officer (Zila-Nazim) will be the key implementation agency to execute Urban Development Strategy Larkana 2033. Either of the offices mentioned above, working under auspices of government of Sindh, by utilizing its maximum resources and by engaging various lines departments offices of government of Sindh established in Larkana, would take responsibility of implementing various development proposals highlighted in previous chapter of this report. The concerned agency must ensure that the overall process must go after following themes of implementation process.

a) *The overreaching theme of the implementation of Urban Development Strategy Larkana is:*

- Consultation with stakeholders during implementation at all levels.
- Decentralize decision making to the greatest extent possible.

- Promote transparency and accountability of decision making and implementation enforcement.
- Rationalize impacts where necessary;
- Ensure compensation to affected communities
- Enhance the quality of infrastructure provisions, promote utility services opportunities, and focus facilitating poor segments of society.

b) The principals that implementation process will follow:

- The overall implementation process to be carried out in coordination with Town Planning and Urban Development Standards (Frameworks) in which redevelopment will be phased to prioritization;
- The implementation process will be based on updated planning codes and regulations;
- Special consideration will be paid to implement planning standards relating to disaster preparedness in all development proposals/projects;
- Facilitate communities, government machinery, and other organizations of community to participate in overall implementation process;
- Educate stakeholders for technical assistance;
- Be comprehensive, coherent, and coordinate to avoid errors through continuous monitoring and evaluation
- Arrange supply of financial resources

11.3 Legal Frameworks

Local governance agencies dealing with any development proposal must ensure that all development related activities and their approval consent should be carried out in accordance with urban planning statutory frameworks of government of Pakistan operational at all government level levels. This includes all legal frameworks substantiated through the relevant articles of constitution of Pakistan and the primary act (LAA 1984) governing land acquisition and compensation.

a) National Level Policy Frameworks

The constitution of the Islamic Republic of Pakistan passed on the 10th April 1973 and as modified thereafter, is the supreme law of Pakistan Government. This constitution provides legal cover to all laws and acts, particularly those embedded in chapter-3 pertaining with land acquisition, development and compensation.

b) State level Statutory Frameworks pertaining to planning and development Control

On 14th Feb 2011, the government of Sindh notified the extension of the jurisdiction of Karachi Building Control Authority to the whole of Sindh. The five Regions of Sindh Building Control Authority notified by the Government of Sindh are: **Karachi, Hyderabad, Mirpurkhas, Sukkur & Larkana**, having the Head Quarter **Karachi**. Thus, any development activity within juridical boundary of these districts must be

carried out in accordance with the primary planning instrument ' *Sindh Town Planning and Building Control Regulation*'.

c) *Local Planning Instruments*

There is variety of regulations dealing with municipal services offences and penalties (Fines) in case of violation have been constituted in Schedule-VI (Section 139) 'Offences under the Act' Part-1 of Local Government Act-2013 of Sind Government.

In this regulation, various well defined public activity management and control regulations dealing with *Public Health Safety, Development Control, Encroachments, Protection of Drinking water, Solid Waste & Waste Water* generating through multiple activities, *Open Space* management and associated penalties, in case of violation, have been defined in detail.

d) *Other relevant planning and design standard instruments*

There are varieties of other documents that support assessment of development proposals prior to implementation. e.g. 'National Reference Manual' - *Ministry of Housing and works, Environment and Urban Affair Division*, etc.

If regularization requirements of any of development proposal is beyond the capacity of regularity frameworks mentioned above, the concerned agency dealing with development/implementation process in Larkana may develop their own regulatory frameworks/ building code's to regularize the status of development with consent of local/provincial government authorities, if necessary.

11.4 Institutional Enhancement

While implementing the UDSDL, the respective government development authority/municipal corporation/ office of commissioner/deputy commissioner or district coordinator officer may seek technical assistance from all line department or provincial government of Sindh in form of a '*Urban Management Unit*' temporally instituted within the respective governance agency. The '*Urban Management Unit*' will mainly consist of urban planners supported by other technical staff; architects, project managers, engineers, finance officers and any other technical staff expert in their relevant fields.

The '*Urban Management Unit*' shall supervise and coordinate respective urban developers involved in development activities, conduct monitory audits, preparer evaluation and impact reports and will report to the head of respective governance agency.

Development authorities will be responsible for implementing new approved town planning and building codes with the assistance of office of head of respective governance agency. The office of district coordinator will be responsible for the overall

coordination and monitoring and will provide support for development/redevelopment activity from federal to district level.

The district Urban Management Unit would also facilitate the office of district coordinator/ deputy commission for all development/ implementation related (a) needs identification (b) revision of annual plans (c) coordination (d) financial management and (e) monitoring of all development activities assigned to developers or government departments.

12. IMPLEMENTATION SCHEDULE

<p>Strategy:</p> <p>Balanced Urban Growth</p>	<p>Programs/ Policies</p> <p><u>(A) Densification within UC boundaries</u></p> <p>Land Use Zoning</p> <p>Urban regeneration of UC 5 with emphasis on new culture based recreation opportunities.</p> <p>Development of Medium Density Low Income Housing in UC-2</p> <p>Development of Medium Density Housing in UC-4, UC-6, UC-7, UC-9 and UC-11</p> <p><u>(B) Decongestion specially in the old city area</u></p> <p>Development of low density low income housing in UC-2</p> <p><u>(D) Development Control</u></p> <p>Amendment in Zoning Bye laws</p> <p>Restrict the provision of utility services for approved planned areas</p> <p>Peri-Urban Land use control</p> <p>Vertical growth options</p> <p><u>(E) Land Banking</u></p> <p>Regeneration of empty land parcels UC-5 & UC-3 for new housing stocks</p> <p><u>(F) Air Port Road Regeneration</u></p> <p>Zoning master plan for Airport Road Regeneration</p> <p><u>(G) Ring Road</u></p> <p>Completion of New Ring Road in eastern ward of the city</p>
<p>Responsibilities to Plan:</p> <p>Detailed Urban Design Strategy</p> <p>Development Assessment</p> <p>Impact of property Assessment</p> <p>Environmental Impact Study (EIA,IEE)</p>	<p>Implementation Responsibilities:</p> <p>Public Sector/ Private developers</p>
<p>Concerned Agencies:</p> <p>P & D Department Government of Sindh/ District Government/ Line Departments of local Government /Private Developers</p>	<p>Time of Implementation:</p> <p>Short Term (6 months to 2 Years)</p> <p>Medium Term (1 year to 5 Years)</p> <p>Long Term (5 years to 20 Years)</p>

<p>Strategy:</p> <p>Future Transport Sector Development & Improvement</p>	<p>Programs/ Policies</p> <p><u>(A)Traffic Management Program</u></p> <ul style="list-style-type: none"> • Parking restrictions / Charged parking system • Control traffic movement specially Qingqis and Pick-ups • Manage unidirectional traffic flow. • Enforcement of traffic rules • Improved road infrastructure and street furniture <p><u>(B) Mass Transit System Development</u></p> <ul style="list-style-type: none"> • Utilization of existing railway line for mass transit purpose • New BRT System • Development of New Bus Bays <p><u>(C) Congestion Reduction in Old CBD Area</u></p> <ul style="list-style-type: none"> • Designated stands for qingqi / richshaws • Specified spaces for charged parking system • Alternate route for loading and unloading vehicles • Unidirectional traffic flow pattern • Removal of encroachments from major distributors • Development of infrastructure for pedestrian movement in old precinct.
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • Enforcement of encroachment and road space improvement byelaws • Traffic corridors detailed study • Encroachment Removal & Relocation Study • On Street & Off Street Parking Feasibility Study • Urban Design Study for Improved Street Design. • BRT/ Rail based transit feasibility studies • Urban Design Strategy and EIA for Mass Transit System development 	<p>Implementation Responsibilities</p> <p>International Development and Fund Supporting Agencies/Public Sector/ Private developers</p>
<p>Concerned Agencies Provincial Works & Services Department Government of Sindh./ District Highways Department/ Local Municipal Government/District Government/ Private Developers Line Departments of local Government including LMC, LDA</p>	<p>Time of Implementation</p> <p>Short Term (6 months to 2 Years) Long Term (5 years to 20 Years)</p>

<p>Strategy:</p> <p>Water Supply System Improvement</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • In the long term, piped water supply system for 100% population by 2033 • Installation of localized network in the planned housing schemes first and gradually cover the whole population in five year plans. • Comparative analysis study for surface and ground water quality and quantity for detail assessment of appropriate water source. • Reuse of treated effluent • Introduce Tariff System for utilities through Water Metering (first for water usage above marginal consumption then in long run for all users).
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • Need Assessment/Demand & Supply Study • New Master Plan for water utility services improvement. 	<p>Implementation Responsibilities</p> <p>Public Sector/ Private developers</p>
<p>Concerned Agencies</p> <p>State Government/District Public Health Department/ Local Government/ NSUSC.</p>	<p>Time of Implementation</p> <p>Short Term (6 months to 2 Years) Long Term (5 years to 20 Years)</p>

<p>Strategy:</p> <p>Drainage & Sewerage System Improvement</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Implementation of Larkana Drainage Master Plan prepared under SCIP Consultants. • Combined system of sewerage and drainage (phase-wise approach of replacing open drains with covered sewers of PE pipes). • Decentralized of wastewater treatment plants. • Recycling wastewater.
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • Need Assessment/Demand & Supply Study • New Master Plan for Drainage & Sewerage services improvement. 	<p>Implementation Responsibilities</p> <p>Public sector / Private developers</p>
<p>Concerned Agencies</p> <p>State Government/District Public Health Department/ Local Government/ NSUSC.</p>	<p>Time of Implementation</p> <p>Short Term (6 months to 2 Years)</p>

<p>Strategy:</p> <p>Solid Waste Disposal System Improvement</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Immediate designation of Sanitary <i>Landfill Site</i> with special attention for hospital waste disposal. • Soil investigation and ground water level surveys for the selection of Sanitary Landfill site. • Collection and disposal of solid waste through specialized waste management companies.
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • Disposal Generation Assessment Study • New Master Plan for Solid Waste Disposal System improvement. 	<p>Implementation Responsibilities</p> <p>Public / Private Sector</p>
<p>Concerned Agencies</p> <p>State Government/District Public Health Department/ Local Government/ NSUSC.</p>	<p>Time of Implementation</p> <p>Short Term (6 months to 2 Years)</p>

<p>Strategy:</p> <p>Improving NSUSC's Efficiency</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Acquire the required additional sanitary workers as per requirement. • Make NSUSC self sufficient • Strengthening NSUSC's Financial Capacity • In long term introduce 4R Solid Waste Management System (reduce-reuse-recycle-reject)
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • NSUSC Progress Assessment Study • Solid Waste Management System Efficiency Study 	<p>Implementation Responsibilities</p> <p>Public / Private Sector</p>
<p>Concerned Agencies</p> <p>State Government/District Public Health Department/ Local Government/ NSUSC.</p>	<p>Time of Implementation</p> <p>Short Term (6 months to 2 Years)</p>

<p>Strategy:</p> <p>Improving Fire Fighting Capacity</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Establishment of five sub-stations to accommodate ten fire vehicles more. • Establish sub-stations at different locations to ensure short response time for the whole city. • Increase service efficiency through number of vehicles, dedicated staff and financial mechanism. • To ensure readiness of all vehicles with ample stocks of POL and spares.
<p>Responsibilities to Plan</p> <p>Assessment on LMC's fire fighting potential</p>	<p>Implementation Responsibilities</p> <p>Public Sector</p>
<p>Concerned Agencies</p> <p>District Government/Larkana Municipal Corporation.</p>	<p>Time of Implementation</p> <p>Short Term (6 months to 2 Years)</p>

<p>Strategy:</p> <p>Energy (Gas, Electric Power, Energy Generation through Alternate Resources)</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Development of alternative energy resources such as wind, solar and bio-gas etc. • To Improve existing infrastructure of WAPDA • Strengthening financial capacity of WAPDA • Solar street lights project • Energy generation through solar panel system for residential and commercial purpose.
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • Demand and Assessment of various energy resources. • Larkana alternate energy generation technical report. • Larkana solar panel based energy generation assessment system feasibility study. • Larkana solar street light rehabilitation study. 	<p>Implementation Responsibilities</p> <p>Public/ Public Private Partnerships</p>
<p>Concerned Agencies</p> <ul style="list-style-type: none"> • Sui Southern Gas Company Larkana • WAPDA • Private Companies 	<p>Time of Implementation</p> <p>Short Term (6 months to 2 Years)</p>

<p>Strategy:</p> <p>Health Sector</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Establishment of New BHU's. • Addition of 4,300 beds to achieve the target of 2 beds per 1000 district population • Hiring of 199 new doctors, 50 nurses and 23 paramedical staff. • Maintenance of existing incinerators in Chandka Medical Hospital. • Provision of incinerators in all main hospitals.
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • Larkana Health Provisions Improvement Master plan 	<p>Implementation Responsibilities</p> <p>Public Sector</p>
<p>Concerned Agencies</p> <p>State Government/District Health Department.</p>	<p>Time of Implementation</p> <p>Short Term (6 months to 2 Years)</p>

<p>Strategy:</p> <p>Education Sector Strategy</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Short term plan provision of 963 classrooms at different levels • Repairing of existing buildings • Training of teaching staff • 4,900 additional classrooms by 2033 • New schools and colleges for estimated population of 158,000.
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • Larkana Education Infrastructure Improvement Mater Plan 	<p>Implementation Responsibilities</p> <p>Public Sector</p>
<p>Concerned Agencies</p> <p>State Government/Local Education Department Larkana.</p>	<p>Time of Implementation</p> <p>Medium Term (1 year to 5 Years)</p>

<p>Strategy:</p> <p>Improving Recreation Sector</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Repairing of existing recreational facilities and completion of under construction work. • Introduce financial mechanism (like charging fee) for public parks and playgrounds to make them self sustaining. • Special arrangement for security, parking and alternate route during religious and cultural activities in the city. • Revitalization of existing Cinemas (conversion to mixed use building i.e. shopping and entertainment). • Provision of touristic facilities for Moen-Jo-Daro. • Encourage Private Investment in recreational sector (revitalization of existing cinemas and provision of touristic facilities in MJD) • Provide city scale Zoo and Amusement Water Park facilities for future, possibly on the Airport Road.
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> • Larkana Recreation Provisions Improvement Master plan 	<p>Implementation Responsibilities</p> <p>Public Sector</p>
<p>Concerned Agencies</p> <p>District Government/ Provincial Buildings Department Government of Sindh /Line department of government including LMC/TMA/ Forestry Department GoS.</p>	<p>Time of Implementation</p> <p>Medium Term (1 year to 5 Years)</p>

<p>Strategy:</p> <p>Disaster Risk Management</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> Engage all stakeholders of entire district in overall disaster rehabilitation process. Recognize the commitment of stakeholders and the need for collaboration across all levels of government, community, industry, commerce, and government owned corporations, private and volunteer organizations and local communities within all aspects of disaster management. Aligned job responsibilities of key stakeholders with job descriptions mentioned in principal guidelines proposed in <i>Pakistan National Disaster Risk Management Act 2010</i>, <i>National Disaster Risk Management Guidelines</i> and <i>Disaster Risk Management Plan, Sindh</i>. Ensure establishment of straight relationships, trust, teamwork, consultative decision-making and shared responsibilities among stakeholders. Develop disaster risk assessment system through statistical information, risk maps, emerging hazards information and their affects. Adopt measures of sustainability of local communities by utilizing local resources available to avoid post disaster cataclysms (dearth, theft, spread of epidemic diseases, etc). <p>Promote economic sustainability after disasters.</p>
<p>Responsibilities to Plan</p> <ul style="list-style-type: none"> Development of Community Training and Drill Organization Manual and SOP. Development Local stakeholders Roles and Responsibility SOP. 	<p>Implementation Responsibilities</p> <p>Public Sector</p>
<p>Concerned Agencies P & D department Gos/ SUPARCO/ Provincial Irrigation Department Gos/ Line departments of local government including Larkana District Disaster Management Authority.</p>	<p>Time of Implementation Short Term (6 months to 2 Years)</p>

<p>Strategy</p> <p>Local Economic Development</p>	<p>Programs/ Policies</p> <ul style="list-style-type: none"> • Rehabilitation of Infrastructure in existing Small Industrial Estate (roads, street lights, parking for loading/unloading goods vehicles, etc.) • Increase strategic storage through construction of cold storage / Godowns for agro products. • Extension of Small Industrial Estate on western side to meet the additional demand. • Provide good incentives near peripheries for shifting / re-location of whole sale markets from the inner city to reduce congestion. • Prepare zoning plan for the area along Moen-jo-Daro Airport Road for control of Development. • Expedite development work of Larkana Industrial Estate in Arija through phase wise infrastructure development in next five year. • Encourage Local Private Investors by giving them subsidies. • Consider changing trends of crop production through periodically revise Economic Policy Framework (feasible studies for economic potentials) • Ensure measures for security / risk recovery plan for economic zone. • Market and logistics should also be added to enhance trade and commerce. • Livestock and dairy sector needs to encourage and facilitated. • Relocation of wholesale markets is needed to create connectivity with regional markets.
<p>Responsibilities to Plan Feasible studies for economic potentials</p>	<p>Implementation Responsibilities Public /private developers</p>
<p>Concerned Agencies Provincial Government/District Government/Local Government/Larkana Chamber of Commerce and Industries/Larkana Chamber of Agriculture.</p>	<p>Time of Implementation Medium Term (1 year to 5 Years) Long Term (5 years to 20 Years)</p>

13. PRIORITY PROJECTS

The Consultants has proposed variety of Immediate Action Plan / Priority Projects for the improvement in the services and quality of life. It is responsibility of District Coordinator Officer to timely execute these projects after framing 'Implementation Schedule' and by arranging appropriate financial resources.

13.1 List of Proposed Priority Projects - Short Term Development Proposals

S. No.	Project Name	Estimated Cost In Millions	Implementation Partners	Implementation Schedule		Targets Groups/ Beneficiaries
				Start	End	
Housing						
1.	Housing Development and Regeneration into Medium Density Low Income Housing at UC-2 (1000 Units).	300.00	P & D Department Government of Sindh/Private Developers	Jan 2015	July 2017	Local population
2.	Development of Low Density Middle Income Housing at UC-11 & UC-4 (500 Units).	400.00	P & D Department Government of Sindh/Private Developers	Jan 2015	July 2017	Local population
3.	Development of Low Density Low Income Incremental Housing to Support Extension of Larkana Industrial State as per UDSDL-2020 recommendation in outskirts of UC-2 (300 Units)	150.00	P & D Department Government of Sindh/Private Developers	March 2015	July 2017	Local population
Economy						
1.	Larkana - Short Term Investment Opportunities - program.	100.000	Provincial Finance Department Gos.	Jan 2015	Jan 2016	Local Business Personals

Urban Development Strategy for Larkana

2.	Promote Tomato cultivation and processing through cottage industry.	300.000	Provincial Agriculture Department/Local Agriculture Department / Larkana Chamber of Agriculture/ Private Developers	Jun 2015	Jan 2016	Rural Population/Local Farmers/Peasants
3.	Processing, Cold storage, open air outlets land, and export Guava Production	50.000	Provincial Agriculture Department/Local Agriculture extension Department / Larkana Chamber of Agriculture/Private Developers	Jun 2015	Jan 2016	Rural Population/Local Farmers/Peasants
4.	Establishment of rice husking and polishing plant having capacity of 30 ton per day.	40.00	Local Agriculture extension Department / Larkana Chamber of Agriculture	Jan 2015	Dec 2016	Rural Population/Local Farmers/Peasants
5.	Establishment of Agro-market intelligence unit for distribution of qualified seed, fertilizers and pesticides distribution.	15.00	Larkana Chamber of commerce and Agriculture	March 2015	Jan 2016	Rural Population/Local Farmers/Peasants/Traders
6.	Proposed Industrial estate i. Completion of infrastructure for (200 acres) first phase of 500 acres industrial estate at Airport road Arija ii. oil extraction mill	2500.00 1000.00 1500.00	Government of Sindh/District Government Larkana / Larkana Chamber of Agriculture	Jan 2015	Dec 2016	Local business community
7.	Increase agricultural productivity through use of certified seed, fertilizer, plant protection on and off farm storage & mechanized crop harvesting.	52.00	Provincial Agriculture Department/Local Agriculture Department / Larkana Chamber of Agriculture	Jun 2015	Jan 2016	Rural Population/Local Farmers/Peasants
Education						
1.	Larkana Education Sector Short Term Plan - provision of 825 classrooms at different levels.	200.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jan 2015	Jan 2016	Local population/Youth

Tourism Infrastructure Improvement						
1.	Feasibility study for tourism cum recreational complex near the Airport on PPP/BOT basis	200.00	Provincial culture and tourism Department Gos/Archeology department/ Private Developers/District Government	Sep 2014	March 2015	Local Population/international tourists
2.	Feasibility :Reconstruction of Sambara-INN and cultural complex	200.00	Provincial culture and tourism Department Gos/Archeology department/ Private Developers/District Government	Feb 2015	March 2015	Local Population/international tourists
DRM						
1.	Development of disaster risk data base through statistical information, risk maps, emerging hazards information and their affects.	15.000	P & D department Gos./PDM Authority Sindh/DDM Authority Sindh/State Government of Sindh/ Irrigation Department Gos/ Private Developers	Jan 2015	Jan 2016	Local Population
Health						
1.	Larkana Health Sector Short Term Plan - Establishment of New BHU's (25-30).	500.00	Provincial Health Department/P&D Department Gos/District Health Department/ Private Developers	Jan 2015	July 2017	Local Population
Solid Waste Disposal						
1.	Soil investigation and ground water level surveys for the selection landfill site.	50.00	State Government/District Public Health Department/ Local Government/ District Government/NSUSC	Jan 2015	Jan 2016	Local and regional population

Urban Development Strategy for Larkana

2.	Larkana Solid Waste Disposal System Improvement Study	10.00	State Government/District Public Health Department/ Local Government/ District Government/NSUSC	Jan 2015	Jan 2016	Local Population
Transportation						
1.	Larkana Local Traffic System Improvement and Management Program Study.	20.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jan 2015	July 2017	Local and regional population
2.	Feasibility Study of Mass Transit on the Existing Railway Track.	50.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jan 2015	Jan 2016	Local and regional population
Water Supply						
1.	Comparative analysis study for surface and ground water quality and quantity would be conducted for detail assessment of appropriate water source.	50.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jan 2015	Jan 2016	Local Population
Sewerage and Drainage						
1.	Consultancy Service for preparation of Sewerage and Drainage Master Plan for next 20 years	40.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2015	Jan 2016	Local Population
Energy						
1.	Larkana alternative energy study	150.00	Energy and Power Department, Govt. of the Sindh /Education Department Gos/ Private Developers	Jun 2015	Jun 2017	Local Population
Urban Development						

Urban Development Strategy for Larkana

1.	Larkana CBD rehabilitation	300.00	State Government /Local Government/District Government	Jun 2015	Jun 2017	Local Population
2.	Consultancy services for per-urban growth control	50.00	State Government /Local Government/District Government	Jun 2015	Jun 2017	Local Population
3.	Cultural rehabilitation of Uc-5	1000.00	State Government /Local Government/District Government	Jun 2015	Jun 2017	Local Population

13.2 List of ADP Projects - Short Term Development Proposals

S. No.	Project Name	Estimated Cost In Millions	Implementation Partners	Implementation Schedule		Targets Groups/ Beneficiaries
				Start	End	
Housing						
1.	Construction of 100 units of Lowers Sub Ordinate Flats in Larkana.	300.00	P & D Department Government of Sindh/Private Developers	Jun 2015	Jun 2017	Local population
Economy						
1.	Introduction of Aerobic Rice Cultivation Technology (Thatta, Larkana, Jacobabad, Shikarpur, Kashmore, Kamber, Badin & Dadu)	14.00	Provincial Agriculture Department/District Agriculture Department / Larkana Chamber of Agriculture/ Private Developers	Jun 2014	Jun 2015	Rural Population/Local Farmers/Peasants
2.	Sindh Agricultural Growth Project (World Bank Assisted) (Hyderabad, Thatta, Sukkur, Khairpur, Larkana, Mirpurkhas, Umerkot, Sanghar, Matiari, Jacobabad, Shikarpur, Kashmor, Kambar-Shahdadkot, Tnado Allahyar, Badin, SBA, N. Feroze)	8867.50	Provincial Agriculture Department/District Agriculture Department / Larkana Chamber of Agriculture	Jun 2014	Jun 2018	Rural Population/Local Farmers/Peasants

Recreation						
3.	Construction of Larkana Arts Complex (Revised)	77.00	Provincial Buildings Department Government of Sindh / Local Municipal Government/ Private Developers	Jun 2014	Jun 2015	Local Population/ Tourism/ culture
4.	Improvement & Extension of Public Libraries in Sindh (Karachi, Hyderabad, Jamshoro, Khairpur Mirs, Dadu, Larkana & Shikarpur)	222.00	Provincial Buildings Department Government of Sindh / Local Municipal Government/ Private Developers	Jun 2014	Jun 2015	Local Population
5.	Establishment of Open Air Theatre at Larkana District Larkana (Revised)	60.00	Provincial Buildings Department Government of Sindh / Local Municipal Government/ Private Developers	Jun 2014	Jun 2015	Local Population/ culture
6.	Establishment of Shaheed Benazir Bhutto Museum at Sir Shah Nawaz Bhutto Library at Larkana.	59.00	Provincial Buildings Department Government of Sindh / Local Municipal Government/ Private Developers	Jun 2014	Jun 2015	Urban and rural Population
7.	Provision of Sports Facilities in High Schools / Colleges of Larkana	60.00	Provincial Buildings Department Government of Sindh / Local Municipal Government/ Private Developers	Jun 2015	Jun 2017	Local Population/Sportsmen
8.	Rehabilitation of Rice Canal RD-372 to 407 and its off-takes systems viz, Mehar Branch, Dhamrao Branch and Sehar Branch.	299.00	District Government Larkana/ Local Municipal Government/ Private Developers	Jun 2015	Jun 2017	Local Population
9.	Construction of Begum Nusrat Bhutto woman library and multipurpose hall at Larkana.	140.00	Provincial Buildings Department Government of Sindh / District Government Larkana /Local Municipal Government/ Private Developers	Jun 2014	Jun 2015	Local Population
10.	Construction of Bilawal Bhutto Zardari People's Park at Larkana	115.00	Provincial Buildings Department Government of Sindh / District Government Larkana /Local Municipal Government/ Private Developers	Jun 2014	Jun 2016	Local Population
11.	Construction of Bakhtawar People's Park at Moen jo Daro	641.00	Provincial Buildings Department Government of Sindh / District Government Larkana /Local	Jun 2014	Jun 2016	Local Population

