


SOCIAL AND CULTURAL CAPITAL PLAN





TOURSIM SECTOR PLAN



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EXECUTIVE SUMMARY

The state of Bahawalpur was founded in 1748 by Muhammad Bahawal Khan and was incorporated as a municipality in 1874. East of Bahawalpur is the Cholistan desert which covers an area of about 15,000 km² and extends into the Thar desert of India. In the past, there were 400 forts in the area and archaeological finds around the Derawar Fort. The fort was the only place with a perennial waterhole which indicates that Derawar fort was contemporaneous with the Indus valley civilization.

Bahawalpur has an enormous potential for augmentation of tourism due to its natural scenery and archeological heritage. A large number of tourists visit Cholistan Desert, Bahawalpur forts, and other palaces in the city throughout the year but the connectivity of the region is limited and dilapidated, apart from the major Urban Centers. Due to the climatic conditions, the area is sparsely populated in comparison to the rest of Punjab, thus the population base for localized tourism and recreation is limited outside of main urban clusters of Bahawalpur and Multan.

By moving towards private-sector led service delivery and inviting hotel chains for investments would help in the tourism led economic growth. There is a big potential of attracting all domestic/inbound/outbound tourists in Bahawalpur region. Proposed internal spatial circuits in the report will help to identify the main tourist hub and zones within cities and to enhance the human capital and tourist development.

LIST OF ACRONYMS

DTS	Department of Tourist Services
GDP	Gross Domestic Product
PHA	Parks and Horticulture Authority
TDCP	Tourism Development Corporation of Punjab
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNWTO	United Nations World Tourism Organization

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1. Overview

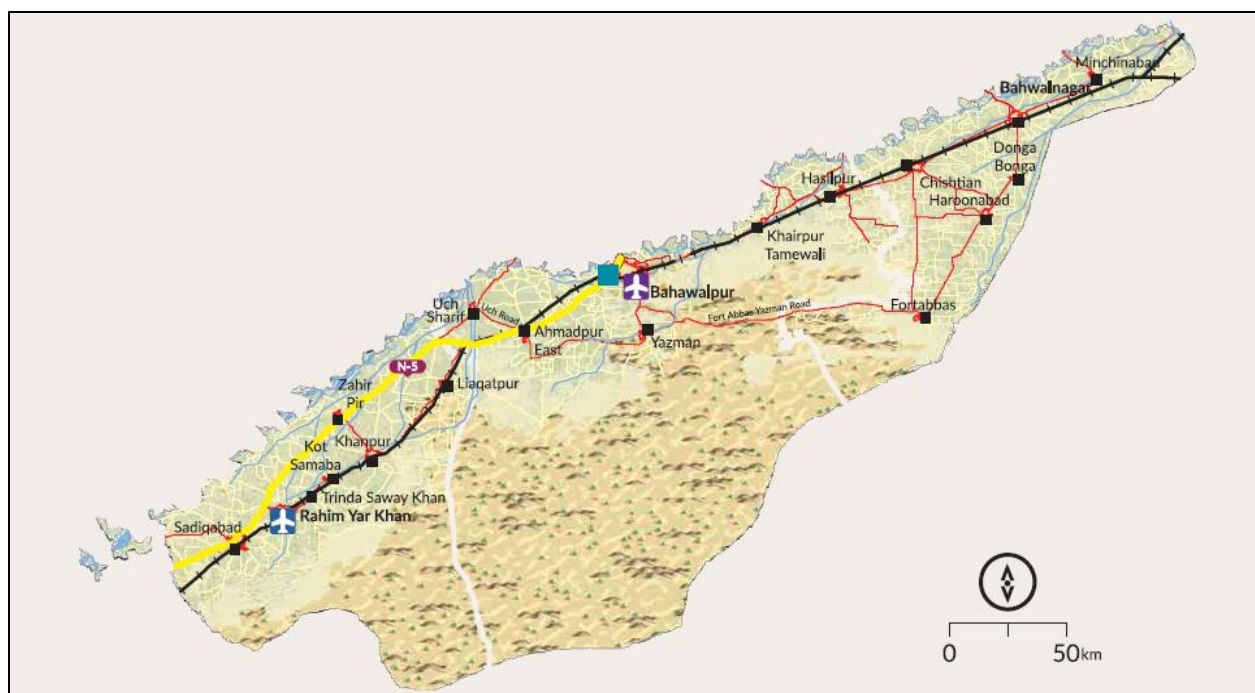
Bahawalpur division is an administrative division of the Punjab province, Pakistan. The reforms of 2000 abolished the third tier of government but division system was restored again in 2008. The foundation of the Bahawalpur city was laid in 1748 AD encircled by 7 gates and declared the capital of Bahawalpur state. During the last quarter of 19th century, the Abbasi family constructed huge and elegant palaces Noor Mahal, Gulzar Mahal, Darbar Mahal and Sadiq Garh Palaces¹.

The province of Punjab lies at the heart of the Indus valley civilization and is a kaleidoscope of different religions and cultures. With millions of Sikhs, Hindus and Buddhists worldwide, Punjab, could become a major center of religious tourism with economic benefits accruing in the form of higher income, employment and foreign exchange earnings².