			Municipal Government/ Private Developers			
12.	Repairing of existing recreational facilities and completion of under construction work.	125.00	Provincial Buildings Department Government of Sindh / District Government Larkana /Local Municipal Government/ Private Developers	Jan 2015	July 2017	Local Population/
Education						
1.	Up-gradation of Primary Schools to Middle Schools in District Larkana	30.0	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
2.	Construction / Reconstruction of Two Roomed Building in Existing Shelter less Primary Schools in District Larkana	20.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
3.	Rehabilitation / Reconstruction of Existing Primary & Elementary Schools in Sindh	40.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
4.	Provision of Furniture for Existing 260 Primary / Elementary Schools	60.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
5.	267Rehabilitation / Re-Construction &Provision of Missing Facilities in Existing Elementary Colleges in Larkana	100.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
6.	Rehabilitation of Existing High Schools & Higher Secondary Schools in District Larkana	40.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
7.	Up-gradation of Middle Schools to High Schools.	40.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
8.	Re-construction of Dangerous Elementary / High Schools in District Larkana	40.000	Provincial Education Department Government of Sindh/District Education Department / Private	Jun 2015	Jun 2017	Local population

Urban Development Strategy for Larkana

			Developers			
9.	Establishment of Shaheed Benazir Bhutto Girls Cadet College @ Garhi Khuda Bux, Larkana	428.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2014	Jun 2015	Local population
10.	Establishment of Shaheed Mohtarma Benazir Bhutto Govt. College of Education at Larkana (Revised)	179.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2014	Jun 2016	Local population
11.	Establishment of Quaid-e-Awam University of Engineering Science & Technology, Constituent College / Campus at Larkana	2,637.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2014	Jun 2015	Local population
12.	Provision of Sports Facilities in High Schools / Colleges of Larkana Division.	60.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
13.	Schools Improvement through Adopt a School Intervention Larkana Division	60.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
14.	Schools Improvement through PPP Initiatives Larkana Division	60.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
15.	Allotment of land Measuring 220 Acres for Establishment of Shaheed Mohtarma Benazir Bhutto Medical University, Larkana.	14.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2015	Jun 2017	Local population
16.	Integrated rehabilitation and provision of missing facilities to existing elementary schools, District Larkana (69 units)	295.910	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2014	Jun 2016	Local population
17.	Integrated rehabilitation and provision of missing facilities to existing Secondary and Higher Secondary schools, District Larkana (15 units)	200.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2014	Jun 2015	Local population

Urban Development Strategy for Larkana

18.	Establishment of Begum Nusrat Bhutto Girls Degree College, Larkana	143.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2014	Jun 2016	Local population
19.	Integrated Rehabilitation of existing Elementary Schools in District Larkana (15 Units).	51.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jun 2014	Jun 2015	Local population
Tourism Infrastructure Improvement						
1.	Protection, Preservation Promotion and Development of World Heritage Sites of Mohen-Jo-Daro	286	Provincial culture and tourism Department Gos/Archeology department/ Private Developers/District Government	Jun 2014	Jun 2015	Lower Income Groups
DRM						
1.	Geo-referred demarcation and construction of Earthen bunds for protection of forest land and up gradation of GIS Laboratory at Hyderabad (Larkana, Kandhkot, Shikarpur, Dadu, Sukkur, Ghotki, Khairpur, SBA, Sanghar, Thatta, T.M. Khan, Karachi, N. Feroze, Tharparkar, Jacobabad, Mirpurkhas and Badin.	247.00	P & D department Gos./PDM Authority Sindh/DDM Authority Sindh/State Government of Sindh/ SUPARCO/ Irrigation Department Gos/ Private Developers	Jun 2014	Jun 2016	Local Population
2.	Restoration work of J-Spur at mile 1/6 Nusrat Loop Bund	250.00	P & D department Gos./PDM Authority Sindh/DDM Authority Sindh/State Government of Sindh/ Irrigation Department Gos/ Private Developers	Jun 2014	Jun 2015	Local Population
Health						
1.	Establishment of Madam Faryal Talpur Cardiac Surgery Complex at CMC Hospital, Larkana having facilities of: i. Coronary Angiography Cardiac Catheterized Lab. ii. Cardiac Bypass Surgery. iii. Chest Surgery at Chandka Medical College Hospital	291.00	Provincial Health Department/P&D Department Gos/District Health Department/ Private Developers	Jun 2014	Jun 2015	Local and regional Population

Urban Development Strategy for Larkana

	Larkana.					
2.	Construction of Neuro-Science Complex at CMCH Larkana contains: 1. Neurosurgery Department 2. Neuro Medicine (Neurology Department) 3. Psychiatry Department.	215.00	Provincial Health Department/P&D Department Gos/District Health Department/ Private Developers	Jun 2014	Jun 2015	Local and regional Population
3.	Revamping / Revitalization of Sheikh Zaid Hospital for Women Larkana.	161.00	Provincial Health Department/P&D Department Gos/District Health Department/ Private Developers	Jun 2014	Jun 2015	Local and regional Population
4.	Renovation and Rehabilitation of Paramedical Institute at Larkana.	68.00	Provincial Health Department/P&D Department Gos/District Health Department/ Private Developers	Jun 2014	Jun 2015	Local and regional Population
5.	Construction of Medical Dispensaries in various villages of District Larkana (11 Nos.)	64.00	Provincial Health Department/P&D Department Gos/District Health Department/ Private Developers	Jun 2014	Jun 2016	Local Population
Environment						
1.	Study on wetlands especially Ramsar sites, in Sindh province (Jacobabad, Larkana, SBA, Thatta, badin, Tharparkar, Karachi, and Dadu).	54.00	Provincial Forest, Environment & Wildlife Department District Government /Private Developers/	Jun 2014	Jun 2015	Local Population
Solid Waste Disposal						
1.	Establishment of Hospital Waste Management at all Teaching Hospitals in Sindh.	142.00	State Government/District Public Health Department/ Local Government/ District Government/NSUSC	Jul 2014	Jun 2017	Local Population
Public Infrastructure						
1.	Rehabilitation/Renovation of Jails in Sindh (Karachi / Hyderabad / Dadu / Sanghar / Badin / Mirpurkhas / S.B.A /Sukkur / Shikarpur / Khairpur/ Larkana / Jacobabad)	300.00	Provincial Home Department Government of Sindh/District Police	Jan 2015	Jun 2017	Prisoners/Jail Security department
Transportation						
1.	Improvement of Old Indus Highway (Larkana Town Portion Left Over Portion of NHA) Mile 191/0-198/4 I/C Link Connection Larkana Naudero Road Total Length 8/4 Mile (13.60	775.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local and regional population

Urban Development Strategy for Larkana

	K.M)					
2.	Construction/Reconditioning of Roads District Larkana	609.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Aug 2014	Jun 2016	Local and regional population
3.	Construction of CC topping Roads / Streets and CC drains in various colonies of Larkana City.	268.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jul 2014	Jun 2016	Local population
4.	Construction of Flyover Bridge 500 Rft at Larkano City (2 Nos.)	200.000	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local population
5.	Construction of road from Kamber Railway Track, new Nazar Mohalla along with Rice Canal IP Side to Circular By-Pass 5.00 KM	60.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2015	Local population
6.	Construction of Road from Larkana Ratodero Road at village Fatehpur to village Haji Motayo Jagirani via Khair Mohammad Jagirani (Parellel to Mirwah) mile 0/0-1/4 (2.40 Kms)	36.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local population
7.	Construction of Road from Garhi Khuda Bux Bhutto Bypass	51.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local population
8.	2672 Construction of metallic Road from the Bridge of Dadu Canal at Pir Sher to Noor Khan Jatoi 0/0-0/7.	20.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local population
9.	Construction of Road in village Lal Bux Shaikh i/c storm Water Drains	39.00	Provincial Works & Services Department Gos./District Highways	Jun 2014	Jun 2016	Local population

			Department/ Local Municipal Government/District Government/ Private Developers			
10.	Construction of Road from Bacho Wahan to village Abdul Majeed Chandio along 5-L Zakria Sim Drain mile 0/0-1/4 (2.4 Kms)	30.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local population
11.	2675 Construction of Road from village Khuda Bux Mohel to Dargah Pir Chozal ali Shah mile 0/0-1/0 (1.60 Km)	19.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local population
12.	Construction of Road from Sukkur Naudero Road to village Budho Khokhar mile 0/0-0/4 (0.80 Km)	16.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local and regional population
13.	Construction of Road from Larkana Naudero Road at Quaid Awam Agriculture Farm to village Jeewan Bhutto mile 0/0-1/2 (2.0 Km)	23.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local and regional population
14.	Construction of link road from Tunio Ali Shah to main Road Khairo-Dero, Taluka Ratodero (2.0 kms)	17.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developer	Jun 2014	Jun 2016	Local and regional population
15.	Construction of link road from village Mavalkot to Warish Dino Machi mile 0/0-3/0 (4.83 Kms)	55.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local and regional population
16.	Construction of link road from Kambar Ratodero Road Labano Khan Khokhar to connect Panjoo Lorar mile 0/0-1/2	23.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local and regional population

Urban Development Strategy for Larkana

17.	2816 Block provision for Construction of various roads in Sind (Upper sindh) 100 Kms (Larkana, Dadu, N. Feroz, Kambar, Ghotki, Sukkur, Kashmore & Shikarpur)	1,484.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local and regional population
18.	Construction of Additional Carriageway of Larkana Naudero Road (16.00Kms)	176.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2017	Local and regional population
19.	Construction of road from Bab-e-Shahnwaz (Naudero city to Masoleum Garhi Khuda Bux Bhutto i/c over head bridge on Railway Track near Shahnwaz Bhutto Railway Station. (6.40 Kms)	600.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2017	Local and regional population
20.	Construction of road from Punjodero to Garhi Khuda Bux Bhutto	55.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2017	Local and regional population
21.	Construction of Larkana Naudero Road Circular road to connect Indus Highway (N-55) at the Larkano By-Pass.	300.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2017	Local and regional population
22.	Construction of road from Larkana Rashid Waggan road Nazar Muhllah along with sim Nala (both side) to Murad Shah i/c 10000rft Retaining Wall = (6.00Kms)	66.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2017	Local and regional population

23.	Construction of road from Arija Bye-Pass to Gud Purani to Yar Muhammad Huilo along path of Glipsy ,minor	36.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2017	Local and regional population
24.	Construction of Asphalt Road between Moin Jo Daro village Haji Lal Bux Shaikh (Balhreji) Taluka Dokri	67.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local and regional population
25.	Construction of new bridges in Sindh (Shikarpur, Larkana, Khairpur, Sukkur, S.B.A., Jamshoro & Dadu.)	594.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jun 2014	Jun 2016	Local and regional population
26.	Construction of Larkana Naudero Road Circular road to connect Indus Highway (N-55) at the Larkano By pass.	300.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jan 2015	July 2017	Local and regional population
Sewerage and Drainage						
1.	Construction of IRE Sub-Drain RD-0 to 35 (Village Abdul Wahab Khoso), Sub-Drain Qubo Saeed Khan, 3LA Sub Drain RD-0 to 37 and Extension of 3R Sub-Drain RD - 18 to 32 of Shah dad kot System in Drainage Division Larkana.	80.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2015	Local population
2.	Rehabilitation of SCARP Drains & Allied Structure Works in Larkana Shikarpur Drainage Project	992.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2017	Local population
3.	Consultancy services for preparation of sewerage and drainage Master plan for next 20 years.	40.00	Consultant/ P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jan 2015	Jan 2016	Local population
4.	Rehabilitation / Restoration of	1,000.00	P & D Department Gos/ Public	Jun 2014	Jun 2017	Local population

Urban Development Strategy for Larkana

	Drainage Infrastructures and Construction of Retaining Wall around Larkana City on various Drains including 1R, 2R and 1R-C Sub Drain of Larkana South System, 1R Ghar Sub Drain and Reconstruction of Structures including VRBs, VRCs, Water Course X-ings, Inlets, Junction culverts etc.		Health Department/Local Municipal/ Government/ District/ Government/NSUSC			
5.	Construction of Paver Block & Drains in various streets of Larkana City.	70.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2015	Local population
6.	Construction of Paver Block & CC Drains in Various Streets of Larkana City	70.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2016	Local population
7.	Construction of C.C. drain i/c block & paver tiles in various units of UC-8, 9, 10, 16 & 19 Larkana City	40.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2015	Local population
8.	5 Nos: Schemes of R.O Plant	60.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2017	Local population
9.	Development Schemes relating to Drainage Sector C.C. Drains and C.C Block in various Muhalla of U.C -07 Larkana City.	22.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2015	Local population
10.	1893 Development Schemes of NA-204 Larkana Construction of C.C. Drains i/c C.C Blocks for various U.Cs.	32.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2017	Local population
11.	1898 Construction of C.C. Drains and C.C. Block of various U.C's of PS-38 Taluka /District Larkana.	35.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2017	Local population
12.	1899 Construction of CC Drains and CC Block at for various UC's of Larkana City (20 Villages)	40.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/	Jun 2014	Jun 2017	Local population

Urban Development Strategy for Larkana

			Government/NSUSC			
13.	Improvement & Extension of Drainage System in Sachal Colony Larkana City.	20.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2014	Jun 2015	Local population
14.	Implementation of Short Term Drainage Plan (Approved)	829.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSUSC	Jun 2015	July 2015	Local Population
15.	Extension & Improvement of Existing Sewerage system of Larkana City.	830.00	State Government / Public Health Department/t/District Government/NSUSC	Jun 2014	Jun 2017	Local Population
16.	Requisition of Land for sewerage treatment plant as per Sewerage and Drainage Master Plan	150.00	State Government / Public Health Department/t/District Government/NSUSC	Jan 2015	July 2015	Local Population
17.	Development of integrated piper water supply/sewerage project with treatment plants Phase I - Zone C Phase II -Zone B Phase III - Zone A	2000.00 500.00 750.00 750.00	State Government / Public Health Department/t/District Government/NSUSC	Jan 2014	July 2017	Local Population
Energy						
1.	Establishment of Junior Section, Solar Energy Project @ Cadet College Larkana	630.00	Energy and Power Department, Govt. of the Sindh / Private Developers	Jun 2015	Jun 2016	Local Population
Miscellaneous						
1.	Special Package of Development Schemes for Distt: Larkana.	1,000.00	P & D Department Government of Sindh/Local Municipal Government/ District Government/Private Developers	Jan 2014	Jun 2015	Local Population

14. MONITORING AND EVALUATION ¹⁰

In the context of future related development activities proposed in UDSL-2033 monitoring can be defined as a process of regularly measuring of development activities in an efficient manner for achieving the objectives of UDSL-2033 plan. Whereas, evaluation of development activities is a regular assessment of the impact of interventions and the extent to which the given development objectives have been achieved.

14.1 Internal Monitoring

Internal monitoring of development proposals of UDSL-2033 plan provides routine flow of field level information for implementing agency on the basis of predetermined indicators coupled with verification of information by monitoring unit. In case of UDSL-2033, internal monitoring will be conducted by the office of district coordinator with the involvement of 'Urban Management Unit'.

Internal monitoring results will be communicated through monthly project implementation reports to provincial government's respective agencies. Indicators for internal monitoring will be related to process, outputs and outcomes to assess progress and results against each development proposal or activity, and to adjust the work program if necessary. Monthly reports will be prepared on standard format. The compliance report will be communicated to the provincial government concerned agency and will need to be provided as a condition before developers can start work.

14.2 External Monitoring

External monitoring will be carried by concerned agency (e.g. P&D Department) of provincial government of Sindh. In sub projects external monitoring will be carried out in parallel with the implementation of each development proposal. An independent monitoring consultant may be contracted for the purpose. A final implementation compliance report than will be prepared stating whether the development proposal has been carried out based on the envisaged plan.

14.3 Third Party Monitoring

The office of district coordinator Larkana or the concerned agency of provincial government of Sindh can engage/hire independent professionals to carry out monitoring function.

¹⁰ 'Draft Resettlement Policy Framework Thar Coal Fields, Coal and Energy Development Department, Government of Sindh, 2013.

14.4 Evaluation

It will be the responsibility of concerned agency of provincial government of Sindh to conduct evaluation of sub projects highlighted in UDSL-2033, whereas the third party engaged for monitoring of projects will provide an independent assessment of the impacts. The first evaluation of sub development project/proposal implementation will be carried out six month after its completion. Thereafter the evaluation can be done on yearly basis. These evaluations will help representative of provincial government to advice office of district coordinator larkana and other government agencies for taking measures mitigate adverse impacts, if any, during post implementation stage.

15. COSTING AND BUDGETING ¹¹

Urban Development Strategy Larkana is a comprehensive project which will involve different national and international investors working on different sub-projects/proposals. Financing of any sub project/proposal will be the primary responsibility of project proponent, i.e. provincial government of Sindh. Finances for development, redevelopment, regeneration, administration, and implementation will be provided by the provincial government of Sindh through its internal/external resources. The office of district coordinator officer Larkana will identify the funds needed to cover these costs.

15.1 Development Financing and Budget Flows

The project proponent, provincial government of Sindh is responsible for timely allocation of the funds needed for the sub project development/redevelopment including compensation of the assets, e.g. land, etc. Among other things, allocations for costs provided by the office of district coordinator Larkana will be reviewed by 'Management Unit'

Based on the review of 'Management Unit', compensation for land, tax or another activity will be provided by the concerned agency of government of Sindh to DC/ District Coordinator Officer who will disburse it to the development agencies/developers. This process will also be overseen and monitored by the department of revenue at local/provincial level.

¹¹ Ibid

15.2 Evaluation of Total Cost of Development

Total development/redevelopment costs can be placed in three distinct budgeting categories: development/redevelopment costs, compensation costs and administrative costs. Development involves complex and contingent processes, therefore developing cost estimates and a budget for development is not simple. The basic elements for identifying and estimating development/ redevelopment costs are the following;

- A policy framework to establish eligibility criteria for entitlements and other forms of assistance
- A census to establish the number and identity of communities that will be benefited or affected;
- An asset inventory to detail all of the properties (e.g. land, structures and other improvements) that will be demolished, usually carried out at the same time as the census;
- A socio economic survey to determine impacts of development on communities;
- Project technical designs, to determine the full range of facilities and services that will need to be constructed or provided.

**DIRECTORATE OF URBAN POLICY & STRATEGIC PLANNING
PLANNING & DEVELOPMENT DEPARTMENT
GOVERNMENT OF SINDH**

ADDENDUM – 2018

URBAN DEVELOPMENT STRATEGY FOR LARKANA (2013 -2033)



**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

PREAMBLE

Worthy Chief Minister approved Urban Development Strategies for Sukkur and Larkana on 30-10-2018 for their notification and subsequent implementation with the following observations:

- (i) Data is of 2013 and needs to be updated
 - (ii) Census numbers are of 1998 and should be updated for latest census
2. The Directorate of Urban Policy and Strategic initiated the process to update the data and census numbers in view of observations of Honorable Chief Minister by approaching Pakistan Bureau of Statistics for official Census 2017 data on population and housing and other relevant government departments and organizations for latest data for various socio-economic and physical infrastructure and services sectors.
3. Pakistan Bureau of Statistics supplied population data for Larkana on District and Tehsil levels detailing urban and rural population composition and number of households. The remaining details of population census data and all the details of housing data have not been shared by Pakistan Bureau of Statistics arguing that Final Results of Census 2017 are in approval stage and as soon as the same are approved, these will be released accordingly.
4. Based on Census 2017 data received from Pakistan Bureau of Statistics and latest data received for various socio-economic, and physical infrastructure and services sectors from a number of official sources including the relevant line departments and Bureau of Statistics, Government of Sindh, the Census numbers and data for demography and community facilities including education, health, recreational / cultural facilities; utility services including water supply, sewerage and drainage, and solid waste management; and Economy encompassing agriculture, livestock, inland fisheries, industry; and development portfolio expenditure have been updated and made part of an Addendum to Urban Development Strategy for Larkana.

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

TABLE OF CONTENTS

Demography.....	3
Economy.....	7
Agriculture.....	7
Livestock.....	11
Inland Fisheries	14
Industry.....	14
Trade & Commerce.....	31
Utility Services.....	34
Water Supply.....	34
Sewerage and Drainage.....	34
Solid Waste Management.....	37
Community Facilities.....	43
Education.....	43
Health.....	60
Recreational / Cultural Facilities.....	61
Priority Projects.....	79
Data Annexures.....	86

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)



Demography

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

VOLUME-I

7. Demography

7.2 Present Population (Larkana District)

As per Census 1998, population of Larkana District was 1,001,608 persons which has grown to 1,524,391 in 2017, at annual growth rate (AGR) of 2.23%. There is a total of 261,33 households in Larkana district as per Census 2017. By applying AGR of 2.23% for future projections, future population of district Larkana would be as below;

Table: D2: Population of Larkana District

LARKANA DISTRICT		
Year	Population	AGR %
2,017	1,524,391	2.23
2,018	1,558,384	
2,023	1,740,068	
2,028	1,942,934	
2,033	2,169,450	

Source: Census 2017, Directorate's estimates

7.2 Present Population (Larkana Municipal Corporation)

As per Census 2017, population of Larkana Municipal Corporation was 490,508 souls and total number of households was 85,316 which reflects household size of 5.79 persons per household.

7.4 Future Population

Analysis of population figures of Larkana reveals that population of Larkana Municipal Corporation has grown to 490,508 in 2017 from 270,283 in 1998, this inter-census change occurred at a rate of 3.19% Annual Growth Rate (AGR). Applying same growth rate for future projections, population of Larkana would reach up to 810,667 by plan period 2033. Following table indicates population projection for Larkana;

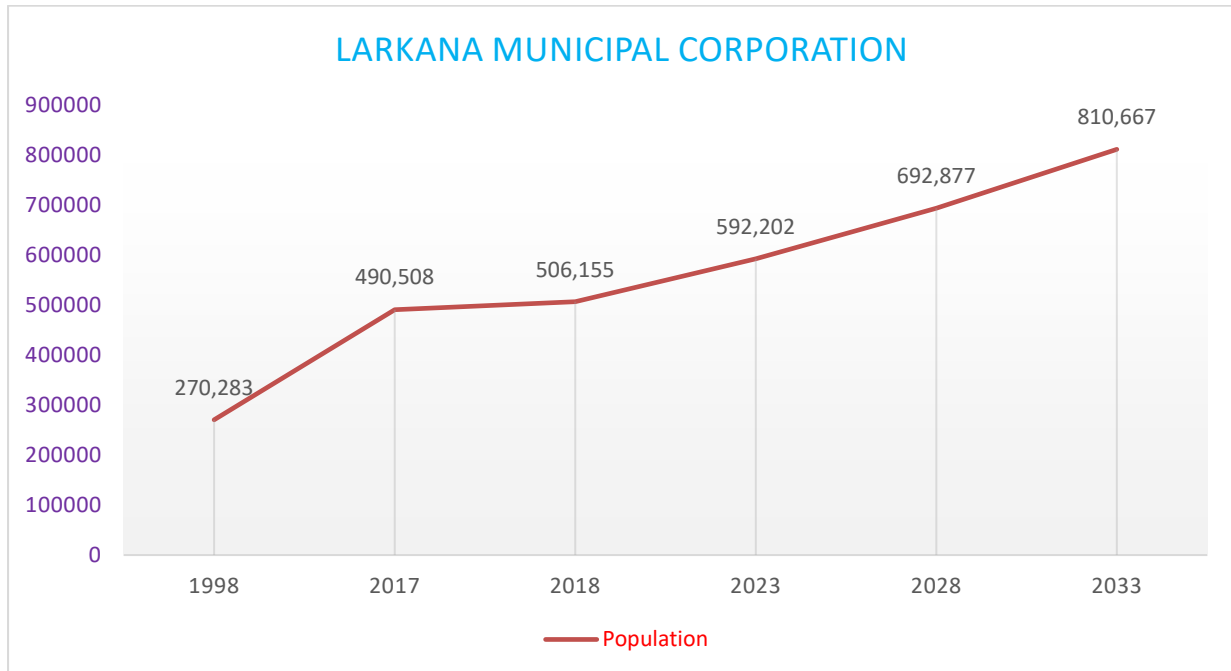
Table: D3: Population of Larkana Municipal Corporation

Year	Population	AGR
1998	270,283	3.19%
2017	490,508	
2018	506,155	
2023	592,202	
2028	692,877	
2033	810,667	

Source: Census 2017, Directorate's estimates

“URBAN DEVELOPMENT STRATEGY FOR LARKANA” (2013 - 2033)

Fig: D1: Population of Larkana Municipal Corporation



Source: Census 2017, Directorate's estimates

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)



Economy

Agriculture

Livestock

Inland Fisheries

Industry

Trade & Commerce

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”

(2013 - 2033)

VOLUME-I

9. Economy

The economy of Larkana is largely shaped by extensive cultivated area in Larkana District producing rice, wheat and mustard among crops and Guava among fruits. There is a very small industrial area mainly accommodating agro-based processing industries such as rice mills, flour mills and ice factories with some service industries to support the main industries.

Rice is a major agricultural product of Larkana. Rice contributes 10-14% in the total production of food crops in Pakistan. The share of Sindh province in total rice production of Pakistan is slightly over 30%. Hence, the share of rice production of Larkana district in the total production of rice in Pakistan is about 11%. Larkana district identifies as a regional rice production centre in Sindh. Rice production is the major source of income, and plays a major role in the development of the district. It is also major source of foreign exchange earnings. Tomato and guava are the second largest agricultural products of Larkana district. Cold storages and ware houses are required to reduce the wastage and boost the consumption of seasonal products like tomato and guava.

9.1 Agriculture

Agricultural Potential

Larkana has the privilege of being the seat of one the oldest civilizations of the world, “the Indus Valley Civilization / Moen-jo-Daro”. Larkana District is bounded by district Shikarpur and District Khairpur in east, Dadu District to the south, and Kamber –Shahdadkot district extends along the west. Guava fruit is the identity of Larkana; Ratodero and Larkana are famous for abundance of guava orchards. Fertile land surrounds Larkana covered with Rice crop, fruits and some vegetables for example guava, tomato. However, the unique crop of Rice is sown and harvested dominantly in the area of Larkana. A major chunk of this crop is then exported to other countries as well. Apart from rice, lotus root (also known as “Beah in Sindhi”) is very famous and a popular delicacy used as vegetable. Sugarcane is also cultivated in the area and processed in sugar mills at Nau Dero.

The importance of agricultural potential in Larkana district could be realized from the historical data of crops. Rice, oil seeds and barley are major crops. Rice, alone, forms nearly one third of the total rice production of Sindh province.

Some of the agricultural crops cultivated in Larkana district would have more significant commercially, these are Rice, Oilseeds, Barley and Gram. ‘Sugdasi’ variety of rice has a special fragrance (aroma) and taste and therefore it enjoys a premium over market price of other rice varieties grown in Larkana rice growing tract.

“URBAN DEVELOPMENT STRATEGY FOR LARKANA” (2013 - 2033)

9.1.1 Crop Production

The Major vegetation/crops is as under:

TABLE –E1 CROP PRODUCTION

01	Rice	106,000 ha.
02	Wheat	51,923 ha.
03	Guava	4,500 ha.
04	Tomato	6,250 ha.
05	Vegetables	2,350 ha.
06	Other crops	1,500 ha

Source: Agriculture, Supply & Prices Department, Government of Sindh 2018

9.1.2 Irrigation Network

Area irrigated by Source of Irrigation

The source of irrigation in Larkana district is mainly reliant on a canal irrigation system with 1474 water courses, nearly 400 water courses with lining of 30% area under various projects, in non-perennial areas the crops during rabi season are irrigated through tube wells. The detail of major canals of Larkana District is as under:

Sr #	Canal
01	Rice Canal (Non-perennial)
02	Warah Branch Canal
03	Dadu Canal
04	N.W Canal

Source: Agriculture, Supply & Prices Department, Government of Sindh 2018

Localities like Agani, Akil, Sanhani and Meher Wada are benefited by river Indus passing through eastern boundaries of the district. The position of irrigation network for other talukas is given below:

<u>Taluka</u>	<u>Canal</u>
1. Dokri	Rice, Dadu
2. Miro Khan	Warah Branch, Shahdadkot Branch
3. Kamber	Nalas
4. Ratodero	Ratodero Branch, Sijawal Branch, Warah Branch, Rice Canal, Dadu Canal
5. Shahdadkot	Shahdadkot Branch, Nalas/Flood Protective Bunds
6. Warah	Warah Branch

“URBAN DEVELOPMENT STRATEGY FOR LARKANA” (2013 - 2033)

Besides, weir controlled irrigation the “Katcha” areas within the two protective bunds of Larkana, Ratodero and Dokri talukas, are cultivated with flood water. It is termed in revenue records as ‘Sailabi (flood) cultivation’. Furthermore, when there are sufficient rains, a large area is brought under cultivation on the other side of the protective bunds towards the Kohistan tract. Cultivation with tube-well water is also practiced in the area.

Cultivated areas classified by mode of irrigation and farm size

Almost entire cultivated area during the kharif season is irrigated by canal irrigation system whereas some growers use tube wells to irrigate the nurseries of rice crop seedlings of early crop varieties. In Rabi season, 70% wheat is cultivated on residual moisture of rice crop by zero tillage and subsequently crops are watered 1 to 2 times through tube wells during the rabi season in non-perennial irrigation system.

9.1.3 Land Utilization

The Agro-geographical information of district Larkana is as under:

TABLE-E2: LAND UTILIZATION OF LARKANA, SINDH

01	Geographical area surveyed	488,301 ha
02	Reported area	488,301 ha
03	Cultivated area	291,425 ha
04	Net Area sown	460,259 ha
05	Area sown more than once	77,634 ha
06	Total Cropped Area	241,187 ha
07	Total uncultivated area	196,876 ha
08	Cultivable waste	87,426 ha
09	Not available for cultivation	81,816ha

Source: Agriculture, Supply & Prices Department, Government of Sindh 2018

Number and area of farms by size, land/farm areas cultivated and uncultivated (Land utilization)

The geographical area of Larkana district is mostly plain with clay to clay loam soil texture. The mighty river Indus covers the eastern boundary with a large strip of Katcho area in the east. Due to arid climatic conditions, the soil is moderately to highly saline in condition with pH ranges from 8.4 to 9.5. Due to an in-efficient drainage system, Rice crop is predominantly cultivated in Kharif season, along both sides of Dadu canal adjacent to Katcho area. Guava orchards in taluka Ratodero and Larkana are spread over a large area. Tomato crop and other vegetables are also cultivated in addition to wheat cultivation that dominates the Rabi season.

“URBAN DEVELOPMENT STRATEGY FOR LARKANA” (2013 - 2033)

Share of different crops, area in total cropped area by farm size cropping pattern and production

Larkana is major rice cultivating district in Sindh on more than 100,000 hectares with record production up to 402,800 M. Tones in a year, in addition to this, with the introduction of zero tillage wheat sowing technology on residual moisture of rice and with fixing of a high price for wheat crop, the growers have been diverted from other crops like pulses, oil seeds, and vegetables towards Wheat cultivation and since the last 05 years Larkana district has abundantly produced wheat crop after rice.

Tenure classification of farms and tenure status of famers

Two seasons of crops cultivations are common in the district, Kharif and Rabi. In Kharif, Rice is a predominant crop and in Rabi, wheat and other vegetable crops are cultivated in addition to perennial Guava orchards alongside River Indus and Dadu Canal in Ratodero and Larkana Taluka.

Fruit production

Guava is the identity of Larkana District. Its orchards are spread over an area of 4,500 hectares alongside river Indus and Dadu Canal. The Guava of Larkana is unique in taste and texture, however, unfortunately the summer crop production is destroyed mostly due to an out-break of the fruit fly. It is a perishable fruit with a short shelf life. In addition to Guava orchards, some growers have Jujube and Date Palm orchards on small scale.

9.1.5 Agricultural Inputs

Use of Fertilizer, Manures, Pesticides, and Herbicides

Nearly 20,000 MT of DAP and 35,000 MT of Urea Fertilizer is yearly consumed for various crop production in Larkana district, with additional use of millions of pesticides specially granular cartap, monomehypo, carbofuran etc for rice crop and weedicide and fungicides and other pesticides for tomato production are commonly used in Larkana district.

Rice Production

The importance of rice produced in Larkana can hardly be denied if seen in the provincial/national or regional/global perspective. Not only is it a highly commercial crop in the district, providing employment and income to the people, but also a good source of food and is the third largest crop grown after wheat and cotton.

Punjab and Sindh provinces are the two leading producers of rice in Pakistan contributing nearly 60% and 30% respectively to the national rice production. The ‘Basmati’ rice constituted about 50% in the total rice production and is the main export variety of the country. Pakistan Basmati rice has been a favorite among international rice buyers as they are willing to pay a premium price for this variety.

“URBAN DEVELOPMENT STRATEGY FOR LARKANA” (2013 - 2033)

Rice has been historically an established crop in Sindh as its cultivation dates back even before the advent of Moen-Jo-Daro civilization. The barrage controlled irrigation was started in Sindh in early 1932, but rice cultivation was there even before it. However, with more water available, its cultivation started to expand. In Sindh, there are two geographical areas where rice cultivation is undertaken i.e. Northern or upper Sindh area and Southern or Lower Sindh.

9.2 Livestock

Livestock plays an important role in the agriculture sector of Pakistan. The livestock industry has been one of the progressive sectors, showing a consistent progress over the last many years. The contribution of livestock in National GDP during the year 2016-17 stood at 11.4% compared to 11.6% in 2015-16 at constant basic prices of 2005-06. Gross value addition of livestock has increased from Rs. 1,288 billion (2015-16) to Rs. 1,333 billion (2016-17), showing an increase of 3.5 % over previous year. Similarly, its contribution to agriculture value added stood at 58.33 % during 2016-17 compared to 58.35 % in 2015-16.

9.2.1 Statistics – Livestock

TABLE-E6: NUMBER OF LIVESTOCK IN LARKANA DISTRICT

SR.#	PARTICULARS	PROPOSED FIGURES 2018 (LARKANA)			
LIVESTOCK SECTOR					
1	Livestock Population	1,357,462 heads			
2	Livestock Products	Whole Milk, Cream, Yoghurt, Cheese, Ice cream, Mutton, Beef, Hide & Skin, Blood & Bones for Poultry Feed.			
3 ¹	Demand and Supply of Meat in Larkana District ¹	1	Buffalo	23,250,000	Kg / Year
		2	Cattle	6,120,000	Kg / Year
		3	Sheep	225,000	Kg / Year
		4	Goats	480,000	Kg / Year
4	Meat Production and Consumption in Larkana District.	-do-			

Source: Livestock and Fisheries Department Sindh 2018

¹The Figures mentioned in Sr. No. 03 of Livestock Sector are based on monthly statement of slaughtered animals

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

Estimated Livestock Population in Pakistan

SPECIES	(000 Heads)				
	2011-12	2012-13	2013-14	2014-15	2015-16
<u>CATTLE</u>					
a) For breeding	2,996	3,251	3,515	3,777	4,050
b) For work	2,182	2,123	2,065	2,009	1,954
c) Others					
Cows 3 years and above					
a) In milk	10,888	11,299	11,725	12,167	12,625
b) Dry	5,580	5,791	6,009	6,235	6,471
c) Not yet calved	2,456	2,549	2,645	2,744	2,848
Bulls less than 3 years	4,883	6,963	7,226	7,498	7,781
Cows less than 3 years	1,827	6,324	6,563	6,821	7,079
Total Cattle	30,812	33,680	39,743	41,251	42,828
<u>BUFFALOES</u>					
Bulls 3 years and above					
a) For breeding	407	407	417	430	442
b) For work	345		354	364	375
c) Others					
In milk	12,224	12,595	12,921	13,305	13,701
Dry	4,043	4,166	4,274	4,401	4,532
Not yet calved	2,343	2,414	2,476	2,550	2,626
Bulls less than 3 years	5,628	5,798	5,949	6,125	6,307
Buffaloes less than 3 years	7,721	7,956	8,162	6,813	7,015
Total Buffaloes	32,711	33,680	34,553	33,988	34,998
<u>SHEEP</u>					
Male 1 year and above	4,683	4,739	4,795	4,851	4,909
Female 1 year and above	14,757	14,932	15,109	15,288	15,469
Young stock less than 1 year	8,978	9,084	9,192	9,301	9,411
Total Sheep	28,418	28,755	29,095	29,440	29,789
<u>GOATS</u>					
Male 1 year and above	7,768	7,979	8,195	8,417	8,654
Female 1 year and above	36,594	37,585	38,604	39,650	40,724
Young stock less than 1 year	18,785	19,294	19,816	20,353	20,905
Total Goats	63,147	64,858	66,615	68,420	70,274
<u>CAMELS</u>					
3 years and above	385	390	395	784	794
Less than three years	370	374	379	251	254
Total Camels	241	244	247	1,035	1,048

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

<u>HORSES</u>					
3 years and above	299	301	303	304	306
Less than 3 years	57	57	58	58	58
Total Horses	356	358	360	362	364
<u>ASSES</u>					
3 years and above	3,901	3,973	4,046	4,121	4,198
Less than 3 years	864	880	896	913	930
Total Assets	4,765	4,853	4,942	5,034	5,128
<u>MULES</u>					
3 years and above	155	158	161	164	167
Less than three years	18	18	18	19	19
Total Mules	173	176	179	182	186
<u>POULTRY</u>					
Total Poultry (Million No.)	721	785	855	931	1,016

Source: M/o National Food Security & Research (Livestock wing) 2016-17

ESTIMATED PRODUCTION OF OTHER LIVESTOCK PRODUCTS- PAKISTAN				
Product	Unit	2013-14	2014-15	2015-16
Blood	(000 tones)	62.2	64.4	66.1
Guts	(Million No)	52.4	53.6	54.8
Casings	(")	15.8	16.3	16.9
Bones	(000 tones)	802.9	827.2	852.3
Horns & Hooves	(")	54.0	55.5	57.2
Fat	(")	255.8	263.3	271.0
Dung	(")	1,336.0	1,171	1,207
Urine	(")	348.0	358	368
HIDES				
Cattle	Mill. No.	7.5	7.8	8.1
Buffalo	(")	7.2	7.4	7.7
Camels	(")	0.1	0.1	0.1
Total	(")	14.8	15.2	15.9
SKINS				
Sheep	(")	11.0	11.1	11.3
Goats	(")	25.7	26.4	27.1
Fancy skin	(")	15.2	15.6	15.9
Total	(")	51.9	53.1	54.3
Wool (sheep)	(000 tones)	44.1	44.6	45.1
Hair (goat)	(")	25.1	25.8	26.5

Source: - Ministry of National Food Security and Research (Livestock Wing) 2016-17

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

9.3 Inland Fisheries

Table E8 shows data about fishery sector in the form of fish production, fishermen involved, boats in use and number of fish farms in Larkana District. There are number of fish species, which are promoted locally for producing fish meet.

TABLE-E8 Fisheries Statistics of District Larkana

Year	Fish Production	No. of Fishermen	No. of Boats	No. of Fish Farms	Fish Species
2017-18	10,520	3,160	262	136	Rohu Thaila Moarakhi Gulfam Grass Crap Silver Crap Shakur Seengari Malli Khago

Source: Fisheries Department District Govt. Larkana 2018

9.4 Industry

Sindh Industrial Trading Estate Larkana

Salient Feature of Larkana:

SITE Larkana is being established over an area of 500 acres of land on Larkana Moen-Jo Daro Road at a distance of 14 k.m. from Larkana.

Medium scale industries will be established in SITE area Larkana.

Potential Industrial Sectors in Sindh

According to a survey undertaken in the past by Industries Department, Government of Sindh, the following sectors were found emerging as most potential Industrial Units:

Textile, Agro based Industries, Agro Processing, Mining and Mineral, Energy, Heavy Engineering, Light Engineering, Auto Industry and Iron and Steel.

“URBAN DEVELOPMENT STRATEGY FOR LARKANA” (2013 - 2033)

Types of Industries

There are medium scale industries and presently in 2018, 138 units are in production (the detail is as under).

List of Industrial Units in Larkana Region

TABLE-E9: MAJOR INDUSTRY IN LARKANA

S.No.	Name of Industrial units	Address of Industrial unit
	Larkana District	
	NO. OF LARGE SCALE INDUSTRIES FUNCTIONAL	
	Sugar Mill	
1	Nau Dero Sugar Mill	at Nau Dero District Larkana
	NO. OF MEDIUM SCALE INDUSTRIES FUNCTIONAL DISTRICT LARKANA	
	Flour Mills	
1	Madina Flour Mill	S.I.E Larkana
2	Mahek Flour Mill	S.I.E.Larkana
3	Larkana Flour Mill	S.I.E. Larkana
4	Khan Muhammad Flour Mill	Kambar R/d Larkana
5	Azeem Flour Mill	MuradWahan R/d Larkana
	Taluka Larkana	
1	Tawakal Rice Mill	Kamber R/d Larkana
2	Abbasi Rice Mill	Kamber R/d Larkana
3	Muneer Rice Mill	NauderoR/d Larkana
4	Javeed Rice Mill	S.I.E. Larkana
5	Amanullah Rice Mill	S.I.E.Larkana
6	Mehran United Rice Mill	S.I.E.Larkana
7	Mecca Rice Mill	S.I.E.Larkana
8	Mangi Rice Mill	S.I.E.Larkana
9	Paras Rice Mill	S.I.E.Larkana
10	Qamar Rice Mill	S.I.E.Larkana
11	Soomra Rice Mill	S.I.E.Larkana
12	Roshan(Rehman) Rice Mill	S.I.E.Larkana
13	Sakhi Rice Mill	S.I.E.Larkana
14	Subhanullah Rice Mill	S.I.E.Larkana
15	Muhammadi Rice Mill	S.I.E.Larkana
16	Diamond Rice Mill	S.I.E.Larkana
17	Noor Rice Mill	S.I.E.Larkana
18	Sarwar Rice Mill	S.I.E.Larkana
19	Sapna (Naveed)Rice Mill	Merokhan Rd Larkana
20	Baluch Rice Mill	Merokhan Rd Larkana
21	Itefaq Rice Mill	Merokhan Chowk Larkana

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

22	Abadgar Rice Mill	Merokhan Rd Larkana
23	Kashtkar Rice Mill	Merokhan Rd Larkana
24	Anwar Rice Mill	MehmooderoKamber Rd
25	Noorani Rice Mill	Rashidwagan Rd Larkana
26	Ghousia Rice Mill	Merokhan Rd Larkana
27	Sindh Rice Mill	Merokhan Rd larkana
28	Juneja Rice Mill	DhamrahLarkana
29	Al-Hamedullah Rice Mill	FatehpurLarkana
30	Qazi Rice Mill	Muradwahan Rd Larkana
31	Madena Rice Mill	Wagan Road Larkana
32	Al-Mecca Rice Mill	MithoderoWagan Rd Larkana
33	Bombay Rice Mill	BerochandioLarkana
34	Subhanallah(SaqibAmin)Rice	Mill Berochandio
35	Faiz Rice Mill	Opp.StationBerochandio
36	Javeed Rice Mill	BerochandioLarkana
37	Chandia Rice Mill	BerochandioLarkana
38	Latif Rice Mill	DrakhanBerochandio
39	Bismillah Rice Mill	DhamrahLarkana
40	Sikandar Rice Mill	DhamrahLarkana
41	Ghafoor Rice Mill	ArejaLarkana
42	Al-Madina Rice Mill	Ratokotwagan Rd Larkana
43	Mustafa Rice Mill	RatokotWagan Rd Larkana
44	Jeelani Rice Mill	S.I.E.Larkana
45	Al-Kesh Rice Mill	S.I.E.Larkana
46	Al-Mashad Rice Mill	vill.M.UsmanSamtio
47	Bismillah Rice Mill	S.I.E.Larkana
	Mfg of R.C.C.Pipes& Cement Products	
48	LiaquatR.C.C.Pipe Factory	S.I.E.Larkana
49	Farhan R.C.C.Pipe Factory	S.I.E.Larkana
50	JaveedR.C.C.Pipe Factory	S.I.E.Larkana
51	Manzoor Cement Jollies works	S.I.E.Larkana
52	Larkana Cement Jolli Works	S.I.E.Larkana
53	Merani Cement Jolli	S.I.E.Larkana
54	Gul Racks Industry	S.I.E.Larkana
	Mfg of Agriculture Emblems	
55	Moghal Engineering works	S.I.E.Larkana
	Mfg of Plastic Shop:Bags&PVC Pipes etc.	
56	New King Pipe Factory	S.I.E. Larkana
57	AbbasiP.V.C.Pipes	S.I.E.Larkana
58	Larkana Plastic Industry	S.I.E.Larkana
59	Shaikh Electrical Industry	S.I.E.Larkana.
	Oil Expellers	
60	Muhammadi Oil Mill	S.I.E.Larkana
61	Shebaz Oil Expeller Mill	S.I.E.Larkana

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

62	Ali Wali Oil Mill	S.I.E. Larkana
63	Sunder Oil Expeller	S.I.E.Larkana
64	Shahnawaz Oil Mill	S.I.E.Larkana
65	Jatoi Marble Industry	S.I.E.Larkana
66	Madina Ice Factory	S.I.E.Larkana
	Miscellaneous Industry	
67	A & S Salt Factory	S.I.E.Larkana
68	Indus Packages	S.I.E. Larkana
69	Ujala Pure Minral Water	S.I.E.Larkana
	Taluka Ratodero	
70	Ratodero Rice Mill	Ratodero
71	Soomra Rice Mill	Ratodero
72	Mehboob(Pak)Rice Mill	Naudero
73	Shahbaz Rice Mill	Shikarpur Rd. Ratodero
74	Baluch Rice Mill	MotanMohullaRatodero
75	Ghulam Hussain Ghanghro Rice Mill	Ratodero
76	Qalandari Rice Mill	Banguldero
77	Golden Rice Mill	Shikarpur Road Ratodero
78	Wazir Rice Mill	Naudero
79	M.BachalJakhro(Mirani)Rice Mill	Ratodero
80	Chandio Rice Mill	Vill.Waris Dino MachiRatodero
81	Solangi Rice Mill	Vil.WarisdinoMachiRatodero
82	Huma Rice Mill	Vill.Waris Dino MachiRatodero
83	Taj Rice Mill	LashariRatodero
84	Sindh Rice Mill	Lashari Taluka Ratodero
85	Naudero Rice Mill	Naudero
86	Al-Madina Rice Mill	BangulderoRatodero
87	Qurban Ali (Pitafi)Rice Mill	Saeedodero
88	Shah Latif Rice Mill	Naudero
89	Bismillah Rice Mill	Banguldero
90	Friends Rice Mill	Lashari Taluka Ratodero
91	Rabbani Rice Mill	Bangulero
92	Jatoi Rice Mill	Ratodero
93	Al-Madina Rice Mill	Ratodero
94	Hasnain Rice Mill	Ratodero
95	Lal Rice Mill	Ratodero
96	Bismillah Rice Mill	GhanghraMuhallaRatodero
97	Masha Allah Rice Mill	Bye Pass Rd.Ratodero
98	NabiBux Bhutto Rice Mill	Vil.Wasio.BhuttoRatodero
99	PirIbraheem Shah Rice Mill	Vil,WasioBhuttoRatodero
100	Ghanghara Rice Mill	Boosan R/d WadhapurRatodero
101	Al-Asif Rice Mill	WasandShakhRatodero
102	Al-Rehman Rice Mill	Vil.wadaBoosanRatodero
103	Al-Raheem Rice Mill	Vil.WadaBoosanRatodero

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

104	Boosan Rice Mill	Vil.WadaBoosanRatodero
105	Sindh Rice Mill	Vil.WadaBoosanRatodero
	Taluka Dokri	
106	Ghulam Qadir Rice Mill	Dokri
107	Juneja(Purchani)Rice Mill	Dokri
108	Insaf Rice Mill	Badah
109	Haji Dur Muhammad Rice Mill	Garelo
110	Noor Nabi Rice Mill	Garelo
111	Mehran Rice Mill	Badah
112	Mustafa Rice Mill	Garelo
113	Al-Shahbaz Rice Mill	Badah
114	G.Mustafa R/Mill	Vil.MoulviFaizM.KhokharDokri
115	Haji Altaf(unar)Rice Mill	Bakrani
116	Saria(Sindh)Rice Mill	BagiBindiBadah
117	AazmaishNabiBux Rice Mill	ArijaDokri
118	Mehran Rice Mill	Bakrani Station
119	Janta Rice Mill	Dokri
120	Jevandas Rice Mill	Badah
121	Irfan Rice Mill	BakraniStation
122	Bismillah Rice Mill	Garelo
123	Saddam Hussain Rice Mill	Moen Jo Daro Railway Station
124	Iqbal Rice Mill	Badah
125	Al-Qasmia Rice Mill	BagiBindiBadah
126	Waseem Rice Mill	Vil.PathanBakrani
127	Siyal Rice Mill	Faridabad Bakrani
128	Jhulay Lal Rice Mill	Badah
129	Al-Habib Rice Mill	Badah
130	Al_Madina Rice Mill	Badah
131	Shadani Rice Mill	Village YaroLakherDokri
132	Al-Noor Rice Mill	ChannaPulDokri
133	Al-Madina Rice Mill	Airport Rd.Nr.Moenjodaro
134	Mumtaz(Yasir)Rice Mill	Main 'Road Garelo
135	Huzoori Sindh Rice	Mill Main Road Garelo
136	Al-Madina Rice Mill	Main Road Garelo
137	Al-Shahbaz Rice Mill	Garelo
138	Friends Rice Mill	Main Road Garelo