Moreover, with proper information dissemination, marketing and provision of basic infrastructure, the numerous shrines of Sufi saints marked throughout the division can potentially attract higher income domestic tourism along with the traditional pilgrims.

¹ https://tourism.punjab.gov.pk/bahawalpur_city_tour

² Punjab Economic Report. Can be accessed at https://peri.punjab.gov.pk/system/files/Chapter%205.2%20Tourism%20Development_0.pdf



Map 1: Connectivity of Bahawalpur Division

Source: Map Book of Punjab, The Urban Unit, 2020³

1.1. Pakistan Key Data for Travel & Tourism

According to the World Travel and Tourism Council, Country Economic Report⁴, contribution of travel and tourism sector to GDP was 5.7% of total economy in 2019, whereas in 2020, it was 4.4% of the total economy. Out of the total employment percentage of Pakistan in year 2019, the contribution of travel and tourism to employment was 5.5% and 4.8% in year 2020 (Fig. 1). On average, the international visitors spent PKR 153.8 billion in 2019 which is 3.6% of the total exports. However, in year 2020, it was decreased to almost PKR 118.0 billion which is 2.9% of the total exports due to flight restrictions for COVID-19 pandemic.

Table 1: Pakistan Key Tourism Data of the year 2019 and 2020

Pakistan Key Data	
2019	2020
Total Contribution of Travel and Tourism to GDP:	-23.1%

³ Map book of Punjab, The Urban Unit: <https://urbanunit.gov.pk/enewsletters/urbanatlas/index.html#p=1>

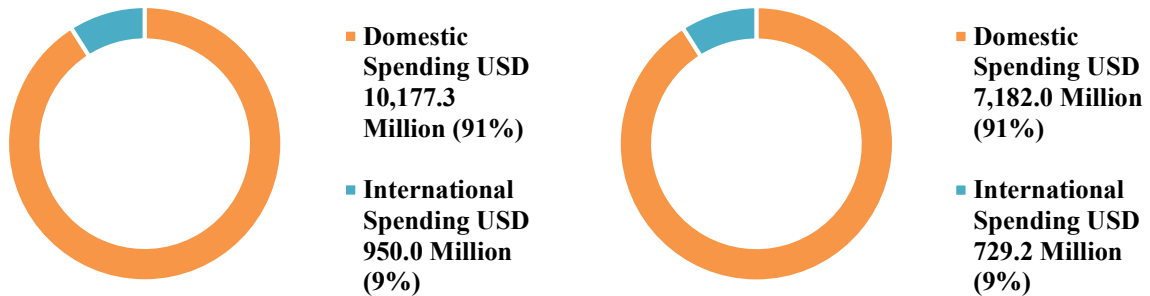
⁴ World Travel and Tourism Council, 2019 & 2020 Country Economic Impact can be accessed at <https://wtcc.org/Research/Economic-Impact>

5.7% of Total Economy Total T&T GDP = PKR2,438.7 billion (USD15,065.9 million)	4.4% of Total Economy Total T&T GDP = PKR1,874 Billion (USD11,579.5 million)	Change in Travel & Tourism GDP versus 0.5% real economy GDP change
Total contribution of Travel & Tourism to Employment:		Change in Jobs:
3,446.4 Jobs (000s) (5.5% of total employment)	3,063.2 Jobs (000s) (4.8% of total employment)	-11.1% -383.2 (000s)
Visitor Impact		
International: PKR 153.8 Billion Visitor spend 3.6% of total exports (USD 950 million)	PKR 118.0 BN Visitor spend 2.9% of total exports (USD729 million)	Change in International Visitor Spend: -23.2% -USD 220.8 million
Domestic: PKR 1647.4 Billion Visitor spend (USD 10,177 million)	PKR 1,162.5 Billion Visitor spend (USD 7,182 million)	Change in Domestic Visitor Spend: -29.4% -USD 2,995 million

Source: World Travel and Tourism Council, Country Economic Report, 2019 and 2020

Pakistan Sector Characteristics

Domestic vs International Spending



Leisure vs Business Spending

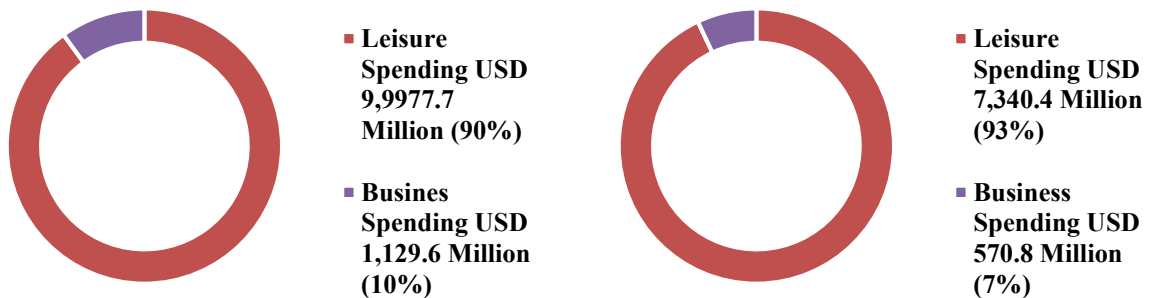


Figure 1: Pakistan tourism sector spending of the year 2019 and 2020

Source: World Travel and Tourism Council, Country Economic Report

1.2. Historical, Religious and Cultural Landmarks in Bahawalpur Division

Various historical, religious, cultural and recreational tourist sites of the Bahawalpur division are identified and marked in the division. The historical tourist site includes:

- Clock Tower
- Mauj Garh Fort
- Railway Station
- Noor Mahal
- Sadiq Garh Palace
- Fort Abbas

- Mir Garh Fort
- Pattan Minara
- Derawar Fort
- Bijnot Fort

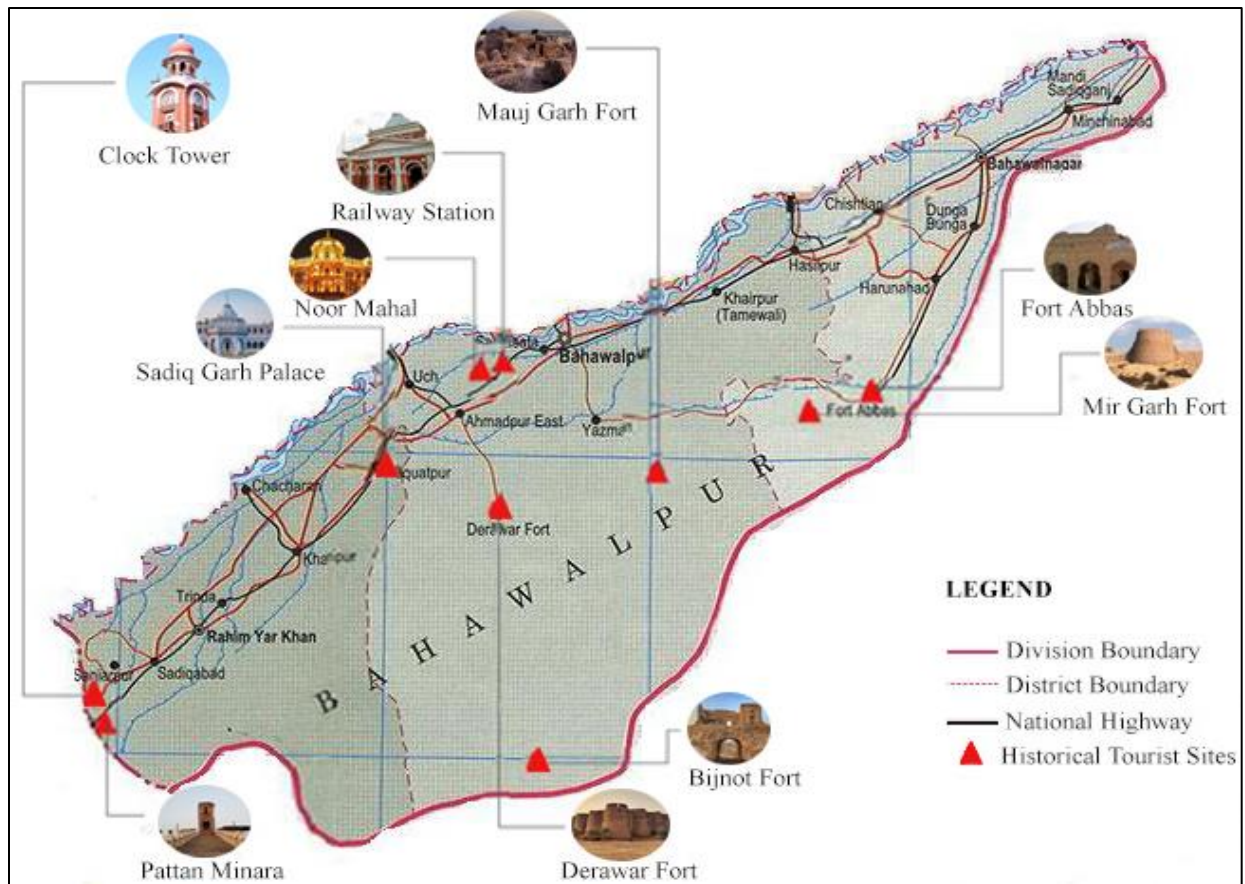
The religious sites in Bahawalpur division includes:

- Darbar Mahal
- Tomb of Javindi Bibi
- Shrine Kabeer ud Din
- Uch Sharif Mazar
- Shah Bukhari
- Hazrat Noor Muhammad Maharvi
- Darbar Khawaja Khuda Bakhsh
- Darbar Hazrat Syed Fazal Hussain

The cultural and recreational tourist sites in Bahawalpur division are:

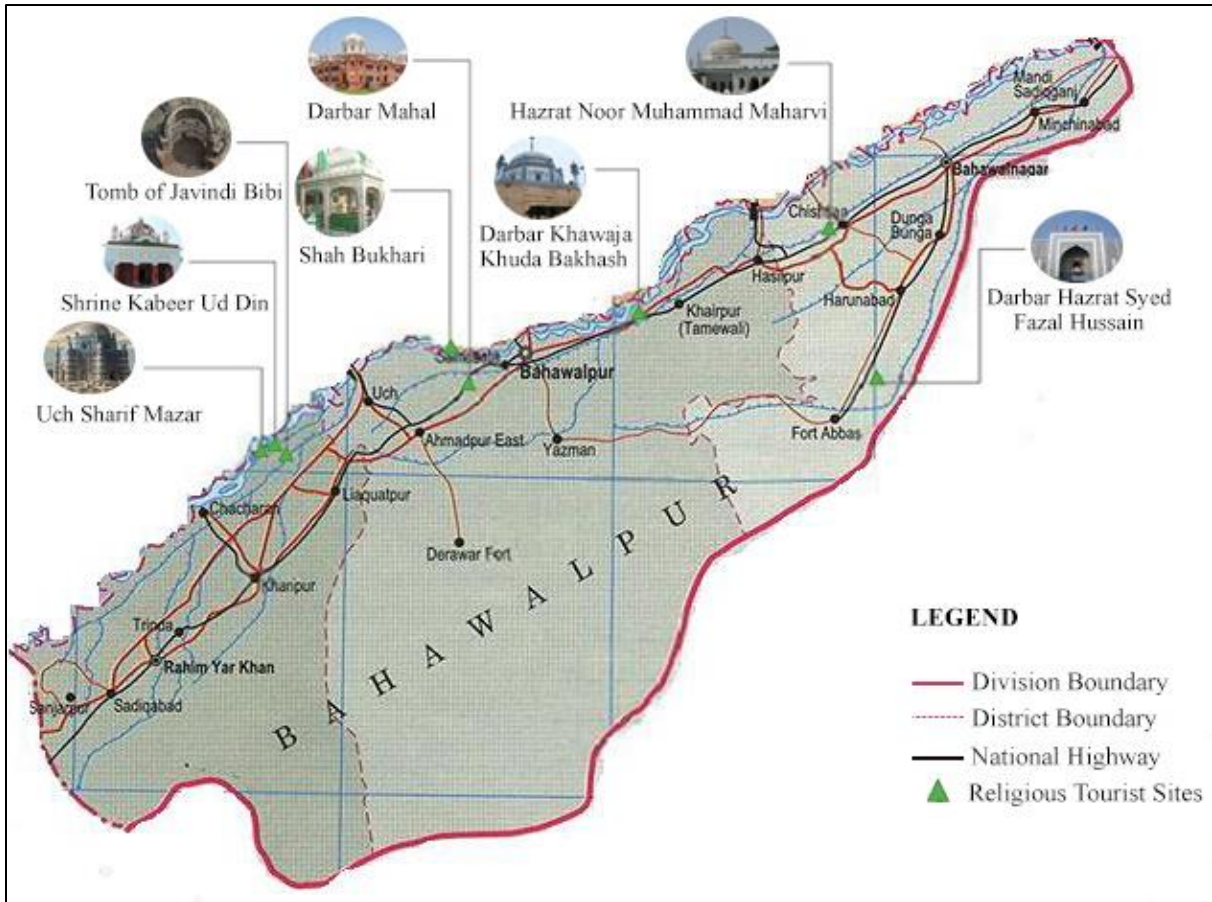
- Rahim Yar Khan Zoo
- Rahim Yar Khan Desert
- Tibba Desert Dune
- Satluj Tourist Area
- Bahawalnagar Zoo
- Railway Station, Library and Museum

Location of all the tourist sites in the division are shown below:



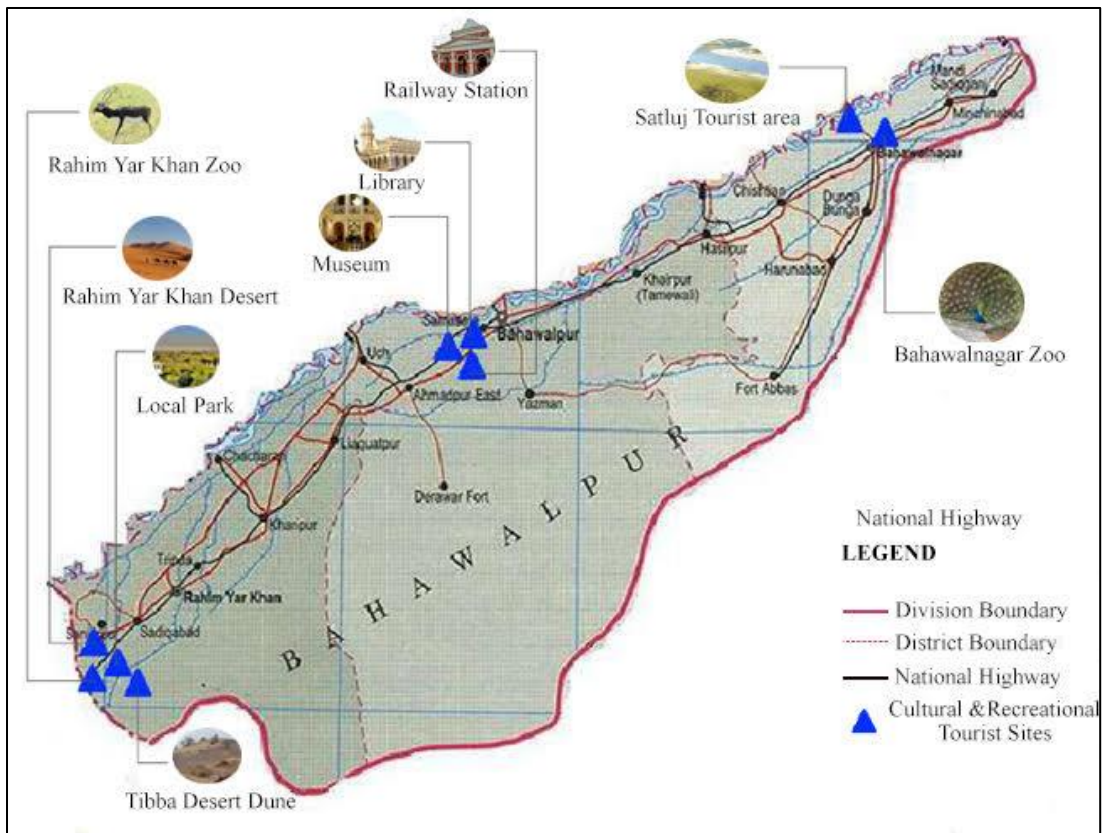
Map 2: Historical tourist sites in Bahawalpur division

Source: The Urban Unit



Map 3: Religious tourist sites in Bahawalpur division

Source: The Urban Unit



Map 4: Cultural and recreational tourist sites in Bahawalpur division

Source: The Urban Unit

1.2.1. Tourist Influx in Bahawalpur Division⁵

Following are the tourist sites with locations attracting almost 0.1 to 0.5 million visitors annually including sites from different categories such as historical, cultural and religious tourism in various tehsils of Bahawalpur Division.

Table 2: List of destinations attracting 0.1-0.5 million visitors annually

Tehsils	Location	Tourist Site	Tourism Category
Bahawalpur	Yazman	Derawar Fort	Historical Tourism
	Bahawalpur	Noor Mahal	Historical Tourism, Cultural Tourism

⁵ Punjab Tourism for Economic Growth Final Report Consortium for Development Policy Research. (2018). https://cdpr.org.pk/wp-content/uploads/2018/07/Punjab-Tourism-Project-Final-Report-HS-v2-DRAFT_22Feb.pdf

	Bahawalpur	Islamia University Bahawalpur	Historical Tourism, Cultural Tourism
	Bahawalpur	Bahawalpur Museum	Historical Tourism, Cultural Tourism
	Ahmedpur Sharqia	Mazarat Uch-sharif	Religious Tourism
Rahim Yar Khan	Sadiqabad	Bhong Masjid	Historical Tourism, Religious Tourism

Table 3: List of destinations attracting less than 0.1 million visitors annually

Tehsils	Location	Tourist Site	Tourism Category
Bahawalpur	Ahmedpur Sharqia	Sadiq Garh Palace	Historical Tourism
	Bahawalpur	Khatri Bangla	Historical Tourism
	Bahawalpur	Mojgarh fort	Historical Tourism
	Bahawalpur	Darbar Mahal	Historical Tourism
	Kharpur Tamewali	Purana Bangla	Historical Tourism
	Yazman	Mir Garh Fort	Historical Tourism
	Bahawalpur	Bahawalpur Library	Historical Tourism, Cultural Tourism
	Ahmedpur Sharqia	Shrine Kabir ud Din	Religious Tourism
	Bahawalpur	Darbar Jalal ud Din Surkh Bukhari	Religious Tourism
	Hasilpur	Baba Shah Rangeela Shrine	Religious Tourism

	Kharpur Tamewali	Darbar Khawaja Khuda Bakhsh	Religious Tourism
	Yazman	Mazarat Ashabe-e-Rasool	Religious Tourism
Bahawalnagar	Fort Abbas	Fort Abbas Qila	Historical Tourism
	Bahawalnagar	Darbar Hazrat Syed Fazal Hussain	Religious Tourism
	Chishtian	Darbar Hazrat Taj ud Din Sarawar	Religious Tourism
	Chishtian	Darbar Hazrat Noor Muhammad Maharvi	Religious Tourism
	Ahmedpur Sharqi	Mazarat Uch-sharif	Religious Tourism
Rahim Yar Khan	Rahimyarkhan	Pattan Minara	Historical Tourism

1.3. Tourism Potential

Therefore, we can safely conclude that there is an immense untapped potential of religious and heritage tourism in the province. With the right security, effective institutional framework and policy environment, Tourism can become a major vent for growth and employment generation in the province. Tourism sector has the potential of being a major source of foreign exchange for the country with Punjab province becoming a significant contributor.