Source: SITE 2017

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

9.4.2 Small Industrial Estate (SIE)

Industrial Unit in Production of SIE LARKANA

TABLE-E10: INDUSTRIAL UNITS AND EMPLOYMENT SITUATION IN LARKANA DISTRICT

S R NO	NAME OF ALLOTTEE	NAME OF INDUSTRY	NATURE OF INDUSTRY	PLOT NOS:	SIZE OF PLOTS IN SQ. YDS.	DATE OF ALLOTMENT /TRANSFER	DATE YEAR OF ESTABLISH-MENT	Capital Investment in	EMPOLYMENT	PRESENT STATUS
1	2-	3-	4-	5-	6-	7-	8-	9-	11-	12-
01	Mr. Munwar Ali Shaikh	M/s Mohammadi Rice Mill	Rice Processing	A-04	1,111	8/2/2011	1994	1.177	11	Operational
02	Mr. Mohammad Ismail Magsi	M/s Macca Rice Mill	Rice Processing	A-11 to A-21	12,222	6/11/2004	1982	2.435	14	Operational
03	Mr. Rajib Ali Mahessor	M/s Qamar Rice Mill	Rice Processing	A-44 to A-46	3,333	29/03/1983	1989	1.632	14	Operational
04	Mr. Sabir Hussain Abbasi[M.P]	M/s Sakhi Rice Mill	Rice Processing	A-39 to A-41	2,951	8/1/1992	1993	3.178	18	Operational
05	Mr. Mohammad Aslam Shaikh	M/s Mehran Poultry Farm	Poultry Farm	A-48	1,111	10/5/1982	1983	0.376	6	Operational
06	Late Abdul GhafoorBrohi	M/s United Rice Mill	Rice Processing	A-60 to A-63	4,444	20/06/1979	1981	0.520	10	Operational
07	Mr. Abdul Kareem Brohi	M/s Rehman Rice Mill	Rice Processing	A-65 & A-66	2,222	30/3/2010	1984	0.500	9	Operational

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

08	Mr. Ghulam Hussain Lashari	M/s HuzoorBux Ice Fac:	Ice Making	A-77	1,111	18/11/1975	1977	0.565	5	Operational
09	Mr. Yar Mohammad Bugti	M/s Bugti Autos Tractor Rep:	Tractor Repair	A-79	1,111	30/03/1980	1982	0.163	6	Operational
10	Mr. Bashir Ahmed Mughul	M/s MughulEngg: Works	Engg: works	A-82 to A-85	4,444	9/6/75	1977	0.300	16	Operational
11	Mr. Jawed Gori	M/s Jawed Rice Mill	Rice Processing	B-01 to B-16	6,666	25/09/1975	1976	0.300	14	Operational
12	Mr. Noor Ahmed Chandio[M. P]	M/s Serwar Rice & Ice Fac:	Rice & Ice	B-17,18 & 25	1,556.3	8/5/04	1977	0.411	10	Operational
13	Mr. Khairuddin Arain	M/s Harri Tractor W/s	Tractor Repair	C-09 & C-10	667	8/8/79	1979	0.155	11	Operational
14	Mr. Noor Mohammad Kalhoro [Managing Partner]	M/s Noor Rice Mill	Rice Processing	C-20 to C-24	1,667	16/08/1978	1980	4.000	10	Operational
15	Mr. Anwar Ali Shaikh	M/s Jawed Rcc Pipe Fac:	RCC Pipe	C-18 & C-19	667	8/5/84	1980	0.997	14	Operational
16	Mr. Abdul WahabSoho	M/s Sohoo Flour Mill	Flour Grinding	C-25	333	21/2/2004	1980	0.105	9	Operational
17	Mr. Mahesh Kumar Hindu	M/sSindhoo PaaparInd:	Paapar Making	A-47	1,111	26/8/2003	1982	0.869	9	Operational

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

18	Mr. Mohammad Arshad Arain	M/s Shahanshah Bakery	Food Products	C-36 & C-37	667	3/5/08	1988	0.618	11	Operational
19	Mr. Rajal Das Hindu	M/s Paras Rice Mill	Rice Processing	C-66 to C-89	8,000	29/7/1993	1993	4.385	14	Operational
20	Mr. Imdad Hussain Khuhro M.P	M/s Khuhra Cold Storage	Cold Storage	A-05	1,111	1973	1986	3.500	13	Operational
21	Mr. Amanullah Shaikh	M/s Amanallah Rice Mill	Rice Processing	A-69 to A-74	5,556	16/8/1978	1979	0.475	14	Operational
	TOTAL				62,062			26.661	238	
22	Mr. Ayaz Hussain Meerani	M/s Seven-Up Cold Storage	Cold Storage	A-80	1,111	16/1/2012	1977	1.596	13	Operational
23	Mr. Mohammad UrsMangi	M/s Mangi Rice Mill	Rice Processing	B-19 to 24, 26 to 31	6,667	18/5/1975	1977	0.500	13	Operational
24	Mr. Tarique Hussain Magsi	M/s Askari CNG Filling	Filling Station	A-81	1,111	11/12/75	1978	0.340	10	Operational
25	Mr. Sarfaraz Ali Shaikh	M/s Larkano Bakery	Food Products	A.W/Shops 5,6,7	400	17/6/1992	1993	0.700	11	Operational
26	Mr. Amjad Ali Buledi [M.P]	M/s JatotiMurtaza Ice Factory	Ice Making	C-15	429.0	19/4/1983	1995	0.435	6	Operational
27	Mr. Mohammad Ibrahim [M.P]	M/s Shaikh Atta Chaki	Atta Grinding	C-16	236.0	30/1/2009	2009	0.824	5	Operational

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

28	Mr. Mohammad Panah Chawro	M/s Mohammadi Oil Mill [Oil Expeller]	Oil Expelor	C-120,C-121, C-129 & C-130	1,333	29/12/1994	1995	0.988	11	Operational
29	Mr. Ishtiaque Hussain Qureshi	M/s A & S Salt Factory	Salt Grinding	B-35	556	16/2/1992	1995	1.425	7	Operational
30	Mr. Anwar Ali Janweri	M/s Diamond Rice Mill	Rice Processing	C-116 to C-119 C-125 to C-127	2,667	4/9/1995	1998	0.903	9	Operational
31	Mr. Raj Kumar Hindu	M/s Sapna Bakery [Food Products]	Food Products	C-136 to C-138 C-143 to C-145	2,000	4/8/1996	1998	0.787	9	Operational
32	Mr. Mohammad Saleem Shaikh	M/s Subhan Allah Rice Mill	Rice Processing	A-23 to A-25 E-12 & E-13	7,221	4/6/1996	1998	0.982	14	Operational
33	Mr. Nisar Ahmed Chawro	M/s Shahbaz Oil Mill	Oil Expelor	C-51 to C-54	1,000	12/7/2007	1995	0.473	14	Operational
34	Mr. Kishwar Kumar Hindu	M/s New King Pipe Fac:	Plastic Pipe	A.W/Sho p No: 12,13 18, & 19	533	16/03/2005	1999	1.124	8	Operational
35	Mr. Ghulam Rasool Bhutto	M/s Seema Bakers	Food Products	C-38 & C-39	667	1/1/1992	2000	0.847	12	Operational
36	Mr. Sajid Ali Magsi	M/s Al-Wali Oil Mill	Oil Expelor	B-37 & B-38	1,111	27/2/2007	2002	1.025	11	Operational
37	Mr. Ghulam Akber Sahito	M/s Hina Bread	Food Products	C-133, C-134 C-140 & C-141	1,333	18/8/1996	2000	0.754	11	Operational

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

38	Mr. Imam BuxMeerani	M/s Al-Farooq Merani Atta Chaki	Atta Grinding	A-37	587	18/4/2009	2009	0.926	9	Operational
39	Mr. SirajulOlya Shah Rashdi	M/s Al Sayed Tractor Work Shop [Tractor Repair]	Tractor Repair	C-06 to C-08	1,000	16/03/1999	2000	3.775	17	Operational
40	Mr. Tara Chand Hindu	M/s New Sunder Oil Mill	Oil Expelor	A-34	1,111	13/8/1996	2001	0.956	6	Operational
41	Mr. Masood Ahmed Bhutto	M/s Larkano Cement Jalies	Cement Jalies	A-30 & A-31	4,444	28/9/2001	2001	0.782	11	Operational
42	Mr. Iqbal Ahmed Shaikh	M/s Royal Bakers	Food Products	B-70 & B-71	1,111	23/9/2006	2006	0.913	11	Operational
43	Mr. Asadullah Shaikh	M/s Mehran Bakers [Food Products]	Food Products	C-11 & C-12	667	25/7/2001	2001	0.418	11	Operational
44	Mr. Sajid Ali Magsi	M/s Al-Wali Oil Mill	Oil Expelor	B-43 & B-44	1,111	4/4/2006	1991	0.279	11	Operational
45	Mr. Abdul Kareem Brohi	M/s Latif Rice Mill	Rice Processing	A-03	1,111	29/3/2010	2001	0.485	9	Operational
46	Government Department	M/s Agriculture W/shop [Light Enginerig]	Engg: Works	B-45 to B-50 B-78 to B-83	666	5/20/1968	1968	-	-	Operational
47	SSIC, Larkanao	M/s Residential Directors Bungalow/ Quarters		C-01 to C-05	1,000	6/11/1968	1990	-	-	Operational

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

48	Mr. Iqrar Ali Khan	M/s Ishrat Bakers	Food Products	B-72	555	24/5/2001	1995	0.578	11	Operational
49	Mr. Akber Ali Shaikh	M/s Rehman Atta Chaki [Atta Grinding]	Atta Grinding	A.W/Sho p 01 to 04	533	1/9/2001	1989	0.780	9	Operational
50	Mr. Mohammad Afzal Sandilo	M/s Larkano Flour Mill	Flour Grinding	B-41 & B-42	1,111	23/0/2007	2003	9.300	16	Operational
51	Mr. RasoolBux Shaikh	M/s Jeelani Rice Mill	Rice Processing	A-26 & A-27	2,222	1/10/2009	2004	4.159	14	Operational
52	Mr. Ghulam AkberSahi	M/s Hina Bread	Food Products	A-38	611	28/5/2002	2004	0.636	13	Operational
53	SSIC, Estate Larkana Mr. Abdul Kareem Brohi	1- Water Pump 2- M/s Paris Food Industry	Food Products	A-64 3596 sq: ft: A-64 6448 Sq Ft:	1,111	16/5/2012	-	Nil 4.801	Nil 12	Operational
54	Mr. Ali Sher Bhutto	M/s BhuttaPaapa rIndustry	PaaparInd:	B-36	555	28/8/2001	2003	1.154	12	Operational
55	Mr. Pawan Kumar Hindu	M/s Dewan PaaperInd:	PaaparInd:	B-64 & B-65	1,111	16/2/1992	2003	1.742	10	Operational
56	Mr. Qamaruddin Mahessor	M/s Al-Qadir Rice Re-Process Plant	Rice Processing	C- 40 & C-41	666	28/3/1994	2010	1.084	11	Operational
57	Mr. DhaniBux Shaikh	M/s Madina R/Flour Mill	Rice & Flour	A-07 & A-08	2,222	19/4/1981	2004	0.982	11	Operational
58	Mr. Imran Shaikh	M/s Gul Racks Industry	Iron Racks	B-53 & B-54	1,111	16/6/2004	2004	1.097	23	Operational

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

59	Mr. Abdul Aziz Soomro	M/s Soomra Rice Mill	Rice Processing	A-42 & A-43	2,222	31/8/2004	1989	4.449	14	Operational
60	Mr. Suresh Kumar Hindu	M/s Al-Kesh Rice Mill [Rice Process]	Rice Processing	C-131,C-132 &C-139	1,000	22/08/2006	1993	1.125	11	Operational
61	Mr. Manzoor Hussain Arijo	M/s Pepsi Cold Storage	Cold Storage	A-52	1,111	31/8/2004	2005	1.765	13	Operational
62	Mr. Kishwar Kumar Hindu [M.P]	M/s New King Pipe Fac:	Plastic Pipes	A.W/Sho p 20,21& 22	800	24/4/1999	1999	0.416	13	Operational
63	Mr. Kishwar Kumar Hindu [M.P]	M/s New King Pipe Fac:	Plastic Pipes	A.W/Sho p 23,24 & 25	800	24/4/1999	1999	0.416	13	Operational
64	Mr. Kaltar Singh Hindu	M/s Larkano Ice Factory	Ice Making	C-135 &C-142	666	28/8/2007	2005	0.779	9	Operational
65	Mr. Ghulam Akber Shaikh	M/s English Shoes Ind:	Shoes Making	C-57 to C-62	2,000	26/10/1987	2005	2.876	22	Operational
66	Syed Zahid Qadir	M/s Syed Communicat inEngg: Service [Mobile Tower]	Engg: Works	B-68	555	1/11/2005	2006	0.907	7	Operational
67	Mr. Zulfiquar Ali Shaikh	M/s Zulfiquar Mobile Tower	Mobile Tower	B-69	555	29/9/2005	2006	0.833	9	Operational
68	Mr. Abdul Qadir Memon [M.P]	M/s Adnan Bakers	Food Products	B-73	555	27/3/2007	2008	0.613	9	Operational

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

69	Mr. Akber Ali Shaikh	M/s Rehman Atta Chaki	Atta Grinding	C-17	333	9/10/2007	2008	0.780	9	Operational
70	Mr. Noor Ahmed Shaikh	M/s Bismillah Rice Mill	Rice Processing	C-93 to C-101 C-104 to C-111	5,666	12/9/2007	2008	4.601	14	Operational
71	Mr. Kishwar Kumar Hindu [M.P]	M/s New King Pipe Fac:	Plastic Pipes	A/w Shop No: 10,11,16 & 17	533	16/3/2005	2005	0.885	7	Operational
	TOTAL				69,787			64.194		
72	Mr. Manoj Kumar [M.P]	M/s Sindh Rice Traders	Rice Processing	C-102 & C-103 C-90 to C-92	1,895	10/3/2007	1989	0.714	10	Operational
73	Mr. Abdul Rauf Shaikh	M/s R.L Food Product	Food Products	B-34	556	13/1/2009	2009	0.763	11	Operational
74	Mr. Asad Ali Tunio	M/s Ajwa Rice Mill	Rice Processing	B-57 & B-58	1,111	1/11/2009	2010	1.200	12	Operational
75	Mr. Kishwar Kumar Hindu [M.P]	M/s New King Pipe Fac:	Plastic Pipes	A/w Shop No: 08,09,14 & 15	533	21/5/2009	2010	0.635	7	Operational
76	Mr. Muzafar Hussain Pathan	M/s Khan Associates	Engg: Works	A-01 & A-02	2,222	1973	2010	0.279	12	Operational
77	Mr. Imadad Hussain Khuhro	M/s Khuhra Rice Mill	Rice Processing	A-06	1,111	21/1/2010	2010	4.385	14	Operational
78	Mr. Zahid Ali Jatoi	M/s Jatoi Atta Chaki	Atta Grinding	A-32	1,111	19/9/2005	2005	0.407	11	Operational

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

79	Mr. Waqas Kumar Hindu	M/s DileepTilles Cutting	Tilles Cutting	B-76 & B-77	1,111	7/10/2009	2011	0.799	11	Operational
80	Mr. Sartaj Ahmed [M.P]	M/s Sartaj Rice & Flour Mill	Rice & Flour	A-49	1,111	19/6/2012	2011	1.163	5	Operational
81	Mr. Nasir	M/s Manzoor RCC Pipes & Cement Jolies	RCC Pipes & Cement Jolies	C-45, C- 46 & C-47	1,000	3/1/1987	2011	0.199	12	Operational
82	Mr. Ali Masood Bhutto	M/s Union Plastic Industry	Plastic Bags	C-26 & C-27	666	14/1/1994	1985	2.249	7	Operational
83	Mr. Abdul Kareem Ganwas	M/s Hussaini Rice Mill	Rice Processing	C-48 to C-50	1,000	19/4/1981	2001	0.735	14	Operational
84	Mr. Dileep Kumar [M.P]	M/s Mehek Roller Flour Mill	Flour Grinding	B-60 & B-61	1,111	26/2/2014	2001	5.363	14	Operational
85	Mr. IshaqueKalh oro	M/s Sajjad Atta Chaki	Atta Grinding	C-63 & C-64	666	21/7/2005	2005	0.886	9	Operational
86	Mr. Anwar Ali Janwri	M/s Janwri Ice Factory	Ice Making	C-128	666	25/7/2014	2014	0.78	6	Operational
87	Mr. Suhail Ahmed Abbasi	M/s Abbasi PVC Pipes Fac:	Pvc Pipe	B-59	555	18/8/1993	1994	1.253	7	Operational
88	Mr. Mohammad Sharif Shaikh	M/s G.S Enterprises	Cement Jalies	B-74 & B-75	1,111	14/6/2006	2008	0.802	9	Operational
89	Mr. Shoukat Ali Abbasi	M/s Shahnawaz Abbasi Oil Mill	Oil Expelor	C-42	687	6/4/2011	2005	1.149	11	Operational

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

90	Mr. Naseer Ahmed	M/s Naseer Oil Mill	Oil Expelor	C-43	333	6/4/2011	2005	1.149	11	Operational
91	Mr. Awais Ali Abbasi	M/s Ali Mohammad IceFactory	Oil Explorer	C-44	333	6/4/2011	2005	1.149	11	Operational
92	Mr. Rajib Ali Kumbhar	M/s Ali Baba Rice Processing Plant	Rice Processing	A-09 & A-10	2,222	10/4/1998	1994	1.457	14	Operational
93	Mr. Liaqat Ali Shaikh	M/s IllahiBux Trade Centre	Medicine Distributio n	A-75 & A-76	2,222	17/11/2003	1977	0.480	6	Operational
94	Mr. Pawan Kumar	M/s Jai Deep Enterprises	Mineral Water	A-22	1,111	5/9/2003	2003	0.982	11	Operational
95	Mr. DhamoonDhar [M.P]	M/s Sahil Silky Rice Mill	Rice Processing	A-28 & A-29	2,222	14/10/2014	2014	4.444	14	Operational
96	Mr. Sunny Hindu	M/s Jai Enterprises	Mineral Water	A-53	1,111	30/04/2007	-	1.062	7	Operational
	TOTAL				27,777			34.484	256	

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

**9.4.3 SINDH SMALL INDUSTRIES CORPORATION, SMALL INDUSTRIES ESTATE
LARKANA**

SILIENT CHARACTERISTICS										
S R NO	NAME OF ALLOTTEE	NAME OF UNIT	NATURE OF INDUSTRY	PLOT NOS:	SIZE OF PLOTS IN SQ. YDS.	DATE OF ALLOTMENT /TRANSFER	YEAR OF ESTABLISHMENT	Capital Investment	EMPLOYMENT	PRESENT STATUS
1-	2-	3-	4-	5-	6-	7-	8-	9-	11-	12-
01 -	Mr. Mahesh Kumar Hindu	M/s Mahesh & Brothers [Shopping Bags]	Shopping Bags	B-66 & B-67	1,111	19/4/2006	1987	1.292	10	Closed
02 -	Mr. Gada Hussain Mahessor	M/s Steel Corporation	Steel Making	A-67 & A-68	2,222	16/5/1978	1987	1.298	10	Closed
03 -	Mst. Bara-u-NisaSoomro	M/s ABN Engineering Fac: [Agriculture Implements]	Engg: Works	A-33	1,111	9/2/2008	2008	0.871	11	Closed
04 -	Mr. Zakir Hussain Mahessor	M/s Mahessor Flour Mill	Flour Grinding	A-35	1,111	5/24/1905	2001	0.450	9	Closed
05 -	Mr. Sartaj Ahmed Abbasi	M/s Sartaj Rice & Flour Mill	Rice & Flour	A-50	1,111	21/5/2008	1997	0.742	11	Closed
06 -	Mr. Suneel Kumar [M.P]	M/s Nazim Poultry Farm	Poultry Farm	A-51	1,111	2/2/2010	1985	0.410	6	Closed
07 -	Mr. Atta Mohammad Shaikh	M/s New Mohammadi Rice Reprocess Plant	Rice Processing	A-57	1,111	3/4/2015	2011	0.607	10	Closed
08	Mr. Bashir Ahmed Shaikh	M/s Mehran Poultry Farm	Poultry Farm	A-58 & A-59	2,222	16/12/80	1980	0.765	6	Closed

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

09 -	Mr. MunawarAli Shaikh	M/s Indus Plastic Grain Bags	Shopping Bags	B-62 & B-63	1,111	3/5/2008	2008	4.277	15	Closed
10 -	Mr. Hubdar Ali Kalhoro	M/s Abdullah Rice Mill	Rice Processing	C-65 Plus Excess Area	1,000	4/6/2011	2000	3.785	14	Closed
11 -	Mr. MazaharHus sain Puri	M/s Inam Weaving Fac:	Textile Mill	B-39 & B-40	1,111	1973	-	0.278	12	Closed Under Cancellation
	TOTAL				14,332			15	114	

Source: Sindh Small Industrial Corporation 2017

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

9.5 Trade and Commerce

As per data provided by Chamber of Commerce, Larkana in December 2018:

RICE

Total Production	
	07 Million acres
	3.5 Million acres Larkana
	2.5 Million acres Qambar Shadadkot

GUAVA

Total Production	
	1000 Hectors
	26000 acres
	76000 Metric Tons

HANDICRAFTS

Sindhi Caps, Quits, (Ralli), winnowing fans

Trading of Major Fruits and vegetables

Major Fruits	4500 Hectors
Guava	
Lemon	
Jujube	
Major Vegetables	6250 Hectors
Tomatoes	
Onions	
Spinach	
Fenugreek/ Methi	

Production of Larkana

1.	Wheat
2.	Seed Production
3.	Pipe Factory
4.	Pickle / Achar
5.	Sweets

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

9.6 Potential Production

1.	Rice	1,060,000 Hectors
2.	Guava	4,500 Hectors
3.	Tomatoes	6,250 Hectors
4.	Wheat	5,1323 Hectors
5.	Sugarcane	2,350 Hectors

Larkana district have continuous belt of forest along the river Indus in the eastern parts. Major production of timber and fire wood are obtained in the Larkana district.

Schemes Pertaining to Larkana Included in ADP 2013-14

					(Rs. in Million)
S. No.	Gen. Sr. No.		<u>Status</u>	Target Date for completion	Estimated Cost
		Sector / Sub-Sector/	Date of Approval		
		Name of Scheme			
1	2	3	4	5	6
2013-14					
		<u>AGRICULTURE</u>			
1	5	Strengthening of Quaid-e-Awam Agriculture Research Institute, Larkana	Approved 01.02.12	30.06.14	43.990
		TOTAL:-			43.990
2014-15 NIL					
2015-16					
		<u>INDUSTRIES</u>			
34	533	Infrastructure Development of Industrial Estate, Larkana	Un-approved	June-17	2000
2016-17					
		<u>INDUSTRIES & COMMERCE</u>			
29	814	Infrastructure Development of Industrial Estate, Larkana (C.2085 + R.40.489)	Approved 03.03.16	June-19	2125.489
2017-18					
		<u>INDUSTRIES & COMMERCE</u>			
36	950	Infrastructure Development of Industrial Estate, Larkana (Cap. 2085 + Rev. 40.489) (SDG # 9)	Approved 03.03.16	June-19	2125.489

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

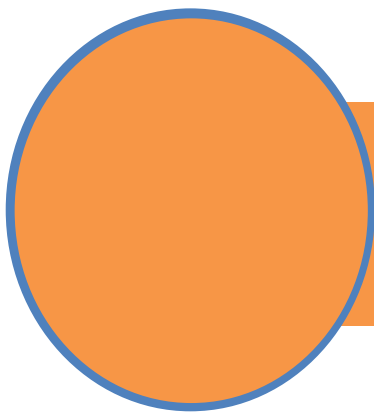
VOLUME-II

16. Priority Projects

16.1 List of Proposed Priority Projects – Short Term Development Proposals

Short term and long term development projects proposed in UDS Larkana for all relevant socio economic and physical infrastructure development projects are given in volume II on (pages 92-107) and reproduced at page nos. 80-85 in addendum - 2018

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)



Utility Services

Water Supply

Sewerage and Drainage

Solid Waste Management

“URBAN DEVELOPMENT STRATEGY FOR LARKANA” (2013 - 2033)

VOLUME-I

11.1 Water Supply

After the defunct of North Sindh Urban Services Corporation (NSUSC), Larkana Municipal Corporation (MC) is mandated to provide the services of water supply, sewerage, drainage and solid waste management under the SLGA 2013. However, Larkana MC does not provide water services in Larkana city as there is no piped water supply system in the city. Inhabitants have their own shallow wells. The underground water of the city has turned into high TDS water; hence a canal water scheme from Dadu Canal is under consideration.

11.1.2 Need Assessment / Supply Demand Gap

Based on the population census 2017 figures, Annual Growth Rate (AGR) for Larkana MC (3.19%) and domestic water utilization per capita per day at 40 gallons; water demand projection up to 2033 is calculated as under:

Water Demand Projections upto 2033 for Larkana MC		
Population years	Population (Persons)	Water Demand @ 40 GPCD (MGD)
2017	490,508	19.6
2018	506,155	20.2
2023	592,202	23.7
2028	692,877	27.7
2033	810,667	32.4

11.2 Sewerage and Drainage

As discussed above, after the defunct of North Sindh Urban Services Corporation (NSUSC), Larkana MC provides the services of sewerage, drainage and solid waste management under the SLGA 2013.

As per Annual Operational Plan 2016-17 of NSUSC, the coverage of house hold waste water system in Larkana MC was about 60% by the end of June 2016.

11.2.3 Need Assessment / Supply Demand Gap

Based on the water demand projections upto 2033 calculated above, projections of wastewater generation upto 2033 is estimated as under:

Wastewater Generation up to 2033 for Larkana MC			
Population years	Population (Persons)	Water Demand @ 40 GPCD (MGD)	Waste Water Demand @ 70% of Water Demand (MGD)
2017	490,508	19.6	13.7
2018	506,155	20.2	14.2
2023	592,202	23.7	16.6

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

2028	692,877	27.7	19.4
2033	810,667	32.4	22.7

11.2.4 O&M Cost and Tariff System

Composition of Operational Shortfall at Larkana:

Particulars	PKR (Million)
Revenue	
Revenue from water billing, Waste Water and Sanitation	12.40
Operating Expenditure	
Outsourcing SW collection at UCs	00.00
Salaries & wages	39.26
Deputation allowance	13.84
Employee incentive	3.70
Office rent	0.60
Electricity Bills	49.47
Electricity / Power generation	20.74
Chemicals & consumables	0.028
Travel & conveyance	3.63
Vehicle cost – SWM	24.43
Maintenance & regular repair	17.11
Comm. and Awareness Campaign	1.70
Office running cost	0.66
Total operating expenses	175.19
Operating Shortfall	162.79

(Source: Annual Operating Plan 2016-17 of NSUSC)

“URBAN DEVELOPMENT STRATEGY FOR LARKANA” (2013 - 2033)

11.3 Solid Waste

Government of Sindh established Sindh Solid Waste Management Board (SSWMB) through an act in 2014. The Board has the right over solid waste related issues, assets, funds and liabilities of the Councils and shall possess sole rights on all kinds of solid waste within the limits of all Councils. SSWMB Act also indicates that during the transition period, the existing Operations of Solid Waste Management will continue by the Councils. SSWMB has not yet taken over the functions of solid waste management at Larkana. Thus, currently Larkana Municipal Corporation is looking after the solid waste management in Larkana city².

Details of equipment received under a project carried out by NSUSC and percentage increase in lifting capacity of solid waste, following implementation of the project are given as under:

S. No.	3.5 m ³ Skips	Dumper	Tractor Trolley	Chingchi	7 m ³ Skips	Side Loading Trucks	Rear Loading Trucks	% Increase in SW Lifting Capacity
1	132	1	2	9	28	10	2	60

Details of the vehicles owned by the Larkana MC are as follows:

S.No.	Vehicle	Quantity
1.	Master Truck	07
2.	Wheel Loader	13
3.	Tractor Trolley	08
4.	Dumper	03
5.	Excavator	01
6.	Crane Machine	01
7.	Sweeper Machine	01
8.	Chinchi	25

(Source: Larkana Municipal Corporation)

As per Annual Operational Plan 2016-17 of NSUSC, the coverage of solid waste management in Larkana MC was about 60% by the end of June 2016.

²Sindh Solid Waste Management Board

“URBAN DEVELOPMENT STRATEGY FOR LARKANA” (2013 - 2033)

11.3.3 Need Assessment / Supply Demand Gap

Based on the population census 2017 figures, Annual Growth Rate (AGR) for Larkana MC (3.19%) and solid waste generation rate of 0.5 kg/person/day; projections of solid waste generation up to 2033 is estimated as under:

Solid Waste Generation up to 2033 for Larkana City		
Population years	Population (Persons)	Solid Waste Generation @ 0.5 kg/person/day (ton)
2017	490,508	245.3
2018	506,155	253.1
2023	592,202	296.1
2028	692,877	346.4
2033	810,667	405.3

21. Sector Wise Proposed Long Term Development Plan

Based on the population census 2017 figures and domestic water utilization per capita per day at 40 gallons, water demand projection up to 2033 is 32.4 MGD. It is projected that by 2033 sewerage water discharge in the city will reach 22.7 MGD approximately. Similarly, by 2033, solid waste generation will reach up to 405.3 tons per day.

VOLUME-II

15. Short Term Action Plan (2013-2018)

Since taking over the services of sewerage, drainage and solid waste management in Larkana, NSUSC has³:

- Improved the condition of disposal stations (This work is continuing)
- Introduced regular collection of solid waste
- Rehabilitation of 15 disposal stations by installation of submersible pumps with complete SCADA system, providing DG sets, new Transformer, replacement of 10 rising mains
- Introduced sweeping on daily basis including Sunday
- Introduced road master plan for sweeping of main roads
- Introduced two shifts for the Solid Waste Collection
- Outsourcing of UCs for effective and efficient Operations.
- Procured and commissioned new skips and trucks and organized the collection system
- Implemented a Complaints Management System
- Introduced an Asset Management System
- Introduced a Payroll Management System for NSUSC Salaries of TMA Staff deputed to NSUSC
- Introduced Water Billing & Collection System
- Set up a NSUSC website

³Annual Operating Plan 2016-17 of NSUSC

“URBAN DEVELOPMENT STRATEGY FOR LARKANA” **(2013 - 2033)**

Annual Development Plan Schemes 2013-18

Details of last five years ADP schemes (2013-14 to 2017-18) pertaining to water supply, drainage and solid waste management for Larkana city are as under:

(Rs. in million)							
Gen.Sr . No.	Sector / Sub-sector / Name of Scheme	Estimated Cost	Estimated Expenditure	Throw forward	Allocat- ion	Release	Expen- diture
ADP 2017-18							
1481	Larkana Development Plan (SDG # 6)	747.420	615.250	132.170	50.000	50.000	49.993
1542	Improvement of Sewerage System of Sachal Colony, Larkana City (SDG # 6)	50.000	-	50.000	12.500	3.125	-
2146	Ext: & Imp: of existing sewerage system of Larkana City (Revised) (SDG # 6)	1,406.068	1,142.982	263.086	20.000	253.086	192.600
2147	Providing Paver Tile & Drainage System for UC-13, 14, 15, 16, 17 & 19 of Larkana City (SDG # 6)	30.000	7.500	22.500	22.500	22.500	20.185
2153	Construction of C.C. Drains and C.C. Block at various U.Cs of PS-38 Taluka Larkana (SDG # 6)	34.723	26.000	8.723	8.723	8.723	8.723
ADP 2016-17							
1259	Construction of paver block and cc drains in various streets of Larkana City	70.000	40.000	30.000	30.000	30.000	0.000
1267	Larkana Development Plan.	747.420	217.000	530.420	150.000	150.000	149.997
1891	Development Schemes of NA-204 Larkana Construction of C.C.Drains including C.C Blocks for various U.Cs Larkana	31.462	16.000	15.462	15.462	15.462	15.462
1896	Construction of C.C. Drains and C.C. Block at various U.Cs of PS-38 Taluka Larkana	34.723	16.000	18.723	10.000	10.000	9.662

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

1898	Ext: & Imp: of existing sewerage system of Lakana City	1406.068	829.093	576.975	25.500	301.120	301.119
1899	Providing Paver Tile & Drainage System for UC-13, 14, 15, 16, 17 & 19 of Larkana City	30.000	0.000	30.000	7.500	7.500	7.500
ADP 2015-16							
978	Construction of CC topping Roads / Streets and CC drains in various colonies of Larkana City.	267.570	217.527	50.043	50.043	50.043	50.043
980	Construction of Paver Block & CC Drains in Various Streets of Larkana City	70.000	10.000	60.000	30.000	30.000	0.000
992	Larkana Development Plan.	747.420	0.000	747.420	500.000	217.830	217.830
993	Construction of Paver Block & Drains in various Streets of Larkana City.	70.000	34.000	36.000	36.000	36.000	35.999
1428	Development Schemes relating to Drainage Sector C.C.Drains and C.C Bloks in various Muhalla of U.C -07 LarkanaCity.	21.387	11.387	10.000	10.000	10.000	10.000
1429	Development Schemes of NA-204 Larkana Construction of C.C.Drains i/c C.C Bloks for various U.Cs Larkana	31.462	6.000	25.462	10.000	10.000	10.000
1434	Construction of C.C. Drains and C.C. Block of various U.C's of PS-38 Taluka / District Larkana,	34.723	6.000	28.723	10.000	10.000	10.000
1437	Ext: & Imp: of existing sewerage system of Lakana City.	829.400	325.000	504.400	25.000	405.000	404.991
1608	Integrated Municipal Solid Waste Management Project Municipal Corporation, Larkana (Phase-I). Total Cost = 850.000 M L.M.C Share = 132.000 M NSUSC Share = 21.600 M	696.400	0.000	696.4000	174.100	0.000	0.000

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

	ADP Share = 696.400 M (C:545+R:151.4)						
1609	Integrated Municipal Solid Waste Management Project Municipal Corporation, Larkana (Phase-II) LFS + MRF. (C:395+R:95)	490.000	0.000	490.000	122.500	0.000	0.000
ADP 2014-15							
1427	Construction of CC topping Roads / Streets and CC drains in various colonies of Larkana City.	267.570	166.749	100.821	50.821	50.821	50.820
1456	Construction of Paver Block & CC Drains in Various Streets of Larkana City	70.000	0.000	70.000	10.000	10.000	0.000
1826	5 Nos: Schemes of R.O Plant	59.380	0.000	59.380	2.000	0.000	0.000
1892	Development Schemes relating to Drainage Sector C.C.Drains and C.C Block in various Muhalla of U.C -07 LarkanaCity.	21.387	10.000	11.387	11.387	11.387	11.383
1893	Development Schemes of NA-204 Larkana Construction of C.C.Drains i/c C.C Bloks for various U.Cs.	31.462	5.000	26.462	6.000	6.000	6.000
1898	Construction of C.C. Drains and C.C. Block of various U.C's of PS-38 Taluka / District Larkana.	34.723	5.000	29.723	6.000	6.000	6.000
1901	Improvement & Extension of Drainage System in Sachal Colony Larkana City.	20.700	10.000	10.700	10.700	5.350	0.000
1902	Construction of C.C. Drains, C.C. Block and Paver Block in UC-8,9,10 and 11 of Larkana City.	24.920	10.000	14.920	14.920	7.460	0.000
1903	Extension & Improvement of Existing Sewerage system of Larkana City	829.400	0.000	829.400	25.000	400.000	399.993
1978	Special Package of Development Schemes for Distt: Larkana	1000.000	0.000	1000.000	4.000	0.000	0.000

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

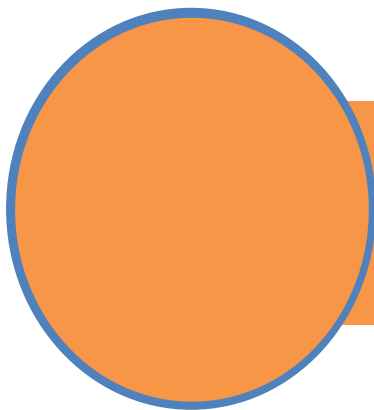
1979	Sanction of Development Schemes in NA-204 Larkana	15.000	0.000	15.000	4.000	0.000	0.000
ADP 2013-14							
1208	Construction of CC Drains, providing pumping machinery, repair of Civil structures and cleaning of Collecting tanks and sewer lines for Civil, Teaching, ShaikhZaid Women & Paeds Hospital Larkana	11.640	0.000	11.640	11.640	11.640	10.940
1417	Improvement & Extension of Drainage Scheme Dodai.	9.591	2.000	7.591	7.600	3.800	3.778
1496	Development Schemes relating to Drainage Sector C.C.Drains and C.C Bloks in various Muhalla of U.C -07 LarkanaCity.	21.387	0.000	21.387	10.000	0.000	0.000
1497	Development Schemes of NA-204 Larkana Construction of C.C.Drains i/c C.C Blocks & Community Center for various U.Cs.	31.462	0.000	31.462	5.000	0.000	0.000
1502	Construction of C.C. Drains and C.C. Block of various U.C's of PS-38 Taluka / District Larkana	34.723	0.000	34.723	5.000	0.000	0.000
1505	Improvement & Extension of Drainage System in Sachal Colony Larkana City.	20.700	0.000	20.700	10.000	15.700	18.016
1506	Construction of C.C. Drains, C.C. Block and Paver Block in UC-8,9,10 and 11 of Larkana City.	24.920	0.000	24.920	10.000	16.900	16.859

16. Priority Projects

16.1 List of Proposed Priority Projects – Short Term Development Proposals

Short term and long term development projects proposed in UDS Larkana for all relevant socio economic and physical infrastructure development projects are given in volume II on (pages 92-107) and reproduced at page nos. 80-85 in addendum - 2018

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)



Community Facilities

Education

Health

Recreational / Cultural Facilities

“URBAN DEVELOPMENT STRATEGY FOR LARKANA” (2013 - 2033)

VOLUME-I

12. COMMUNITY FACILITIES

12.1 Education

As per Sindh Education Profile 2016-17, there are a total of 1158 schools in Larkana district. There are 1021 Primary Schools, 55 middle Schools, 09 elementary schools, 59 Secondary schools and 14 Higher Secondary schools. Following table gives details of schools, enrollment and number of teachers posted in Larkana district;

Table C2: Numbers of Schools in Larkana District

S. No	Type of Schools	No. of Schools	Enrolment	No. of Teachers
1	Primary Schools	1021	158,612	4,925
3	Middle Schools	55	8,735	322
3	Elementary Schools	09	3,527	105
4	Secondary Schools	59	48,868	1,408
5	Hi. Secondary Schools	14	25,748	707
	Total	1,158	245,490	7,467

Source: Sindh Education Profile (2016-2017), Sindh Education & Literacy Department, Govt of Sindh

12.1.4 NEED ASSESMENT

As per Sindh Education Profile, following table depicts present status of class rooms and shortage of class rooms;

Table: C3 Present Need of Classrooms in Larkana District

S. No	Description	Results
Present Need assessment of Schools (2017)		
1	Total present enrolments	245,490
2	Classrooms available at present	2,894
3	Students per classroom at present	84
4	Classrooms required for present need @ 30 students per classroom	8,183
5	Present shortage of classrooms	5,289

Source: Sindh Education Profile (2016-2017), Sindh Education & Literacy Department, Govt of Sindh and Directorate's estimates.

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

Table C4: Future Requirement of Classrooms in Larkana District

S.No	Description	Results
Future Need assessment of Schools (2035)		
1	Expected total enrolment by 2035 @ 100% enrolment	349,371
2	Total classrooms requirement in 2035	11,645
3	Additional classrooms requirement in 2035(After filling present Gap)	3,462

Source: Sindh Education Profile (2016-2017), Sindh Education & Literacy Department, Govt of Sindh, Directorate's estimates

Table C5: List of Schools in Larkana

#	DISTRICT	TEHSIL	UC	SEMIS CODE	SCHOOL	ENROLMENT	TEACHERS POSTED
1	Larkana	Larkana	No-3	413020035	GBPS MUNWARAB AD.	254	13
2	Larkana	Larkana	No-3	413020321	GBPS SACHAL COLONY.	531	20
3	Larkana	Larkana	No-4	413020036	GBPS NAZAR.	591	18
4	Larkana	Larkana	No-2	413020047	GBPS SOOMRA MUHALLA LARKANA.	171	7

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

#	DISTRICT	TEHSIL	UC	SEMIS CODE	SCHOOL	ENROLM ENT	TEACHERS POSTED
5	Larkana	Larkana	No-5	413020146	GBPS O.C RAHMAT PUR.	706	11
6	Larkana	Larkana	No-12	413020155	GBPS SHAHOO BORAHO.	80	10
7	Larkana	Larkana	No-15	413020055	GGPS ALI GOHAR ABAD.	258	26
8	Larkana	Larkana	No-17	413020067	GGPS GHOUSPUR.	186	23
9	Larkana	Larkana	No-1	413020122	GGPS WAPDA COLONY.	257	22
10	Larkana	Larkana	No-2	413020153	GBPS ABBAS COLONY	455	17
11	Larkana	Larkana	No-3	413020059	GGPS MUNAWAR ABAD.	108	9
12	Larkana	Larkana	No-3	413020068	GGPS WALEED.	45	11

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

#	DISTRICT	TEHSIL	UC	SEMIS CODE	SCHOOL	ENROLM ENT	TEACHERS POSTED
13	Larkana	Larkana	No-12	413020087	GGPS SHAHOO BORAHO.	112	7
14	Larkana	Larkana	No-8	413020063	GGPS LAHORI.	405	41
15	Larkana	Larkana	No-9	413020084	GGPS SHAHEED ABDUL QADIR LAGHARI.	389	38
16	Larkana	Larkana	No-13	413020348	GBPS SHAH MUHAMMAD SINDHI.	746	53
17	Larkana	Larkana	No-3	413020369	GBPS MUHAMMAD I COLONY.	137	13
18	Larkana	Larkana	No-14	413020071	GGPS MAIN SCHOOL LARKANA.	190	18
19	Larkana	Larkana	No-1	413020281	GBPS WAPDA COLONY.	747	22
20	Larkana	Larkana	No-3	413020124	GGPS SACHAL COLONY.	198	22

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

#	DISTRICT	TEHSIL	UC	SEMIS CODE	SCHOOL	ENROLLM ENT	TEACHERS POSTED
21	Larkana	Larkana	No-9	413020329	GBPS COLLECTOR ATE.	257	12
22	Larkana	Larkana	No-12	413020012	GBPS GHULAM BHUTTO.	529	21
23	Larkana	Larkana	No-14	413020057	GGPS P.V PRIMARY.	101	18
24	Larkana	Larkana	No-9	413020318	GBPS SHAHABAD.	389	26
25	Larkana	Larkana	No-5	413020320	GBPS RAHMAT PUR.	966	44
26	Larkana	Larkana	No-4	413020060	GGPS NAZAR.	732	35
27	Larkana	Larkana	No-4	413020105	GGPS NEW NAZAR.	333	36
28	Larkana	Larkana	No-8	413020252	GBPS LAHORI.	607	35

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

#	DISTRICT	TEHSIL	UC	SEMIS CODE	SCHOOL	ENROLM ENT	TEACHERS POSTED
29	Larkana	Larkana	No-8	413020422	GBPS Govt PC School attached GECE(M)	0	0
30	Larkana	Larkana	No-11	413020013	GBPS CHANNA.	96	18
31	Larkana	Larkana	No-10	413020045	GBPS HYDRI MUHALLA LARKANA.	201	23
32	Larkana	Larkana	No-11	413020070	GGPS GAJAN PUR	834	35
33	Larkana	Larkana	No-18	413020054	GGPS ALLAHABAD	172	12
34	Larkana	Larkana	No-1	413020280	GBPS NEW DIST.JAIL COLONY 1.	440	14
35	Larkana	Larkana	No-3	413020127	GGPS MODEL COMMUNITY VALEED	97	9
36	Larkana	Larkana	No-4	413020283	GBPS CHANDKA COLONY LARKANA.	514	17

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

#	DISTRICT	TEHSIL	UC	SEMIS CODE	SCHOOL	ENROLM ENT	TEACHERS POSTED
37	Larkana	Larkana	No-7	413020085	GGPS KOTHI @ JURIO CHANDIO.	42	4
38	Larkana	Larkana	No-12	413020096	GGPS GHULAM BHUTTO.	158	9
39	Larkana	Larkana	No-14	413020053	GGPS MODEL SCHOOL.	371	17
40	Larkana	Larkana	No-13	413020272	GBPS M.ALI DEENI MADARESAH .	806	55
41	Larkana	Larkana	No-18	413020238	GBPS ALLAH ABAD.	352	11
42	Larkana	Larkana	No-6	413020359	GBPS CATTLE COLONY	666	18
43	Larkana	Larkana		111669784	GBPS DEO (ACADEMIC & TRAINING) LARKANA	0	0
44	Larkana	Larkana	No-1	413020370	GBPS FAISAL COLONY LARKANA	959	28

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

#	DISTRICT	TEHSIL	UC	SEMIS CODE	SCHOOL	ENROLM ENT	TEACHERS POSTED
45	Larkana	Larkana	No-4	413020004	GBPS NEW NAZAR.	799	31
46	Larkana	Larkana	No-9	413020322	GBPS RAILWAY COLONY.	468	19
47	Larkana	Larkana	No-15	413020052	GGPS GHULAM HYDER MUGHAL.SIN DHI.	845	24
48	Larkana	Larkana	No-14	413020061	GGPS MUGHAL URDU	62	10
49	Larkana	Larkana	No-17	413020037	GBPS GHOU PUR.	491	14
50	Larkana	Larkana	No-17	413020303	GBPS KHAIR SHAH BUKHARI.	275	15
51	Larkana	Larkana	No-16	413020062	GGPS MURAD WAHAN.	770	51
52	Larkana	Larkana	No-20	413020305	GBPS ABDUL RAHMAN MACHHI.	719	29

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

#	DISTRICT	TEHSIL	UC	SEMIS CODE	SCHOOL	ENROLM ENT	TEACHERS POSTED
53	Larkana	Larkana	11- Larkan a-11	913000018	GGPS KHALIQUE COLONY	40	12
54	Larkana	Larkana	No-1	413020373	GBPS WAPDA COLONY II	514	24
55	Larkana	Larkana	No-3	413020254	GBPS WALEED.	548	16
56	Larkana	Larkana	No-7	413020330	GBPS SYED ZULFIQAR ALI SHAH @ MUMTAZ COLONY	220	4
57	Larkana	Larkana	No-11	413020008	GBPS SIDDIQUI COLONY.	595	22
58	Larkana	Larkana	No-11	413020121	GGPS CHANNA MUHALLA.	141	10
59	Larkana	Larkana	No-11	413020240	GBPS KOUSAR MILL.	270	14
60	Larkana	Larkana	No-15	413020023	GBPS ALI GOHAR ABAD.	730	42

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

#	DISTRICT	TEHSIL	UC	SEMIS CODE	SCHOOL	ENROLM ENT	TEACHERS POSTED
61	Larkana	Larkana	No-15	413020107	GGPS QAFILA SARAI.	326	16
62	Larkana	Larkana	No-17	413020103	GGPS LILA ABAD.	8	9
63	Larkana	Larkana	No-2	413020129	GGPS SHAIKH ZAID II	279	34
64	Larkana	Larkana	No-3	413020341	GBPS P.T.S. COLONY.	93	5
65	Larkana	Larkana	No-3	413020372	GBPS SHAHBAZ COLONY LARKANA.	443	16
66	Larkana	Larkana	No-6	413020123	GGPS BHENS COLONY.	363	24
67	Larkana	Larkana	No-7	413020324	GBPS JURIO CHANDIO.	153	10
68	Larkana	Larkana	No-9	413020160	GBPS O.C NEW LAHORI.	694	48

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

#	DISTRICT	TEHSIL	UC	SEMIS CODE	SCHOOL	ENROLM ENT	TEACHERS POSTED
69	Larkana	Larkana	No-11	413020253	GBPS GAJAN PUR	176	9
70	Larkana	Larkana	No-3	413020421	GGPS Govt. P C School attached GECE(W)	0	0
Middle							
1	Larkana	Larkana	2- Larkana	913000017	GMHS SACHAL COLONY	0	0
2	Larkana	Larkana	No-11	413020432	GGLSS CHANNA MUHALLAH	28	7
3	Larkana	Larkana	No-9	413020385	GGLSS SHAHEED ABDUL QADIR LEGHARI	108	8
4	Larkana	Larkana	No-19	413020029	GBLSS KARMA BAGH.	1165	46
5	Larkana	Larkana	No-4	413020382	GGLSS NAZAR	356	13

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

#	DISTRICT	TEHSIL	UC	SEMIS CODE	SCHOOL	ENROLM ENT	TEACHERS POSTED
6	Larkana	Larkana	No-16	413020386	GGLSS MURAD WAHAN	52	17
7	Larkana	Larkana	No-4	413020378	GBLSS NAZAR MUHALLA	0	5
Elementary							
1	Larkana	Larkana	No-20	413020113	GGELS ABDUL REHMAN MACHHI	352	23
2	Larkana	Larkana	No-3	413020423	GGELS Govt. Elementary School attached GECE(W)	0	0
3	Larkana	Larkana	No-1	413020394	GBLSS WAPDA COLONY LARKANA	0	5
4	Larkana	Larkana	11- Larkan a-11	913000016	GGLSS AR MACHHI LARKANA	0	4
5	Larkana	Larkana	No-8	413020424	GBELS Govt. Elementary School attached GECE(M)	0	0

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

#	DISTRICT	TEHSIL	UC	SEMIS CODE	SCHOOL	ENROLM ENT	TEACHERS POSTED
6	Larkana	Larkana	10- Larkan a-10	913000010	GBLSS KHAIR SHAH UKHARI	0	7
7	Larkana	Larkana	11- Larkan a-11	913000011	GBLSS KHALIQUE COLONY	0	6
SEC&HSEC							
1	Larkana	Larkana	No-8	413020418	GBHSS PILOT HIGHER SECONDARY SCHOOL LARKANA.	5253	142
2	Larkana	Larkana	No-13	413020408	GGHS MUGHAL LARKANA	735	53
3	Larkana	Larkana	No-8	413020414	GBHS SAINT JOSEPH.	2615	63
4	Larkana	Larkana	No-12	413020403	GBHS D.C LARKANA.	702	47
5	Larkana	Larkana	No-14	413020420	GGHSS LARKANA.	1759	106

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

#	DISTRICT	TEHSIL	UC	SEMIS CODE	SCHOOL	ENROLM ENT	TEACHERS POSTED
6	Larkana	Larkana	No-11	413020397	GBHS GAJAN PUR	802	20
7	Larkana	Larkana	No-11	413020411	GGHS GAJAN PUR	881	20
8	Larkana	Larkana	No-13	413020402	GBHS DEENI MADERSSAH LARKANA.	1600	41
9	Larkana	Larkana	No-15	413020396	GBHS BAHAR PUR.	288	42
10	Larkana	Larkana	No-2	413020400	GBHS SHAIKH ZAID BIN SULTAN COLONY.	1646	65
11	Larkana	Larkana	No-4	413020393	GBHS RAHMATPUR .	646	24
12	Larkana	Larkana	No-9	413020419	GBHSS MUNICIPLE HIGHER SECONDARY SCHOOL LRK:	1412	89

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

#	DISTRICT	TEHSIL	UC	SEMIS CODE	SCHOOL	ENROLM ENT	TEACHERS POSTED
13	Larkana	Larkana	No-3	413020431	GBHS SACHAL COLONY	110	15
14	Larkana	Larkana		111669184	GGHS HAJI LAL BUX SHAIKH	0	0
15	Larkana	Larkana	No-14	413020412	GGHS MODEL SCHOOL (E.M) LARKANO.	1386	48
16	Larkana	Larkana	No-14	413020416	GBHS LITTLE FOLKS	568	46
17	Larkana	Larkana		111669182	GGHS SHAIKH ZAID COLONY	0	3
18	Larkana	Larkana	No-8	413020409	GGHS LAHORI MUHALLA LARKANA.	794	34
19	Larkana	Larkana	No-4	413 020 379	GGHS RAHMAT PUR	348	16
20	Larkana	Larkana		111 669 183	GGHS DISTRICT JAIL COLONY LARKANO	0	1

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

#	DISTRICT	TEHSIL	UC	SEMIS CODE	SCHOOL	ENROLM ENT	TEACHERS POSTED
21	Larkana	Larkana	No-3	413020398	GBHS WALEED LARKANA.	545	19
22	Larkana	Larkana	No-3	413020405	GGHSS MUNAWARA BAD	1140	27

Source: School Education & Literacy Department, Govt of Sindh

“URBAN DEVELOPMENT STRATEGY FOR LARKANA” (2013 - 2033)

12.2 Health

12.2.1 Medical Facilities

Following table indicates present situation of healthcare facilities in Larkana District;

Medical Facilities in Larkana

Medical facilities	Govt, Semi Govt and Local Bodies Health Facilities	Beds
Total	62	2945

Source: Health Profile of Sindh 2016, Bureau of Statistics Planning & Development Department, Government of Sindh

Source: Health Profile of Sindh (District wise) 2016, Bureau of statistics, P&DD Govt of Sindh,

12.2.2 Hospital/ Bed Ratio

Overall situation regarding availability of hospital beds in Larkana District is shown as under:

Table C6: Details of hospital beds

Population	BED Capacity	Available Beds	Present Need	Required Beds
2018				
1,558,384		3,069	3,116	47
Future Population		Available no beds	Future Need of Beds	Required no of beds for Future
2033				
2,169,450		3,069	4,338	12,69

Source: Health Profile of Sindh (District wise) 2016, Bureau of statistics, P&DD Govt of Sindh, Directorate's estimates

Details of Doctors

Following are details of existing availability of doctors and future requirements for Larkana District

Population	Doctors Capacity	Available Doctors	Present Need	Required Doctors
2018				
1,558,384		393	1558	1165
Future Population		Available no of Doctors	Future Need of Doctors	Required no of Doctors For Future*
2035				
2,169,450		393	2169	1776
* After filling present Gap				

Source: Health Profile of Sindh (District wise) 2016, Bureau of Statistics, P&DD Govt of Sindh, Directorate's estimates

“URBAN DEVELOPMENT STRATEGY FOR LARKANA” (2013 - 2033)

12.3 Recreational/ Cultural Facilities

12.3.5 Tourism / Archaeology

No of international tourists expected

According to a report, 1.75 million international tourists visited Pakistan in 2017 alone. The number of international tourists is gradually growing.⁴

Tourism potential in Pakistan

Over the past few years, Pakistan has seen a rapid increase in its tourism industry. A lot of credit, for which, goes to the internet. It has immensely contributed towards the development and growth of the tourism industry in Pakistan.