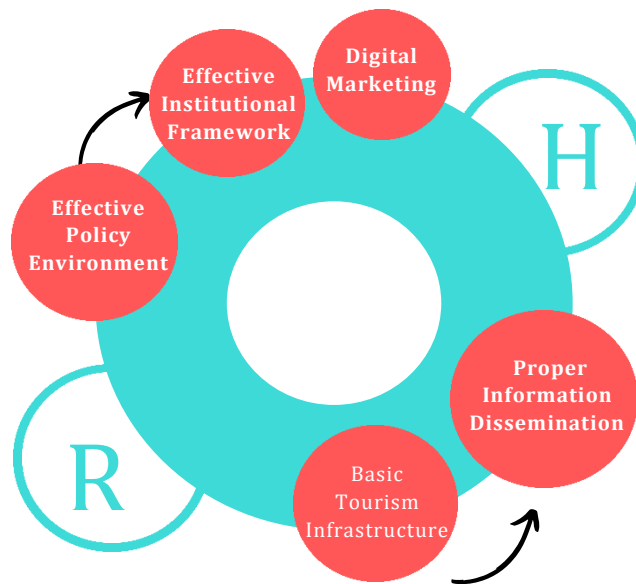


Figure 2: Tourism potential in Bahawalpur division

1.3.1. Local Assets

- Unique desert landscape, advantageous for adventure tourism

- A collection of Shrines of Sufi saints especially around BWP division and Multan city area which are responsible for local festivities.
- A chain of Forts on the Eastern and Western Borders of this region
- Lal Suhanra National Park: Flora and Fauna
- Indus River Basin: Potential for Adventure Tourism
- Connectivity through National Highways: N5 Highway
- Airports: Multan, Bahawalpur, DG Khan
- Fort Monroe has prospects as a Hill station for South Punjab.
- Government should support local businessmen to develop private tourist facilities for visitors.
- Government should market this region internationally to attract foreign tourists and visitors

2. ISSUES AND CHALLENGES

According to the Travel and Tourism Competitiveness Index developed by the World Economic Forum, Pakistan lags in all key sub-indicators with the exception of Price Competitiveness, which is resulting from depreciation in the rupee. Some more evident factors reducing the countries competitiveness include Enabling Environment (130th out of 141 countries), Safety and Security (138th out of 141 countries), Health and Hygiene (102nd out of 141 countries), Human Resource and Labor Market (138th out of 141 countries), Travel and Tourism Policy and Enabling Conditions (123rd out of 141 countries), Prioritization of Travel and Tourism by Government (120th out of 141 countries). Similarly, there is a low ranking in Environmental Sustainability (141st out of 141 countries) and Tourism Infrastructure (107th out of 141 countries)⁶. Some of the major issues and challenges in tourism sector are as follows:

- Lack of provincial level data on tourism
- Absence of a tourism management entity at the federal level
- Lack of inter-departmental coordination
- Dilapidated and poor tourism and hotel infrastructure
- Lack of reliable data and research in tourism sector and insufficient use of IT for tourism promotion
- Lack of proper enforcement of standards and certifications and inadequate capacity of the (Department of Tourist Services) DTS.

⁶ Punjab Economic Report on Tourism Development, 2018

- Security and safety of tourists and visa issues due to uncertain security and a volatile geopolitical situation, tourists do not easily get Pakistani visas
- Limited funding of the government resulting in inadequate infrastructure and departmental needs

2.1. Local Constraints in Bahawalpur Division

- Lack of allocation of funds for the promotion of tourism in the division.
- The climate of the region is not conducive of tourism activities in the summers.
- The area is generally lagging behind in development compared to the rest of the country on multiple dimensions including economic output, income disparity and the quality of human capital.
- The connectivity of the region is limited and dilapidated apart from the major urban centers.
- The area has one functional international airport at Multan but the flight operation is limited.
- Due to the climatic conditions the area is sparsely populated in comparison to the rest of Punjab, thus the population base for localized tourism and recreation is limited outside of main urban clusters of Bahawalpur and Multan.

3. SCOPE OF WORK

i. Sustainable Tourism in Bahawalpur

Sustainable tourism foundation Pakistan will be supporting the efforts of United Nations World Tourism Organization (UNWTO) for creating awareness and develop linkages with the key stakeholders in Pakistan to achieve the SGDs, with a special focus on Goals 8,12,14, in which tourism has been featured.



ii. Proposed Strategy to Promote Tourism

1. Develop inventory of:
 - a. Heritage sites

- b. Spiritual sites
 - c. Culture events
 - d. Sites and handicrafts profile with details, and
 - e. Sites suitable for rural tourism
2. Establish coordination mechanism among key stakeholders
 3. Develop site specific action plan for conservation and development of tourism infrastructure
 4. Develop marketing and communication strategy
 5. Develop human resource and build capacity of service providers
 6. Tourism management plan



Figure 3: Economic, socio-cultural and environmental impacts

4. APPROACH AND METHODOLOGY

The survey was conducted to analyze different cultural and religious sites of the Bahawalpur division. Stakeholder consultations helped to develop project understanding with the local officials which is an early step in the development of the stakeholder engagement plan. The structure of tourism profile includes:

- Overview of tourism in Bahawalpur division
- Identify tourist sites and its potential
- Tourist flow and economic impacts
- Local assets and constraints

- Improvement mechanism for tourist sites
- Proposed projects and programs

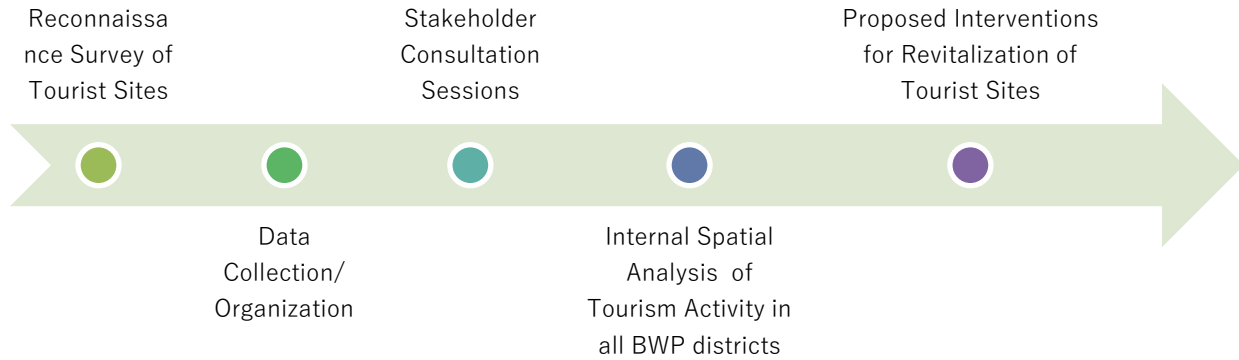


Figure 4: Work Approach for Tourism Sector

5. PROPOSALS

5.1. Proposed Intervention at Lal Suhanra Park

Lal Suhanra is a national park in Pakistan that is situated in the Bahawalpur district of Punjab province. It is one of South Asia's largest national parks, and is a UNESCO declared Biosphere reserve. Lal Suhanra is notable for the diversity of its landscape, which includes desert, forest and wetland ecosystems. There are archaeological remains of the ancient Indus valley civilization which once flourished along the Ghaggar-Hakra River.





Figure 5: Lal Suhanra National Park, Bahawalpur District

5.1.1. Existing Situation

- i. Deterioration of existing infrastructure due to lack of maintenance.
- ii. One of the abandoned and dangerous building to visit, the building has serious defects, unsafe conditions and is lying vacant and open to trespass.
- iii. This resort is currently occupied by a 'Local thekedar' / Contractor who took control over the area.
- iv. Tourism Development Corporation of Punjab (TDCP's) website does not provide proper statistics, database or policy papers to provide information on the existing tourist influx and tourist infrastructure particularly in the division and in Punjab.

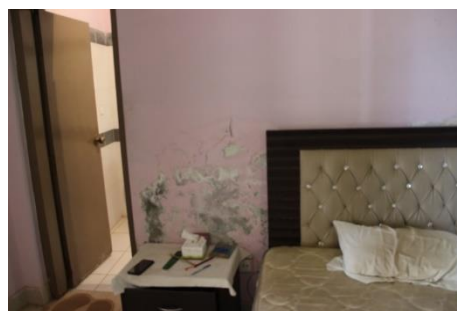


Figure 6: Existing situation of Lal Suhanra national park

5.1.3. Future Potential

Overall issue of Lal Suhanra Park is lack of inter-departmental coordination. By establishing an enabling regulatory regime to attract investment in tourism and related infrastructure would help in the tourism led economic growth. Third party hotel chains and architectural firms should be invited for open bids for the development.

Programs at Lal Suhanra park should include wild life tours, camping and unique dining experiences escaping the city life. Proper road connectivity shall be provided to all identified zones which includes but not limited to: internal tram routes for huge sites like Lal Suhanra park, ticketing/information center for tourists, proper enclosed shed sitting or observatory areas, provision of basic facilities such as rest rooms, drinking water and shed facilities within 10-15km radius of the whole site.

5.2. Proposed Intervention at Noor Mahal



Figure 7: Proposed provisions for Lal Suhanra park

5.2.1. The Royal Experience at The Noor Mahal

Located in Bahawalpur, this palace is immensely beautiful with high, colorful and tastefully decorated ceilings with massive chandeliers, aesthetically marbled, tiled floors and spacious halls. It's a majestic work of

architecture that would attract any history loving traveler to it. The building's facade is well complemented by its equally stunning interior.



Figure 8: Noor Mahal, Bahawalpur District, Punjab, Pakistan

5.2.2. Future Potential

By moving towards private-sector led service delivery and inviting hotel chains for open bidding would help in the tourism led economic growth. There is great potential of attracting all domestic/inbound/outbound

tourists here. For instance, premium accommodation may be provided inside the vicinity (upper floors) or an extension to a complete luxurious stay for guests with pleasant dining experience with exquisitely hand-crafted delicacies.