Pakistan has been ranked the world's top travel destination for 2018 by the British Backpacker Society, which described Pakistan as “one of the friendliest countries on earth, with mountain scenery that is beyond anyone's wildest imagination. Pakistan is the clear winner of the British Backpacker Society's top 20 adventure travel destinations 2018 and we encourage keen travelers to book a trip now” the backpackers, who have travelled to over 101 countries, shared on social media.⁵

According to international Booking.com and Jovago, the top hotel booking and e-commerce sites, there has been a significant increase in the annual tourism rate and business traveling in Pakistan.

Significantly improved security situation has helped boost annual tourist arrivals in Pakistan by 300% during past few years with 1.75 million tourist arrivals in 2017. Domestic travelers have increased by 30%, according to the state-owned Pakistan Tourism Development Corporation. According to Jovago, hotel bookings increased 80-90% in 2017.

Tourism Potential in Sindh

Sindh's remarkable tourism potential has largely remained unexplored. The Indus Valley Civilization (IVC) was a Bronze Age civilization (mature period 2600–1900 BCE) which was centered mostly in Sindh.

Gorakh hill station, Keenjhar lake, pre-historic site of Moen jo Daro, Makli necropolis, various forts & palaces spread throughout Sindh, and beautiful beaches on the shore of Arabian Sea make Sindh truly an ideal destination for tourism.

⁴(Source: PTDC& World Travel & Tourism Council)

⁵(Source Gulf News)

“URBAN DEVELOPMENT STRATEGY FOR LARKANA” (2013 - 2033)

Tourism potential in Larkana

Larkana, is situated in the north-west of Sindh. Referred to as the Eden of Sindh, Larkana is home to the historic Indus river and Mohen– Jo- Daro civilization site.

Mohen-Jo-Daro: The top remains of the Indus Valley Civilization as Mohen-jo-Daro, which was abandoned along with the decline of the Indus valley civilization, is located in Larkana district. It was rediscovered after 3,700 years and among some notable relics found were a sculpture of a dancing girl, a priest-king, seven-stranded necklace, Buddhist stupa, and much more, that represent its history. Every year a large number of international tourists visit here.

Garhi Khuda Bux: is a small village located in Larkana and is also home to the Mausoleum of Bhutto family. It is a popular destination amongst supporters of the Bhutto family who visit their graves whenever they visit the city.

Sir Shahnawaz Bhutto Public Library: This library was commenced in 1984 and is greatly valued as it provides educational facilities to the public. It is home to books by more than 8,000 authors and categories and also contains an internet café. The library plans to establish a museum in the future.

Other Historical Places: Tajjar Building, which is remain of Kalhora Dynasty, situated in Jinnah Bagh is a significant historic place. Square Tower near Dhamraho town is also a landmark for national and international tourists.

Shopping: With its historic background, Larkana is known to have a modern structure. Everything is available here. Larkana has various shops and markets as well as shopping malls, where one would find clothing based on Ajrak patterns.

21. Sector-wise Proposed Long Term Development Plan (Up To 2033)

21.9 Health, 21.10 Education and 21.11 Recreation

The long-term plan (up to 2033) stipulated in UDS Larkana sufficiently caters for demand up to plan period.

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

Details of Last Five Year ADP of EDUCATION Sector Larkana

S. No.	Gen. Sr. No.		<u>Status</u>	Target Date for completion	Estimated Cost
		Sector / Sub-Sector/	Date of Approval		
		Name of Scheme			
2013-14					
1	240	Establishment of Shaheed Mohtarma Benazir Bhutto Govt. College of Education at Larkana (revision)	Approved 10.12.2011	30.06.2013	160.000
2	252	Construction of Govt. Shaheed Benazir Bhutto Law College Larkana. (Revised)	Approved 28.01.2012	30.06.2013	84.978
3	266	Immediate Needs for Establishment of Quaid-e-Awam University College of Engineering Science and Technology at Larkana (Revised)	Approved 28.05.2009	30.06.2013	998.690
4	270	Establishment of Quaid-e-Awam University of Engineering Science & Technology, Constituent College / Campus at Larkana	Approved 13.01.2011	30.06.2014	2636.908
5	293	Construction of Office Building for the Regional Director Colleges Larkana	Approved 03.02.2011	30.06.2013	40.000

2014-15

1	188	Up-gradation of Primary Schools to Middle Schools in District Larkana	Un-approved	June-17	30.000
2	217	Construction / Recnostruction of Two Roomed Building in Existing Shelterless Primary Schools in	Un-approved	June-17	20.000

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

		District Larkana			
3	243	Rehabilitation / Reconstruction of Existing Primary & Elementary Schools in Sindh (Damaged due to Rain / Flood or any other conditions) District Larkana	Un-approved	June-17	40.000
4	260	Provision of Furniture in Existing Primary / Elementary Schools in Larkana Division	Un-approved	June-17	60.000
5	267	Rehabilitation / Re-Construction & Provision of Missing Facilities in Existing Elementary Colleges in Larkana Division	Un-approved	June-17	100.000
6	321	Rehabilitation of Existing High Schools & Higher Secondary Schools in District Larkana	Un-approved	June-17	40.000
7	350	Up-gradation of Middle Schools to High Schools in District Larkana	Un-approved	June-17	40.000
8	374	Re-construction of Dangerous Elementary / High Schools in District Larkana	Un-approved	June-17	40.000
9	395	Provision of Furniture in Existing Secondary / Higher Secondary Schools in Larkana Division	Un-approved	June-17	60.000
10	423	Establishment of Shaheed Mohtarma Benazir Bhutto Govt. College of Education at Larkana (Revised)	Approved 12.12.13	June-16	178.671
11	437	Miscellaneous Immediate Works of Cadet College Larkana	Approved 08.11.12	June-15	113.229

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

12	467	Establishment of Quaid-e-Awam University of Engineering Science & Technology, Constituent College / Campus at Larkana	Approved 13.01.11	June-15	2636.908
13	514	Provision of Sports Facilities in High Schools / Colleges of Larkana Division.	Un-approved	June-17	60.000
14	519	Construction / Reconstruction of Existing Offices for Field Officers of Education & Literacy Department in Larkana Division	Un-approved	June-17	60.000
15	526	Schools Improvement through Adopt a School Intervention Larkana Division	Un-approved	June-17	60.000
16	531	Schools Improvement through PPP Initiatives Larkana Division	Un-approved	June-17	60.000

2015-16

1	126	Rehabilitation / Re-construction of Existing Primary & Elementary Schools in Sindh (Damaged due to Rain / Flood or any other condition) District Larkana	Approved 27.10.14	June-18	56.134
2	134	Provision of Furniture in Existing Primary / Elementary Schools in Larkana Division	Approved 06.05.15	June-18	59.550
3	143	ECE Intervention Larkana Division	Un-Approved	June-18	50.000
4	194	Provision of Furniture in Existing Secondary / Higher Secondary Schools in Larkana Division	Approved 06.05.15	June-18	54.495

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

5	196	Rehabilitation of Existing High Schools & Higher Secondary Schools District Larkana	Approved 27.10.14	June-18	28.180
6	208	Improvement of Existing Public School in Larkana Division	Un-Approved	June-18	60.000
7	221	Provision of Furniture to Schools Constructed under SBEP in District Larkana	Un-Approved	June-18	45.000
8	233	Establishment of Shaheed Mohtarma Benazir Bhutto Govt. College of Education at Larkana (Revised) (C: 158.017 + R: 20.654)	Approved 12.12.13	June-15	178.671
9	273	Provision of Furniture in Existing Degree Colleges in Larkana Division	Un-Approved	June-18	60.000
10	293	Construction / Re-construction of Existing of Offices for Field Officers of Education & Literacy Department Larkana Division (C: 55.384 + R: 4.416)	Approved 06.05.15	June-18	59.800
11	295	Schools Improvement through Adopt a Schools Intervention Larkana Division (AASP)	Un-Approved	June-18	60.000
2	305	Schools Improvement through PPP Initiatives Larkana Division	Un-Approved	June-18	40.000

2016-17

1	182	Rehabilitation, Improvement / Renovation & Provision for Missing Facilities in Existing Primary / Elementary Schools	Approved	June-18	-
2	211	Construction of Building for Shelterless Primary School	Approved	June-18	-

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

3	276	Rehabilitation of Existing High Schools & Higher Secondary Schools, District Larkana	Approved 27.10.14	June-17	-
4	328	Rehabilitation, Improvement / Renovation & Provision for Missing Facilities in Existing Secondary / Higher Secondary Schools	Approved	June-18	-
5	352	Provision of Furniture to Schools, Constructed under SBEP in District Larkana (Assisted by USAID).	Un-Approved	June-18	-
6	1605	Establishment of Begum Nusrat Bhutto Girls Degree College, Larkana (Cap:Rs.133.299 m + Rev.Rs.9.810 m)	Approved 16.04.14	June-17	-

2017-18

1	182	Rehabilitation, Improvement / Renovation & Missing Facilities in Existing Primary / Elementary Schools (C: 37.192 + R: 1.040)	Approved 23.09.16	June-18	38.232
2	211	Construction of Buildings for Shelterless Primary Schools (C:18.069 + R:1.524)	Approved 23.09.16	June-18	19.593
3	256	Up-gradation of Primary Schools to Elementary Schools(05 Units).	Approved 20.06.17	June-18	50.000
4	285	Solarization of Existing Elementary Schools.	Approved 11.07.17	June-20	40.000

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

5	360	Rehabilitation, Improvement / Renovation & Missing Facilities in Existing Secondary / Higher Secondary Schools (C:35.886 + R: 2.436)	Approved 31.10.16	June-18	38.477
6	412	Provision of Furniture to Schools Constructed under SBEP in District Larkana (Assisted by USAID).	Approved 20.06.17	June-19	58.500
7	565	Construction of B-Tech Section at Government College of Technology (GCT) (SDG # 1,4,9)	Approved 19.02.18	June-20	250.000
8	571	Establishment of Quaid-e-Awam University of Engineering Science & Technology, Constituent College / Campus at Larkana (C:1131.925 + R:1504.983) (SDG # 4)	Approved 13.01.11 (U/R)	June-20	2636.908
9	600	Establishment of Postgraduate Research and Diagnostic Laboratory at SMBBMU, Larkana (SDG # 4)	Un-Approved (N/Recd.)	June-19	50.000
10	1812	Establishment of Begum Nusrat Bhutto Girls Degree College, Larkana (Cap:Rs.133.299 m + Rev.Rs.9.810 m) (SDG # 4)	Approved 16.04.14	June-18	143.109

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

Details of Last Five Year ADP of HEALTH Sector Larkana

S. No.	Gen. Sr. No.		<u>Status</u>	Target Date for completion	Estimated Cost
		Sector / Sub-Sector/	Date of Approval		
		Name of Scheme			
2013-14					
1	367	Up gradation of Surgery Department, surgery equipments for OT, modernization of Laboratory, Blood Bank & establishment of oncology treatment ward (30 Bedded) at CMCH Larkana.	Approved 24.03.2011	June-14	143.235
2	368	Establishment of Shaheed Benazir Bhutto Skin Diseases Complex and Hepatology and Dental Deptt: at CMCH Larkana.	Approved 21.04.2011	June-15	134.916
3	370	Revamping / Revitalization of Shaikh Zaid Hospital for Women Larkana.	Approved 31.05.2011	June-15	161.352
4	371	Establishment of 50 bedded Medical & Surgical ICU and expansion of Casualty & OPD Department at CMCH, Larkana.	Approved 02.03.2012	June-14	178.530
5	434	Renovation and Rehabilitation of Paramedical Institute at Larkana	Approved 23.01.12	June-14	67.733
6	513	Establishment of Dental Faculty in Chandka Medical College Larkana.	Approved 15.12.11	June 14	153.245

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

7	514	Renovation & Rehabilitation of Auditorium Hall in the premises of Chandka Medical College Larkana.	Approved 29.12.06	June 15	28.231
8	1831	Rehabilitation/Renovation of existing various Health Facilities i/c (04 Nos) Ambulances in District Larkana (C:125.300+R:20.000) (SDG # 3)	Approved 16.04.14	June-18	145.300
2014-15					
1	620	Establishment of Madam Faryal Talpur Cardiac Surgery Complex at CMC Hospital, Larkana having facilities of: i. Coronary Angiography Cardiac Catheterized Lab ii. Cardiac Bypass Surgery iii. Chest Surgery at Chandka Medical College Hospital Larkana. (C. 51.123 + R. 239.394)	Approved 21.04.11 U/R	June-15	290.517
2	621	Construction of Neuro Science Complex at CMCH Larkana, containing: 1. Neurosurgery Department 2. Neuro Medicine (Neurology Department) 3. Psychiatry Department. (C. 44.425 + R. 170.210)	Approved 24.03.11 U/R	June-15	214.635

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

3	622	Up gradation of Surgery Department, surgery equipments for OT, modernization of Laboratory, Blood Bank & establishment of oncology treatment ward (30 Bedded) at CMCH Larkana. (C. 33.540 + R. 109.695)	Approved 21.04.11 U/R	June-15	143.235
4	623	Establishment of Shaheed Benazir Bhutto Skin Diseases Complex and Hepatology and Dental Deptt: at CMCH Larkana. (C. 89.227 + R. 45.689)	Approved 21.04.11	June-15	134.916
5	625	Revamping / Revitalization of Shaikh Zaid Hospital for Women Larkana. (C. 109.480 + R. 51.872)	Approved 31.05.11	June-15	161.352
6	626	Establishment of 50 bedded Medical & Surgical ICU and expansion of Casualty & OPD Department at CMCH, Larkana. (C. 56.454+R. 122.076)	Approved 02.03.12 U/R	June-15	178.530
7	656	Renovation / Rehabilitation / Improvement of Internal Roads, Water Supply, Drainage Electrification teaching block, Peads medicine / Surgery block, water tank all residential accommodation and Bungalows & quarters of CMCH, Larkana.	Un- Approved	June-17	500.000
8	685	Renovation and Rehabilitation of Paramedical Institute at Larkana. (C. 47.948 + R. 19.785)	Approved 23.01.12	June-15	67.733

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

9	794	Renovation & Rehabilitation of Auditorium Hall in the premises of Chandka Medical College Larkana. (C.5.390+R.22.841).	Approved 29.12.06	June-15	28.231
10	803	Repair & Rehabilitation of Girls Hostels & Construction of Noori Girls Hostel Chandka Medical Collage of Shaheed Mohtarma Benazir Bhutto Medical University Larkana.	Un- Approved	June-17	700.000
11	804	Allotment of land Measuring 220 Acres for Establishment of Shaheed Mohtarma Benazir Bhutto Medical University, Larkana.	Un- Approved	June-17	14.300
2015-16					
1	371	Establishment of Madam Faryal Talpur Cardiac Surgery Complex having facilities of: i. Coronary Angiography Cardiac Catheterized Lab ii. Cardiac Bypass Surgery iii. Chest Surgery at Chandka Medical College Hospital Larkana. (C: 51.123+R: 239.394)	Approved 21.04.11	June-15	290.517
2	372	Construction of Neuro Science Complex at CMCH Larkana, containing: 1. Neuro Surgery Department 2. Neuro Medicine (Neurology Department) 3. Psychiatry Department. (C: 44.425+R: 170.210)	Approved 24.03.11	June-15	214.635

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

3	373	Up gradation of Surgery Department, Surgery Equipment's for OT, Modernization of Laboratory, Blood Bank & Establishment of Oncology Treatment Ward (30 Bedded) at CMC Hospital, Larkana. (C: 33.540+R: 109.695)	Approved 24.03.11	June-15	143.235
4	374	Establishment of 50 bedded Medical & Surgical ICU and expansion of Casualty & OPD Department at CMC Hospital, Larkana. (C: 56.454+R: 122.076)	Approved 02.03.12 (U/R)	June-14	178.530
5	380	Renovation & Rehabilitation/ Improvement of Internal Roads, Water Supply , Drainage , Electrification of teaching block Peeds Medicine/ Surgery Block & water tank all residential accommodation & Benglows & quarters of CMCH Larkana.	Un- Approved	June-18	240.000
6	381	Construction of Nursing Hostel & New Operational Theatre (EYES) and Strengthening / Improvement of Trauma Centre at CMCH, Larkana.	Un- Approved	June-17	200.000
7	419	Renovation and Rehabilitation of Paramedical Institute Larkana. (C: 47.948+R: 19.785)	Approved 23.01.12	June-15	67.733

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

8	462	Renovation & Rehabilitation of Chandka Medical College and Construction of New Noori Girls Hostel of Shaheed Mohtarma Benazir Bhutto Medical University, Larkana. (C: 1066.581+R:44.630)	Approved 03.03.15	June-16	1111.211
2016-17					
1	593	Establishment of Madam Faryal Talpur Cardiac Surgery Complex having facilities of: i. Coronary Angiography Cardiac Catheterized Lab. ii. Cardiac Bypass Surgery iii. Chest Surgery at Chandka Medical College Hospital Larkana (C: 51.123+R: 239.394)	Approved 21.04.11	June-17	
2	594	Establishment of 50 bedded Medical & Surgical ICU and expansion of Casualty & OPD Department at CMC Hospital, Larkana (C: 56.454+R: 122.076)	Approved 02.03.12 (U/R)	June-17	
3	607	Renovation & rehabilitation of residences, internal roads, water supply, drainage and Peads Medicine/Surgery Block at CMCH Larkana.	Approved	June-19	
4	608	Construction of Staff Nursing Hostel, new Operational Theatre (eye) and strengthening of Trauma Centre at CMCH, Larkana.	Approved	June-19	
5	648	Renovation and Rehabilitation of Paramedical Institute, Larkana. (C: 47.948+R: 19.785)	Approved 23.01.12 (U/R)	June-17	

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

6	711	Renovation & rehabilitation of Chandka Medical College and Construction of New Noori Girls Hostel of Shaheed Mohtarma Benazir Bhutto Medical University, Larkana. (C: 1066.581+R: 44.630)	Approved 03.03.15	June-17	
7	1629	Rehabilitation/Renovation of existing various Health Facilities i/c (04 Nos) Ambulances in District Larkana. (Cap:Rs.125.300 m+Rev.Rs.20.000 m)	Approved 16.04.14	June-18	
2017-18					
1	659	Establishment of Cardiac Surgery Complex having facilities of: I. Coronary Angiography Cardiac Catheterized Lab. ii. Cardiac Bypass Surgery iii. Chest Surgery at Chandka Medical College Hospital Larkana (C: 51.123+R: 239.394) (SDG #3)	Approved 21.04.11 (U/R)	June-18	290.517
2	660	Establishment of 50 bedded Medical & Surgical ICU and expansion of Casualty & OPD Department at CMC Hospital, Larkana (C: 56.454+R: 122.076) (SDG #3)	Approved 02.03.12 (U/R)	June-19	178.530
3	666	Construction of Staff Nursing Hostel, new Operational Theatre (eye) and strengthening of Trauma Centre at CMCH, Larkana (SDG #3)	Approved 03.10.16	June-19	200.000

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

4	667	Renovation & rehabilitation of residences, internal roads, water supply, drainage and Peads Medicine/Surgery Block at CMCH Larkana.	Approved 18.08.16	June-19	250.000
5	716	Renovation and Rehabilitation of Paramedical Institute, Larkana. (C: 47.948+R: 19.785) (SDG #3)	Approved 23.01.12 (U/R)	June-19	67.733
6	756	Construction of Divisional Warehouse at Larkana	Approved 27.09.17	June-19	100.000
7	757	Establishment of Thalassemia Day Care Center at Dargah Jaral Shah, Larkana (SDG #3, 9)	Approved 27.09.17	June-19	20.000
8	836	Renovation & rehabilitation of Chandka Medical College and Construction of New Noori Girls Hostel of Shaheed Mohtarma Benazir Bhutto Medical University, Larkana. (C: 1066.581+R: 44.630)	Approved 03.03.15	June-20	1111.211
9	1831	Rehabilitation/Renovation of existing various Health Facilities i/c (04 Nos) Ambulances in District Larkana (C:125.300+R:20.000) (SDG # 3)	Approved 16.04.14	June-18	145.300

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

Details of Last Five Year ADP of RECREATION Sector Larkana

S. No.	Gen. Sr. No.		Location of scheme / District	Status	Target Date for completion	Estimated Cost
		Sector / Sub-Sector/		Date of Approval		
		Name of Scheme				
1	1	2	3	4	5	6
2013-14						
01	1605	Construction of Sports Pavilion at Dokri, Ratodero and Municipal Stadium Larkana.	Larkana	Approved 21.05.2009	30.06.2014	126.900
02	1618	Construction/ Rehabilitation of Bakhtawar Sports Pavillion/ Mini Stadium at Naudero Distrcit Larkana.	Larkana	Approved 21-04-2011	30-06-2014	43.931
2014-15						
01	2135	Construction of Sports Pavilion at Dokri, Ratodero and Municipal Stadium Larkana.	Larkana	Approved 21.05.09	June-15	126.900
2015-16						
01	1287	Construction of Bilawal Bhutto Zardari People's Park at Larkana. (Cap:Rs.100.445 m - Rev.Rs.14.553 m)	Larkana	Approved 21.02.13	June-16	114.998
02	1288	Construction of Bakhtawar People's Park at Moen jo Daro. (Cap:Rs.632.945 m - Rev.Rs.8.210 m)	Larkana	Approved 01.06.12	June-16	641.155
2016-17						
01	1639	Construction of Bilawal Bhutto Zardari People's Park at Larkana. (Cap:Rs.100.445 m+Rev.Rs.14.553 m)	Larkana	Approved 21.02.13	June-18	114.998

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

02	1640	Construction of Bakhtawar People's Park at Moen jo Daro. (Cap:Rs.632.945 m + Rev.Rs.8.210 m)	Larkana	Approved 01.06.12	June-18	641.155
03	1654	Construction of new family park opposite Central Jail vacant plot at Larkana City	Larkana	Un- Approved	June-18	40.000
04	2179	Supply & Installation of Chairs for Pavilion & Fiber Glass Canopy at Sports Complex at Cadet College, Larkana.	Larkana	Approved	June-18	30.000
2017-18						
01	1841	Construction of Bilawal Bhutto Zardari People's Park at Larkana. (C:100.445+R:14.553) (SDG # 1)	Larkana	Approved 21.02.13	June-19	114.998
02	1842	Construction of Bakhtawar People's Park at Moen jo Daro. (C:632.945+R:8.210) (SDG # 8)	Larkana	Approved 01.06.12	June-19	641.155
03	2357	Supply & Installation of Chairs for Pavilion & Fiber Glass Canopy at Sports Complex Cadet College, Larkana (SDG # 3)	Larkana	Approved 26.09.16	June-18	29.290

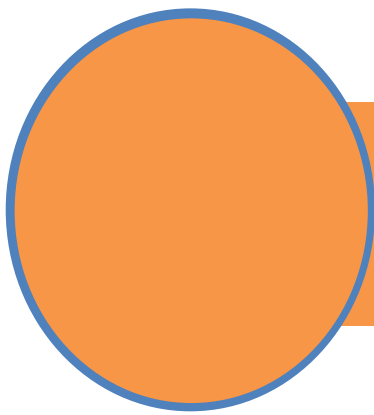
VOLUME-II

16. PRIORITY PROJECTS

16.1 List of Proposed Priority Projects – Short Term Development Proposals

Short term and long term development projects proposed in UDS Larkana for all relevant socio economic and physical infrastructure development projects are given in volume II on (pages 92-107) and reproduced at page nos. 80-85 in addendum - 2018

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)



Priority Projects

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

PRIORITY PROJECTS

S. No .	Project Name	Estimated Cost In Millions	Implementation Partners	Implementation Schedule		Targets Groups/ Beneficiaries
				Start	End	
Housing						
1.	Housing Development and Regeneration into Medium Density Low Income Housing at UC-2 (1000 Units).	300.00	P & D Department Government of Sindh/Private Developers	Jan 2015	July 2017	Local population
2.	Development of Low Density Middle Income Housing at UC-11 & UC-4 (500 Units).	400.00	P & D Department Government of Sindh/Private Developers	Jan 2015	July 2017	Local population
3.	Development of Low Density Low Income Incremental Housing to Support Extension of Larkana Industrial State as per UDSL-2020 recommendati on in outskirts of UC-2(300 Units)	150.00	P & D Department Government of Sindh/Private Developers	March 2015	July 2017	Local population

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

Economy						
1.	Larkana - Short Term Investment Opportunities - program.	100.000	Provincial Finance Department Gos.	Jan 2015	Jan 2016	Local Business Personals
2.	Promote Tomato cultivation and processing through cottage industry.	300.000	Provincial Agriculture Department/Local Agriculture Department / Larkana Chamber of Agriculture/ Private Developers	Jun 2015	Jan 2016	Rural Population/Local Farmers/Peasants
3.	Processing, Cold storage, open air outlets land, and export Guava Production	50.000	Provincial Agriculture Department/Local Agriculture extension Department / Larkana Chamber of Agriculture/Private Developers	Jun 2015	Jan 2016	Rural Population/Local Farmers/Peasants
4.	Establishment of rice husking and polishing plant having capacity of 30 ton per day.	40.00	Local Agriculture extension Department / Larkana Chamber of Agriculture	Jan 2015	Dec 2016	Rural Population/Local Farmers/Peasants
5.	Establishment of Agro-market intelligence unit for distribution of qualified seed, fertilizers and pesticides distribution.	15.00	Larkana Chamber of commerce and Agriculture	March 2015	Jan 2016	Rural Population/Local Farmers/Peasants/Tra ders

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

6.	Proposed Industrial estate i. Completion of infrastructure for (200 acres) first phase of 500 acres industrial estate at Airport road Arija ii. oil extraction mill	2500.00 1000.00 1500.00	Government of Sindh/District Government Larkana / Larkana Chamber of Agriculture	Jan 2015	Dec 2016	Local business community
7.	Increase agricultural productivity through use of certified seed, fertilizer, plant protection on and off farm storage & mechanized crop harvesting.	52.00	Provincial Agriculture Department/Local Agriculture Department / Larkana Chamber of Agriculture	Jun 2015	Jan 2016	Rural Population/Local Farmers/Peasants
Education						
1.	Larkana Education Sector Short Term Plan - provision of 825 classrooms at different levels.	200.00	Provincial Education Department Government of Sindh/District Education Department / Private Developers	Jan 2015	Jan 2016	Local population/Youth
Tourism Infrastructure Improvement						
1.	Feasibility study for tourism cum recreational complex near	200.00	Provincial culture and tourism Department Gos/Archeology department/	Sep 2014	March 2015	Local Population/international tourists

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

	the Airport on PPP/BOT basis		Private Developers/District Government			
2.	Feasibility :Reconstruction of Sambara-INN and cultural complex	200.00	Provincial culture and tourism Department Gos/Archeology department/ Private Developers/District Government	Feb 2015	March 2015	Local Population/international tourists
DRM						
1.	Development of disaster risk data base through statistical information, risk maps, emerging hazards information and their affects.	15.000	P & D department Gos./PDM Authority Sindh/DDM Authority Sindh/State Government of Sindh/ Irrigation Department Gos/ Private Developers	Jan 2015	Jan 2016	Local Population
Health						
1.	Larkana Health Sector Short Term Plan - Establishment of New BHU's (25-30).	500.00	Provincial Health Department/P&D Department Gos/District Health Department/ Private Developers	Jan 2015	July 2017	Local Population
Solid Waste Disposal						
1.	Soil investigation and ground water level surveys for the selection landfill site.	50.00	State Government/District Public Health Department/ Local Government/ District Government/NSU SC	Jan 2015	Jan 2016	Local and regional population
2.	Larkana Solid Waste Disposal	10.00	State Government/District Public Health	Jan 2015	Jan 2016	Local Population

**“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)**

	System Improvement Study		Department/ Local Government/ District Government/NSU SC			
Transportation						
1.	Larkana Local Traffic System Improvement and Management Program Study.	20.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jan 2015	July 2017	Local and regional population
2.	Feasibility Study of Mass Transit on the Existing Railway Track.	50.00	Provincial Works & Services Department Gos./District Highways Department/ Local Municipal Government/District Government/ Private Developers	Jan 2015	Jan 2016	Local and regional population
Water Supply						
1.	Comparative analysis study for surface and ground water quality and quantity would be conducted for detail assessment of appropriate water source.	50.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSU SC	Jan 2015	Jan 2016	Local Population
Sewerage and Drainage						

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)

1.	Consultancy Service for preparation of Sewerage and Drainage Master Plan for next 20 years	40.00	P & D Department Gos/ Public Health Department/Local Municipal/ Government/ District/ Government/NSU SC	Jun 2015	Jan 2016	Local Population
Energy						
1.	Larkana alternative energy study	150.00	Energy and Power Department, Govt. of the Sindh /Education Department Gos/ Private Developers	Jun 2015	Jun 2017	Local Population
Urban Development						
1.	Larkana CBD rehabilitation	300.00	State Government /Local Government/District Government	Jun 2015	Jun 2017	Local Population
2.	Consultancy services for per-urban growth control	50.00	State Government /Local Government/District Government	Jun 2015	Jun 2017	Local Population
3.	Cultural rehabilitation of Uc-5	1000.00	State Government /Local Government/District Government	Jun 2015	Jun 2017	Local Population

“URBAN DEVELOPMENT STRATEGY FOR LARKANA”
(2013 - 2033)



Data Annexures



No. PDMA (S)/7(223)/2018/
GOVERNMENT OF SINDH
REHABILITATION DEPARTMENT
PROVINCIAL DISASTER MANAGEMENT AUTHORITY
BANGLOW NO: 82, LANE 10, KHAYABAN-E-HILAL
DHA, PHASE-VI, KARACHI.
Phone: 021-99332701-2, Fax: 021-99332700
Karachi, dated: 13th November, 2018.

To, ✓

The Director General
Directorate of Urban Policy & Strategic Planning
Planning and Development Department,
Government of Sindh,
Karachi.

Subject: PREPARATION OF URBAN DEVELOPMENT STRATEGIES (UDS) FOR SUKKUR AND LARKANA

I am directed to refer to your office letter No. P&D/Directorate (UPSP)/MF&G/UDS/0611T dated, 6th November, 2018 on the subject cited above.

2. The requisition information is stated as below:

S. No	Question	Reply
1	Information on History of Disaster after 2013 which includes "Riverine Floods, Flash Floods, heavy rains, epidemics, earthquake and transport accidents.	After 2013, no such disasters occurred in Sukkur and Larkana Divisions. However, the people within the river embankments were safely evacuated in monsoon season of 2013, 2014 and 2015 but the same didn't affect the cities. Moreover, it is suggested that the details of transportation accidents and epidemics may be sought from relevant departments.
2	Updated severity of various hazards in the city which includes Drought, Floods, Earthquake, Landslides, Fire, Cyclone, tsunami, Refugees IDP's etc.	Annex -A



Handwritten signature and date 13/11

(KHALID MALIK)
ASSISTANT DIRECTOR (Ops)

CC:

1. The P.S to Chairman, P&D Board, GoS, Karachi.
2. The P.S to Secretary (Planning), P&DD, GoS, Karachi.
3. The P.S to Secretary Rehabilitation Department, GoS, Karachi.
4. The P.S to Director General, PDMA Sindh, Karachi.

Diary No. 141102
Date: 14/11/18
Inward
Directorate of Urban Policy & Strategic Planning
P&D Department Government of Sindh



HEALTH PROFILE OF SINDH

(DISTRICT WISE)

For the year 2016

**BUREAU OF STATISTICS
PLANNING & DEVELOPMENT DEPARTMENT
GOVERNMENT OF SINDH**

ST-13, Block-8, Kehkashan Clifton, Karachi-75600
Fax no. (021) 35296415

Web: www.sindhbos.gov.pk
Email: sindh.statistics@gmail.com

DIRECTORATE OF URBAN POLICY & STRATEGIC PLANNING
PLANNING & DEVELOPMENT DEPARTMENT
GOVERNMENT OF SINDH

No. P&D/UPSP/DD (GIS)/2018-

Karachi, Dated November 2, 2018

Court Matter

To,

The Chief Statistician
Pakistan Bureau of Statistics
Islamabad, Pakistan

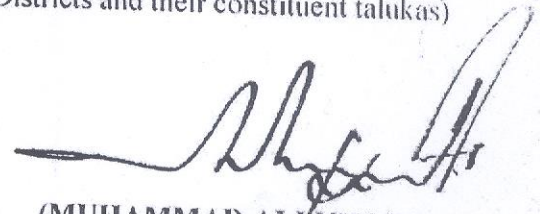
Subject: CENSUS DATA FOR SUKKUR AND LARKANA DISTRICTS OF SINDH PROVINCE

Urban Development Strategies for Larkana and Sukkur have been prepared by this Directorate with the technical & financial assistance of ADB to guide the short term and long term development of these cities.

In this regard during the hearing of Constitutional Petition No. D-1497/2017, dated Oct, 31, 2018 Honorable High Court of Sindh Bench at Sukkur passed orders to update the Urban Development Strategies for Sukkur and Larkana on the basis of census 2017 data within 15 days positively i.e by 15 Nov 2018.

It is therefore requested that following data may kindly be shared with this Directorate on urgent basis for compliance of orders of Honorable court please.

1. Population Census Data 2017 (Sukkur and Larkana Districts and their constituent talukas)
2. Housing Census Data 2017 (Sukkur and Larkana Districts and their constituent talukas)



(MUHAMMAD ALI KHOSO)
Director General

A copy is forwarded for information:

- The Assistant Advocate General Sindh, High court Sukkur.
- P.S to Chairman, P&D Board, GoS, Karachi
- P.S to Secretary (Planning), P&D Dept., GoS, Karachi
- The Provincial Census Office 1-B, S.M.C.H Society, Karachi.
- ES to Director General UP&SP, P& D Department GoS Karachi.

o/c

Outward

Daily No. 0211A

Date 02-11-18

Director Urban Policy & Strategic Planning
P&D Department Government of Sindh



Government of Pakistan
Statistics Division
Pakistan Bureau of Statistics



Deputy Census Commissioner Statistics House, 21-Mauve Area, G-9/1,
PH No. 051-9106536

No. 8(1)/2018-PBS (CP&C)

Islamabad the 8th November, 2018

Subject: - CENSUS DATA FOR SUKKUR AND LARKANA DISTRICTS OF SINDH PROVINCE

Dear Sir,

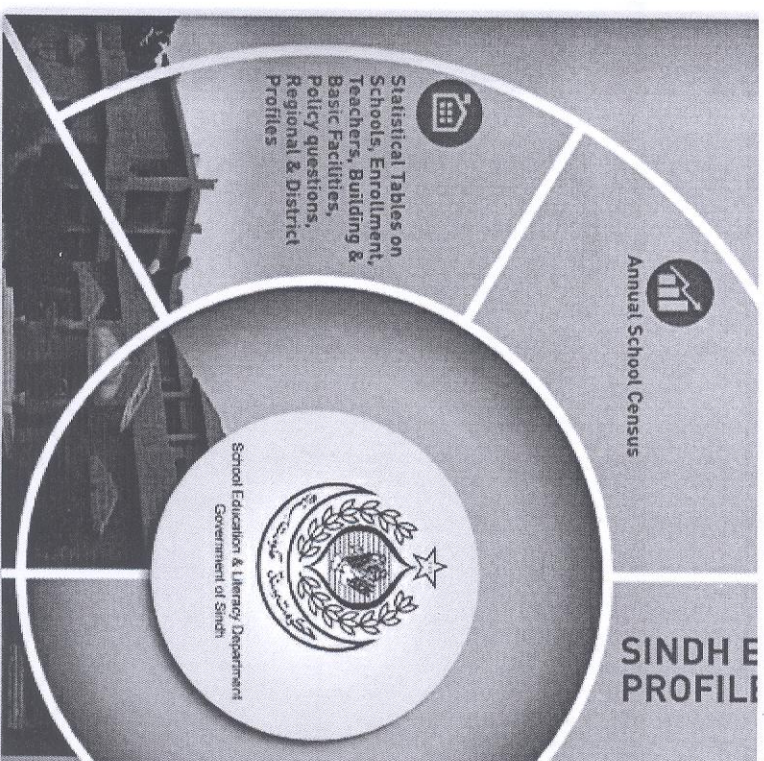
Reference Directorate of Urban Policy & Strategic Planning, P & D Department, Government of Sindh, Karachi's letter No. P&D/UPSP, DD(GIS)/2018- dated 2nd November, 2018 addressed to Chief Statistician, PBS, Islamabad on the subject noted above.

2. Enclosed please find the available Population & Household Data pertaining to Larkana & Sukkur districts according to Provisional Results of Census-2017 for further course of action as desired.
3. The Final Results of Census-2017 are in approval stage. As soon as the same are approved, will be released accordingly. The rest of the data requested will be supplied alongwith final results.
4. This issues with the approval of Member (C&S).


(Muhammad Riaz) 8/11/18

Mr. Muhammad Ali Khoso,
Director General,
Directorate of Urban Policy & Strategic Planning,
P & D Department,
Government of Sindh,
Banglow No. 37E/2, P.E.C.H.S Block-6,
Karachi

Sindh Education Profile 2016-17





0800-81122



Annual Operating Plan 2016-17



Vision:

To be a leader in sustainable water supply, sewerage and solid waste management, delivery of quality customer services.

Mission:

To deliver sustainable water supply, sewerage and solid waste services in a safe, efficient and effective manner.

1. District level information on agriculture indicators including size pattern of land/farm

Larkana has the privilege of being the seat of one the oldest civilization of the world, “ the Indus Valley Civilization moen-jo-Daro”. Larkana District is bounded by district Shikarpur and District Khairpur in east Dadu District to the south. And Kamber –Shahdadkot district extends along the west. Guava fruit is identity of Larkana; Ratodero and Larkana are famous for abundance of guava orchards. A fertile land surrounds Larkana covered with Rice crop, fruits and some vegetables for example guava, tomato and other vegetables are also produced. However, the unique crop of Rice is sown and harvested in dominantly in the area of Larkana in the entire Sindh province. A major chunk of this crop is then exported to other countries as well. Apart from rice, lotus root (also known as “bhay in sindhi”) is very famous and eaten by locals a lot. Many visitors enjoy this vegetable dish when they visit Larkana. Sugarcane is cultivated and processed in sugar mills at Nau Dero.

The Agro-geographical information of district Larkana is as under:

01	Geographical area surveyed :	488,301 Hec.
02	Reported area:	488,301 Hec.
03	Cultivated area:	291,425 Hec.
04	Net Area sown	460,259 Hec.
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06	Total Cropped Area	241,187 Hec.
07	Total uncultivated area	196,876 Hec.
08	Cultivable waste	874,26 Hec.
09	Not available for cultivation	818,16 Hec.

2. Number and area of farms by size, land/farm areas cultivated and uncultivated (Land utilization)

The geographical area of larkana district is mostly plan area with clay to clay loam soil texture, Mighty river Indus cover the eastern boundary with large strip of Katcho area in the east, due to arid climatic conditions the soil is moderately to highly saline in condition with pH ranges from 8.4 to 9.5, due to in efficient drainage system and Rice crop is predominantly cultivated in Kharif season, along both sides of Dadu canal adjacent to Katcho area Guava orchards in taluka Ratodero and Larkana are spread over on large area, after rice harvest in Rabi season Tomato crop and other vegetables are also cultivated in addition to wheat cultivation that dominated in Rabi season after introduction of Zero tillage technology cultivation of wheat crop on residual moisture of rice crop, since the Rice canal a non-perennial irrigation system covers most area of Larkana District,. The Major vegetation/crops is as under:

01	Rice	106,000 Hec.
02	Wheat	51,923 Hec.
03	Guava	4,500 Hec.
04	Tomato	6,250 Hec.
05	Vegetables	2,350 Hec.
06	Other crops	1,500 Hec.

3. Area irrigated by Source of Irrigation

The source of irrigation in Larkana district mainly reliant on canal irrigation system with 1474 water courses nearly 400 water courses with lining of 30% area under various project, in non-perennial area the crops during rabi season are irrigated through tube wells the detail of major canals of Larkana

District as under:

Sr #	Canal
01	Rice Canal (Non-perennial)
02	Warah Branch Canal
03	Dadu Canal
04	N.W Canal

04. Cultivated areas classified by mode of irrigation and farm size

Almost all cultivated area during the kharif season irrigated by canal irrigation system whereas some growers use tube well Irrigation the nurseries of rice crop seedlings of early crop varieties. In Rabi season 70% wheat cultivated on residual moisture of rice crop by zero tillage and subsequently 01 to 02 irrigations are made through tube well irrigation during the rabi season in non-perennial irrigation system.

05. Share of different crops, area in total cropped area by farm size cropping pattern and production

The Larkana is major course rice cultivating district Sindh on more than 100,000 hectares with record production up to 402,800 M. Tones in a year addition to this with the introduction of zero tillage wheat sowing technology on residual moisture of rice and with fixing of high price of wheat crop the growers have been diverted from other crops like pulses, oil seeds, oil seeds and vegetables towards Wheat cultivation and since last 05 years Larkano district abundantly produces wheat crop after rice. The other fruit and vegetable crops statistics has been discussed in detail under para#2.

06. Tenure classification of farms and farms area tenure status of famer

Two seasons of crops cultivations are common in district, Kharif and Rabi, in Kharif Rice is predominant crop and in Rabi wheat and other vegetable crops are cultivated in addition to perennial Guava orchards alongside River Indus and Dadu Canal in Ratedero and Larkana Taluka.

07. Fruit production

Guava is identity its orchards spread over a 4,500 hectares alongside river Indus and Dadu Canal, The Guava of Larkano is unique in test and texture, unfortunately the summer crop production is destroyed due to out-break of fruit fly, this is perishable fruit with short shelf life.

In addition to Guava orchards, some growers have Jujube and Date Palm orchar on small scale.

08. Use of Fertilizer, Manures, Pesticides, and Herbicides

Nearly 20,000 M.T of DAP and 35,000 M.T of Urea Fertilizer is yearly consumed for various crop production in Larkana district with additional use of millions of pesticides specially granular cartap, monomehypo, carbofuran etc for rice crop and weedicide and fungicides and other pesticides for tomato production are commonly used in Larkano district.

TOURISM SECTOR

	BRIEF
No of international tourists expected	According to the report, 1.75 million international tourists visited Pakistan in 2017 alone. The number of international tourists is gradually growing. (Source: PTDC& World Travel & Tourism Council)
Tourism potential in Pakistan	<p>Over the past few years, Pakistan has seen a rapid increase in its tourism industry. A lot of credit, for which, goes to the internet. It has immensely contributed towards the development and growth of the tourism industry in Pakistan.</p> <p>Pakistan has been ranked the world's top travel destination for 2018 by the British Backpacker Society, which described Pakistan as "one of the friendliest countries on earth, with mountain scenery that is beyond anyone's wildest imagination. Pakistan is the clear winner of the British Backpacker Society's top 20 adventure travel destinations 2018 and we encourage keen travellers to book a trip now" the backpackers, who have travelled to over 101 countries, shared on social media. (Source Gulf News)</p> <p>According to international Booking.com and Jovago, the top hotel booking and e-commerce site in Pakistan, there has been a significant increase in the annual tourism rate and business traveling in Pakistan.</p> <p>Significantly improved security situation has helped boost annual tourist arrivals in Pakistan by 300% since past few years with 1.75 million in 2017. Domestic travelers have increased 30%, according to the state-owned Pakistan Tourism Development Corporation. According to Jovago, hotel bookings increased 80-90% percent in 2017.</p> <p>By contrast, foreign tourist arrivals in the country's larger neighbor India jumped from 6.97 million in 2013 to 8.8 million in 2017, according to Indian government figures. 88% of India's and 92% of Pakistan's tourism revenue is domestic. India's tourism industry is worth \$209 billion (9.6% of GDP in 2017), according to World Travel and Tourism Council (WTTC).</p>
Tourism Potential in Sindh	<p>Sindh's remarkable tourism potential has largely remained unexplored. The Indus Valley Civilization (IVC) was a Bronze Age civilization (mature period 2600–1900 BCE) which was centered mostly in the Sindh.</p> <p>Gorakh hill station, Keenjhar lake, pre-historic site of Moen jo Daro, Makli necropolis, various forts & palaces spread throughout sindh, beautiful beaches on the shore of Arabian Sea make Sindh truly an ideal destination for tourism: Some of areas related tourism are identified as profitable</p>

	<p>investment are as under:</p> <ul style="list-style-type: none"> • Beach Resorts • Water Sports • Entertainment & Theme Parks • Multiplexes • Desert Safari • Eco Tourism • Budget hotels and Motels <p><u>Market Analysis:</u></p> <p>The 352 km long coastline, the turtle beaches of Karachi and abundant land in city's outskirts provide several opportunities for developing facilities for the city of 16 million souls. The sufi shrines of Sindh, despite lack of facilitation, regularly attract thousands of devotees from all over the world. Sindh's deserts and hunting sites are also favorite sites for adventurers from several countries. The great Indus civilization has many important sites in Sindh including Mohenjo-Daro. The geographical diversities of hills and deserts open a wide range of tourist attractions. An organized tourism sector, which provides facilities at tourist sites can promote the great tourism potential of Sindh, has a bright future.</p> <p>Some Potential Investment Projects:</p> <ul style="list-style-type: none"> • Deep Sea Diving • Cruise/Ferry Service • Water Sports • Development of Beach Resorts • Hotels and Rest Houses • Eco-Tourist Resorts at Keenjhar&Haleji Lakes, Gorakh Hills • Dolphin Park • Roller Coaster Park • Resort City on Beaches • Safari Park • Fast Food Restaurant Chain • Desert Safari • Devotional Tours of Sufi Shrines • History tours of ancient sites <p>The jest of the matter is that Sindh is a year round destination with attracts for national and international tourists due to its peaceful environment and traditional hospitality.</p>
Tourism potential in Sukkur	There is enormous potential of tourism in Sukkur. It is the third largest city

	<p>of Sindh province; Located at the bank of River Indus. The cultural spots and bazaars in Sukkur show how rich it is in Sindhi culture, and they are the most prominent attractions of the city. People living here are proud of their city and show their pride by being very hospitable to tourists. Their hospitable culture is extended even to the management of top hotels in Sukkur, giving more reasons to tourists to fall in love with the city.</p> <p>Sukkur is simple yet beautiful, and the cultivable area around the city enhances its beauty. The climate at Sukkur is usually hot, dry and hazy. The city is beautifully crafted that people can't stop roaming around and exploring the magnificence of civilization.</p> <p>Some of historical and eye catchy places of Sukkur are as under:</p> <p>Sadh Belo: An island on Indus River very close to the city of Sukkur. There is a Hindu temple on the island which was founded in 1823 by Swami Bakhandi Maharaj Udasi; it is one of the main tourist attractions. The route to the temple is through the river on a boat, which provides the tourist with a pleasurable experience and scenic view of River.</p> <p>Satyun Jo Asthan: Satyun jo asthan or Satbahain jo maskan is the resting or 'living' place of Seven Sisters. It is situated in Sukkur on a mound near Landsowne Bridge. Popularly known as Satian jo asthaan (the home of seven virgins) is a cave like hall, dug out of the mound.</p> <p>It is a strange place. No impressive mausoleum like those of other saints of Sindh, but just an empty cave.</p> <p>Sukkur & other barrages: Sukkur barrage (bridge) is located near Sukkur city. There are about 66 parts of the barrage and each has a door weighing 50 tons, to help to control the water flow for cultivation and floods. There are Lansdowne bridge, Ayoub Bridge are also famous due to their fascinating look. Mir Masoom Shah Minaret and historical Market are favorite places for local and international tourists.</p> <p>Archaeological sites of Sukkur like "Lakhiyun Jo Daro" which is pre-matured site of Indus Valley Civilization is yet an enigma. About 40 Kms long Pre-Historic Stone tool factory is a series of hills from Rohri to Kotdiji, where fossils and remains of stone age tools are on the peaks of hills. Rohri is side by side town of Sukkur which has also vast historical background.</p>
Tourism Potential in Larkana	<p>Larkana, the favorite city of international tourists is the 17th largest city of Pakistan, is situated in the north-west of Sindh. Referred to as the Eden of Sindh, Larkana is the 4th largest city in the province and is home to the historic Indus river.</p> <p>Mohenjo-Daro: The top remains of Oldest Indus Valley Civilization as MohenjoDaro which was abandoned along with the decline of the Indus valley civilization is located in the Larkana. It was rediscovered after 3700</p>

years and some notable relics found were dancing girl, priest-king, seven-stranded necklace, Buddhist stupa, and much more, that represent its history. Every year hundreds of international tourists visit here.

GarhiKhudaBux: GarhiKhudaBuksh is a small village located in Larkana and is also home to the Mausoleum of Bhutto family. It is a popular destination amongst supporters of the Bhutto family who visit their graves whenever they visit the city. Shah Nawaz Bhutto, Zulfiqar Ali Bhutto, Murtaza Bhutto and Benazir Bhutto are buried there.

Sir Shahnawaz Bhutto Public Library: This library was commenced in 1984 and is greatly valued as it provides educational facilities to the public. It is home to books by more than 8000 authors and categories and also contains an internet café. The library plans to establish a museum in the future.

Other Historical Places: There is Tajjar Building which is remain of Kalhora Dynasty situated in Jinnah Bagh. It is a significance place of the history. Square Tower near Dhamraho is also a landmark for national and international tourists.

Shopping: With its historic background, Larkana is known to have a modern structure. Everything is available here. Larkana has various shops and markets as well as shopping malls and you will find clothing based on Ajrak patterns.

Larkana is most important city that has top influence on Pakistan's political environment. Father of Democracy Shaheed Zulfiqar Ali Bhutto was born here, and his daughter which is famous as "Daughter of the East" Shaheed Benazir Bhutto's native town in Larkana.

Larkana experiences the highest of temperatures in summer as well as extremely low temperatures in winter, 53.5 °C to -2 °C respectively.

URBAN DEVELOPMENT STRATEGIES (UDS) FOR DISTRICT LARKANA

01	District Level Information on Agriculture sector indicators, including size, pattern of land/ farm ownership																												
	<p>Larkana has the privilege of being the seat of one of the oldest civilization of the world, "The Indus Valley Civilization Moen-jo-Daro". Larkana District is bounded by district Shikarpur and district of Khairpur in east and Dadu district to the south. And Kamber-Shahdadkot district extends along the west. Guava fruit is identity of Larkana; Ratodero and Larkana are famous for abundance of guava orchards. A fertile land surrounds Larkana covered with Rice crop, fruits and some vegetables for example guava, tomato and other vegetables are also produced. However, the unique crop of Rice is sown and harvested in dominantly in the area of Larkana in the entire Sindh province. A major chunk of this crop is then exported to other countries as well. Apart from rice, lotus root (also known as "bhay" in sindhi) is very famous and eaten by locals a lot. Many visitors enjoy this vegetable dish when they visit Larkana. Sugarcane is cultivated and processed in sugar mills at Nau Dero.</p> <p>The Agro-geographical information of district Larkana is as under :</p> <table> <tr> <td>01</td><td>Geographical area surveyed:</td><td>488,301 Hec.</td></tr> <tr> <td>02</td><td>Reported Area:</td><td>488,301 Hec.</td></tr> <tr> <td>03</td><td>Cultivated Area:</td><td>291,425 Hec.</td></tr> <tr> <td>04</td><td>Net Area sown</td><td>460,259 Hec.</td></tr> <tr> <td>05</td><td>Area sown more than once</td><td>776,34 Hec.</td></tr> <tr> <td>06</td><td>Total Cropped Area</td><td>241,187 Hec.</td></tr> <tr> <td>07</td><td>Total uncultivated area</td><td>196,876 Hec.</td></tr> <tr> <td>08</td><td>Cultivable waste</td><td>874,26 Hec.</td></tr> <tr> <td>09</td><td>Not available for cultivation</td><td>818,16 Hec.</td></tr> </table>		01	Geographical area surveyed:	488,301 Hec.	02	Reported Area:	488,301 Hec.	03	Cultivated Area:	291,425 Hec.	04	Net Area sown	460,259 Hec.	05	Area sown more than once	776,34 Hec.	06	Total Cropped Area	241,187 Hec.	07	Total uncultivated area	196,876 Hec.	08	Cultivable waste	874,26 Hec.	09	Not available for cultivation	818,16 Hec.
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district is as under:

Sr.	Canal
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02.	Warah Branch Canal
03.	Dadu Canal
04.	N.W Canal

04. Cultivated area classified by mode of irrigation and by farm size

Almost all cultivated area during the kharif season irrigated by canal irrigation system whereas some growers use tube well irrigation system for irrigating the nurseries of rice crop seedlings of early crop varieties. In rabi season 70% wheat is cultivated on residual moisture of rice crop by zero tillage and subsequently 01 to 02 irrigations are made through tube well irrigation during the rabi season in non-perennial irrigation system.

05. Share of different crops, area in total cropped area by farm size cropping pattern and production

The Larkana is major course rice cultivating district in Sindh cultivated on more than 100,000 hectares with record production up to 402,800 M. Tones in a year in addition to this with the introduction of Zero tillage wheat sowing technology on residual moisture of rice and with fixing of high price of wheat crop the growers have been diverted from other crops like pulses, oil seeds and vegetables towards Wheat cultivation and since last 05 years Larkana district abundantly produces wheat crop after rice. The other fruit and vegetable crops statistics has been discussed in detail under para # 02

06. Tenure classification of Farms and Farms area tenure status of farmer

Two seasons of crop cultivation are common in district, Kharif and Rabi, In Kharif Rice is predominant crop and In rabi season wheat and other vegetable crops are cultivated in addition to perennial Guava orchards along side river Indus and Dadu Canal in Ratodero and Larkana Talukas.

07. Fruit Production

Guava is identity of Larkana it's orchards spread over a 4,500 hectares alongside river Indus and Dadu canal, the Guava of Larkana is unique in test and texture, unfortunately the summer crop production is destroyed due to out-break of Fruit fly, this is perishable fruit with short shelf life. In addition to Guava orchards, some growers have Jujube and Date Palms orchard on small scale.

08. Use of Fertilizers, Manures, Pesticides, and Herbicides.

Nearly 20,000 M.T of DAP and 35,000 M.T of Urea Fertilizer is yearly consumed for various crop production in Larkana district with additional use of millions of pesticides specially granular cartap, monomehypo, carbofuran etc for rice crop and weedicide and fungicides and other pesticides for tomato production are commonly used in Larkana district.



LARKANA CHAMBER OF COMMERCE & INDUSTRY

لاڙڪاڻو ايوان تجارت و صنعت

21-23, John F.
Kennedy Market,
Larkana.

Ref: No. LCCI/344/2018

Dated: 17.12.2018

MR. MUHAMMAD ALI KHOSO

THE DIRECTOR GENERAL

DIRECTORATE OF URBAN POLICY & STRATEGIC PLANNING

PLANNING & DEVELOPMENT DEPARTMENT

KARACHI.

SUBJECT: PREPARATION OF URBAN DEVELOPMENT STRATEGIES
UDS FOR LARKANA

RESPECTED SIR,

It is submitted that a letter has been received from you good office dated on 05-12-2018 regarding the above mentioned subject.

Following is the data preparation for UDS, Larkana, Trade and Commerce:

S.NO	UDS	DETAIL DESCRIPTION
01	Export and Local consumptions (Rice, Guava, Handicraft)	<p>1. <u>Rice</u> Total Production 07 Million acres 3.5 Million acres Larkana 2.5 Million acres Qambar Shahdakot</p> <p>2. <u>Guava</u> Total Production 1000-----Hectors 26000----- acres 76000----- Metric tons</p> <p>2. <u>Handicrafts</u> Sindhi Capes, Quilts (Ralli), winnowing fans.</p>



02	Trading of Major Fruits and vegetables during the peak seasons in Larkana.	<p><u>Major Fruits:</u> Guava-----(4500 Hec) Lemon Jujube (Ber)</p> <p><u>Major Vegetables:</u> Tomatoes----- (6250 Hec) Onions Spinach Fenugreek/ Methi</p>
03	Production of Larkana, Production	<ol style="list-style-type: none"> 1. Wheat Flour Mills 2. Seed Production 3. Pipe Factory 4. Pickle/ Achar 5. Sweets
04	Banks (Types/ No of Banks, Names)	<p><u>Total Banks 26</u></p> <ol style="list-style-type: none"> 1. National Bank of Pakistan 2. Muslim Commercial Bank 3. United Bank Limited 4. Mezan Bank Limited 5. Al-Falah Bank Limited 6. First women Bank Limited 7. Al-Habib Bank Limited 8. Habib Metropolitan Limited 9. Allied Bank Limited 10. Summit Bank Limited 11. Advance Micro finance Bank 12. Khushali Bank 13. Bank Al-Islami 14. Asakri Bank Limited 15. Al-Baraka Limited 16. Silk Bank Limited 17. JS Bank Limited 18. Sindh Bank 19. Fasial Bank Limited



LCCI Page No. (03)

		20. Sonari Bank Limited 21. Apna Bank Limited 22. National Saving Bank 23. Ufone Bank 24. Dubai Islamic Bank Limited 25. Jazz Bank 26. Zari Tarqiati Bank
05	Potential Production	1. Rice-----1060000 Hec 2. Guava-----4500 Hec 3. Tomatoes-----6250 Hec 4. Wheat-----51923 Hec 5. Sugarcane-----2350 Hec
06	Potential Workforce, Employment Status	There is lack of potential work force at Larkana which decreases the employment status. There is Limited number of skilled Labor and need of professional trainings in Rice /Guava and pipe factories clusters.

This is for your kind information.



Best Regards

Abdul Ghaffar Shaikh

President



DIRECTORATE OF FISHERIES
GOVERNMENT OF SINDH
LARKANO DIVISION
Cattle Colony Larkano


No. DF/LRK/General/ 2018/1486-88
Dated: 07-11-2018

To,

✓
The Director General Fisheries
Sindh KARACHI

SUBJECT: PREPARATION OF URBAN DEVELOPMENT STRATEGIES FOR
SUKKUR AND LARKANA
Ref. NO.SO (Dev).L&F/4(17)Misc/2017 Dated:07.11.2018

Kindly find enclosed herewith information on the above subject matter at Annexure-A as desired vide above reference for favour of information and onward transmission to quarter concerned.


(DR. ALI MUHAMMAD MASTOI)
DIRECTOR FISHERIES
LARKANO DIVISION

Copy forwarded for information to:

1. The Section Officer (General) Livestock & Fisheries Department Government Sindh Karachi.
2. The Deputy Director Fisheries Larkano


✓
DIRECTOR FISHERIES
LARKANO DIVISION

Annex-A

OFFICE OF THE DEPUTY DIRECTOR FISHERIES
LARKANO

FISHERIES STATISTICS OF DISTRICT LARKANO, UP TO
DATE FOR THE YEAR 2018-19

FISH PRODUCTION	FISH SPECIES	NO OF FISHERMEN	NO OF BOATS	NO OF FISH FARMS
399 M.TONES	1. Rohu 2. Thaila 3. Morakhi 4. Gulam 5. Grass Carp 6. Silver Carp 7. Shukur 8. Seengari 9. Mali 10. Khago	68 (Registered)	34	201


GULISTAN KHAN
Deputy Director Fisheries

GOVERNMENT OF SINDH
SINDH SMALL INDUSTRIES CORPORATION, SMALL INDUSTRIES ESTATE LARKANA.

STATEMENT SHOWING "UNITS ESTABLISHED/OPERATION" IN SMALL INDUSTRIAL ESTATE, LARKANA.

UNITS IN PRODUCTION

S R NO	NAME OF ALLOTTEE	NAME OF INDUSTRY	NATURE OF INDUSTRY	PLOT NOS:	SIZE OF PLOTS IN SQ. YDS.	DATE OF ALLOTMENT /TRANSFER	DATE YEAR OF ESTABLISHMENT	Capital Investment in [M]	EMPLOYMENT	PRESENT STATUS
1-	2-	3-	4-	5-	6-	7-	8-	9-	11-	12-
01-	Mr. Munwar Ali Shaikh	M/s Mohammadi Rice Mill	Rice Processing	A-04	1,111	8-2-2011	1994	1,177	11	Operation
02-	Mr. Mohammad Ismail Maqsi	M/s Macca Rice Mill	Rice Processing	A-11 to A-21	12,222	6-11-2004	1982	2,435	14	Operation
03-	Mr. Rajib Ali Mahessor	M/s Qamar Rice Mill	Rice Processing	A-44 to A-46	3,333	29/03/1983	1989	1,632	14	Operation
04-	Mr. Sabir Hussain Abbasi [M.P]	M/s Sakhi Rice Mill	Rice Processing	A-39 to A-41	2,951	8-1-1992	1993	3,178	18	Operation
05-	Mr. Mohammad Aslam Shaikh	M/s Mehran Poultry Farm	Poultry Farm	A-48	1,111	10-5-1982	1983	0,376	6	Operation
06-	Late Abdul Ghafoor Brohi	M/s United Rice Mill	Rice Processing	A-60 to A-63	4,444	20/06/1979	1981	0,520	10	Operation
07-	Mr. Abdul Kareem Brohi	M/s Rahman Rice Mill	Rice Processing	A-65 & A-66	2,222	30/03/2010	1984	0,500	9	Operation
08-	Mr. Ghulam Hussain Lashari	M/s Huzeor Bux Ice Fac.	Ice Making	A-77	1,111	18/11/1975	1977	0,565	5	Operation
09-	Mr. Yar Mohammad Bugri	M/s Bugri Autos Tractor Rep:	Tractor Repair	A-79	1,111	30/03/1980	1982	0,163	6	Operation
10-	Mr. Bashir Ahmed Mughul	M/s Mughul Engg. Works	Engg. works	A-82 to A-85	4,444	06-09-75	1977	0,300	16	Operation
11-	Mr. Jawed Gori	M/s Jawed Rice Mill	Rice Processing	B-01 to B-16	6,666	25/09/1975	1976	0,300	14	Operation
12-	Mr. Noor Ahmed Chandio [M.P]	M/s Sevwat Rice & Ice Fac.	Rice & Ice	B-17, 18 & 25	1,556.3	05-08-04	1977	0,411	10	Operation
13-	Mr. Khairuddin Arain	M/s Harri Tractor W/s	Tractor Repair	C-09 & C-10	667	08-08-79	1979	0,155	11	Operation
14-	Mr. Noor Mohammad Kalhoro [Managing Partner]	M/s Noor Rice Mill	Rice Processing	C-20 to C-24	1,667	16/08/1978	1980	4,000	10	Operation
15-	Mr. Anwar Ali Shaikh	M/s Jawed Rec Pipe Fac.	RCC Pipe	C-18 & C-19	667	05-08-84	1980	0,997	14	Operation
16-	Mr. Abdul Wahab Sohoo	M/s Sohoo Flour Mill	Flour Grinding	C-25	333	21/02/2004	1980	0,105	9	Operation
17-	Mr. Mahesh Kumar Hindu	M/s Sindho Paapar Ind.	Paapar Making	A-47	1,111	26/08/2003	1982	0,869	9	Operation
18-	Mr. Mohammad Arshad Arain	M/s Shahanshah Bakery	Food Products	C-36 & C-37	667	05-03-08	1988	0,618	11	Operation
19-	Mr. Rajal Das Hindu	M/s Paras Rice Mill	Rice Processing	C-66 to C-89	8,000	29/07/1993	1993	4,385	14	Operation
20-	Mr. Imdad Hussain Knuhro M.P	M/s Knuhna Cold Storage	Cold Storage	A-05	1,111	1973	1986	3,500	13	Operation
21-	Mr. Amanullah Shaikh	M/s Amanallah Rice Mill	Rice Processing	A-69 to A-74	5,556	16/08/1978	1979	0,475	14	Operation

S R NO	NAME OF ALLOTTEE	NAME OF UNIT	NATURE OF INDUSTRY	PLOT NOS:	SIZE OF PLOTS IN SQ. YDS.	DATE OF ALLOTMENT /TRANSFER	DATE YEAR OF ESTABLISHMENT	Capital Investment	EMPLOYMENT	PRESENT STATUS
22-	Mr. Ayaz Hussain Meerani	M/s Seven-Up Cold Storage	Cold Storage	A-80	1,111	16/01/2012	1977	1.596	13	Operation
23-	Mr. Mohammad Urs Mangi	M/s Mangi Rice Mill	Rice Processing	B-19to24,26to31	6,667	18/05/1975	1977	0.500	13	Operation
24-	Mr. Tarique Hussain Magasi	M/s Askari CNG Filling	Filling Station	A-81	1,111	12-11-75	1978	0.340	10	Operation
25-	Mr. Sarfaraz Ali Shaikh	M/s Larkano Bakery	Food Products	A/W/Shops 5,6,7	400	17/06/1992	1993	0.700	11	Operation
26-	Mr. Amjad Ali Buledi [M.P]	M/s Jaroi Murtaza Ice Factory	Ice Making	C-15	429.0	19/04/1983	1995	0.435	6	Operation
27-	Mr. Mohammad Ibrahim [M.P]	M/s Shaikh Atta Chaki	Atta Grinding	C-16	236.0	30/01/2009	2009	0.824	5	Operation
28-	Mr. Mohammad Panah Chawro	M/s Mohammadi Oil Mill [Oil Expeller]	Oil Expelcor	C-120,C-121, C-129 & C-130	1,333	29/12/1994	1995	0.988	11	Operation
29-	Mr. Ishtiaque Hussain Qureshi	M/s A & S Salt Factory	Salt Grinding	B-35	556	16/02/1992	1995	1.425	7	Operation
30-	Mr. Anwar Ali Janveri	M/s Diamond Rice Mill	Rice Processing	C-116 to C-119 C-125 to C-127	2,667	4-9-1995	1998	0.903	9	Operation
31-	Mr. Raj Kumar Hindu	M/s Sappna Bakery [Food Products]	Food Products	C-136 to C-138 C-143 to C-145	2,000	4-8-1996	1998	0.787	9	Operation
32-	Mr. Mohammad Saleem Shaikh	M/s Subhan Allah Rice Mill	Rice Processing	A-23 to A-25 E-12 & E-13	7,221	4-6-1996	1998	0.982	14	Operation
33-	Mr. Nisar Ahmed Chawro	M/s Shahbaz Oil Mill	Oil Expelcor	C-51 to C-54	1,000	12-7-2007	1995	0.473	14	Operation
34-	Mr. Kishwar Kumar Hindu	M/s New King Pipe Fac:	Plastic Pipe	A.W/Shop No: 12,13,18, & 19	533	16/03/2005	1999	1.124	8	Operation
35-	Mr. Ghulam Rasool Bhutto	M/s Seena Bakers	Food Products	C-38 & C-39	667	1-1-1992	2000	0.847	12	Operation
36-	Mr. Saif Ali Magasi	M/s Al-Wali Oil Mill	Oil Expelcor	B-37 & B-38	1,111	27/02/2007	2002	1.025	11	Operation
37-	Mr. Ghulam Akber Sahito	M/s Hina Bread	Food Products	C-133, C-134 C-140 & C-141	1,333	18/08/1996	2000	0.754	11	Operation
38-	Mr. Inam Bux Meerani	M/s Al-Farooq Merani Atta Chaki	Atta Grinding	A-37	587	18/04/2009	2009	0.926	9	Operation
39-	Mr. Sirajul Olya Shah Rashdi	M/s Al Sayed Tractor Work Shop [Tractor Repair]	Tractor Repair	C-06 to C-08	1,000	16/03/1999	2000	3.775	17	Operation
40-	Mr. Tara Chand Hindu	M/s New Sunder Oil Mill	Oil Expelcor	A-34	1,111	13/08/1996	2001	0.956	6	Operation
41-	Mr. Masood Ahmed Bhutto	M/s Larkano Cement Jalties	Cement Jalties	A-30 & A-31	4,444	28/09/2001	2001	0.782	11	Operation
42-	Mr. Iqbal Ahmed Shaikh	M/s Royal Bakers	Food Products	B-70 & B-71	1,111	23/09/2006	2006	0.913	11	Operation
43-	Mr. Asadullah Shaikh	M/s Mehtan Bakers [Food Products]	Food Products	C-11 & C-12	667	25/07/2001	2001	0.418	11	Operation
44-	Mr. Saif Ali Magasi	M/s Al-Wali Oil Mill	Oil Expelcor	B-43 & B-44	1,111	4-4-2006	1991	0.279	11	Operation
45-	Mr. Abdul Kareem Brohi	M/s Larif Rice Mill	Rice Processing	A-03	1,111	29/03/2010	2001	0.485	9	Operation
46	Government Department	M/s Agriculture W/shop [Light Enginering]	Engg. Works	B-45 to B-50 B-78 to B-83	666	5-20-1968	1968	-	-	Operation

GOVERNMENT OF SINDH
SINDH SMALL INDUSTRIES CORPORATION, SMALL INDUSTRIES ESTATE LARKANA.

STATEMENT SHOWING "SILENT CHARACTERISTICS" IN SMALL INDUSTRIAL ESTATE, LARKANA.

SILENT CHARACTERISTICS

S R NO	NAME OF ALLOTTEE	NAME OF UNIT	NATURE OF INDUSTRY	PLOT NOS:	SIZE OF PLOTS IN SQ. YDS.	DATE OF ALLOTMENT /TRANSFER	DATE YEAR OF ESTABLISHMENT	Capital Investment	EMPLOYMENT	PRESENT STATUS
1-	2-	3-	4-	5-	6-	7-	8-	9-	11-	12-
01-	Mr. Mahesh Kumar Hindu	M/s Mahesh & Brothers [Shopping Bags]	Shopping Bags	B-66 & B-67	1,111	19/04/2006	1987	1.292	10	Closed
02-	Mr. Gada Hussain Mahessor	M/s Steel Corporation	Steel Making	A-67 & A-68	2,222	16/05/1978	1987	1.298	10	Closed
03-	Mst. Bara-u-Nisa Soomro	M/s ABN Engineering Fac: [Agriculture Implements]	Engg: Works	A-33	1,111	9-2-2008	2008	0.871	11	Closed
04-	Mr. Zakir Hussain Mahessor	M/s Mahessor Flour Mill	Flour Grinding	A-35	1,111	5-24-1905	2001	0.450	9	Closed
05-	Mr. Sartaj Ahmed Abbasi	M/s Sartaj Rice & Flour Mill	Rice & Flour	A-50	1,111	21/05/2008	1997	0.742	11	Closed
06-	Mr. Suneel Kumar [M.P]	M/s Nazim Poultry Farm	Poultry Farm	A-51	1,111	2-2-2010	1985	0.410	6	Closed
07-	Mr. Atta Mohammad Shaikh	M/s New Mohammadi Rice Reprocess Plant	Rice Processing	A-57	1,111	3-4-2015	2011	0.607	10	Closed
08-	Mr. Bashir Ahmed Shaikh	M/s Mehran Poultry Farm	Poultry Farm	A-58 & A-59	2,222	16/12/1980	1980	0.765	6	Closed
09-	Mr. Munawar Ali Shaikh	M/s Indus Plastic Grain Bags	Shopping Bags	B-62 & B-63	1,111	3-5-2008	2008	4.277	15	Closed
10-	Mr. Hubbard Ali Kalhoro	M/s Abdullah Rice Mill	Rice Processing	C-65 Plus Excess Area	1,000	4-6-2011	2000	3.785	14	Closed
11-	Mr. Mazahar Hussain Puri	M/s Inam Weaving Fac.	Textile Mill	B-39 & B-40	1,111	1973	-	0.278	12	Closed Under Cancellation

Sindh Industrial Trading Estates (Guarantee) Limited

Manghopir Road, Karachi-75700

Managing Director : 021-99333152-3
Secretary : 021-99333164
Director Administration : 021-99333170
Director Finance : 021-99333161
P.A.B.X. No. : 021-9933317-9



Chief Engineer : 021-99333148
Estate Engineer, SHW (Phase-I&II) : 021-36881830
Estate Engineer, Nooriabad : 0254-670262
Estate Engineer, Kotri : 0223-870068
Estate Engineer, Hyderabad : 022-9250135
Estate Engineer, Tando Adam :
Estate Engineer, (Navabshah) :
Shaheed Benazirabad :
Estate Engineer, Sukkur : 071-5807045
Estate Engineer, Larkana :

Ref: 7465

Date: 08/11/2018

The Director General,
Directorate of Urban Policy & Strategic Planning,
Planning & Development Department,
Government of Sindh, Karachi.

SUBJECT:- **Preparation of Urban Development Strategies (UDS)**
For Sukkur and Larkana.

Please refer to the subject noted above and find enclosed the required information.

1. SITE SUKKUR

Sailent Feature:

SITE Sukkur was established over an area of 1066 acres in the year 1963. Presently, all the utilities viz gas, electricity and infrastructure viz roads, drains and water supply are available for establishment of medium scale industries. The Government of Sindh has also approved establishment of Combined Effluent Treatment Plant for treatment of industrial waste before discharging into fresh water bodies.

Type of Industries

There are medium scale industries and presently 91 units are in production (the detail is at Annexure-"I").

2. SITE LARKANA

SITE Larkana is being established over an area of 500 acres land on Larkana Moen-Jo-Daro Road at 14 k.m. from Larkana.

The medium scale industries will be established in SITE area Larkana.


CHIEF ENGINEER

Copy to:-

1. P.S. to Managing Director, SITE Ltd Karachi.
2. P.S. to Secretary, Industries & Commerce Department, Government of Sindh