Figure 9: Proposed intervention: Hotel Noor Mahal (a 5 Star luxury hotel in the city of Karnal, India).

5.3. Proposed Zone Circuit Multan – Bahawalpur

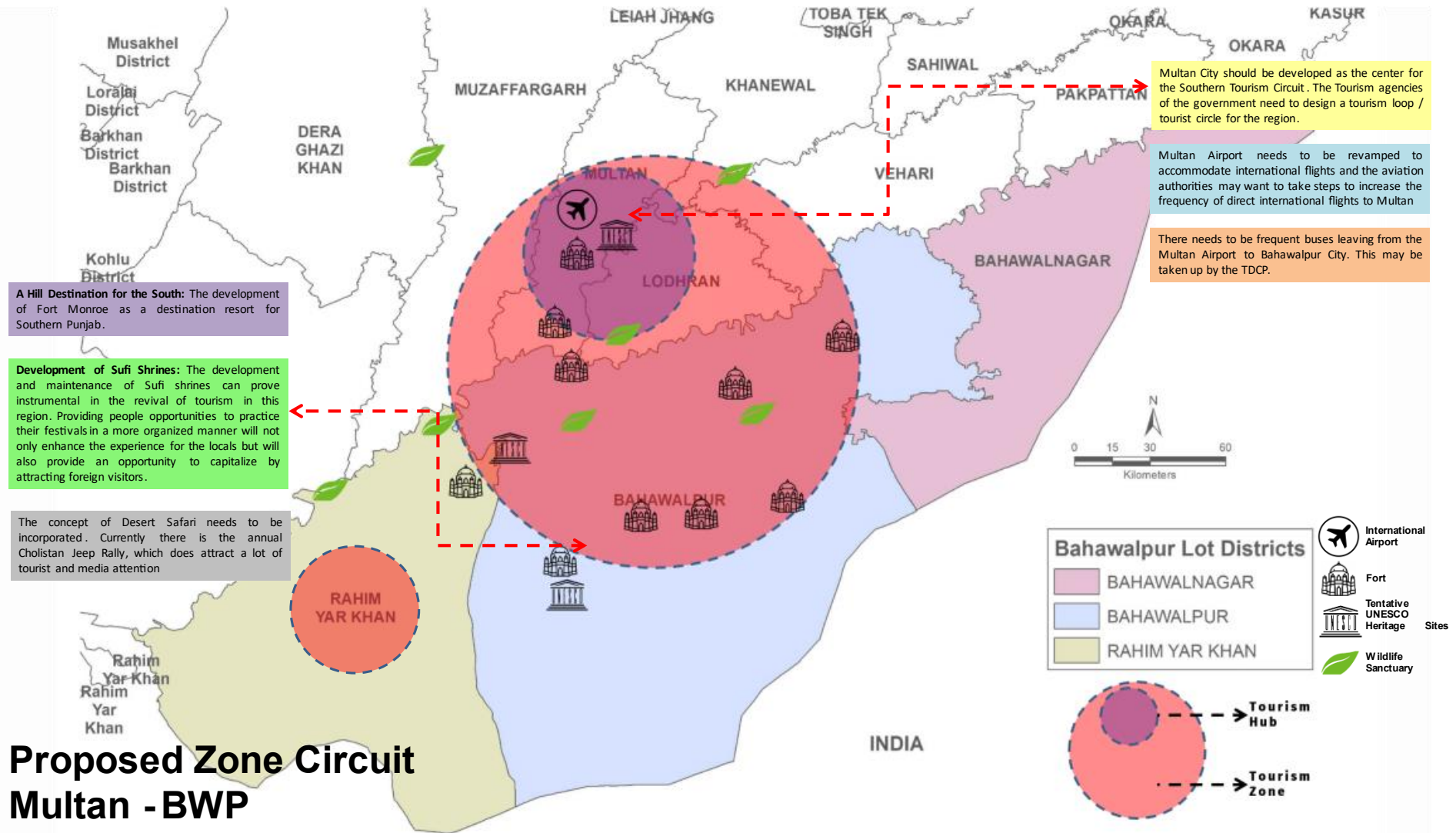
5.3.1. For Multan City

Multan City should be developed as the center for the Southern Tourism Circuit. The Tourism agencies of the government need to design a tourism loop / tourist circle for the region. Multan Airport needs to be revamped to accommodate international flights and the aviation authorities should take steps to increase the frequency of direct international flights to Multan. There is a need to increase the frequency of buses leaving from the Multan Airport to Bahawalpur City. This proposal can be taken up by the Tourism Development Corporation of Punjab (TDCP).

5.3.2. For Bahawalpur District

- *A Hill Destination for the South:* The development of Fort Monroe as a destination resort for Southern Punjab.
- Development of Sufi Shrines: The development and maintenance of Sufi shrines can prove instrumental in the revival of tourism in this region. Providing people opportunities to practice their festivals in a more organized manner will not only enhance the experience for the locals but will also provide an opportunity to capitalize by attracting foreign visitors.

The concept of Desert Safari needs to be incorporated. Currently there is an annual Cholistan Jeep Rally, which does attract a lot of tourist and media attention.

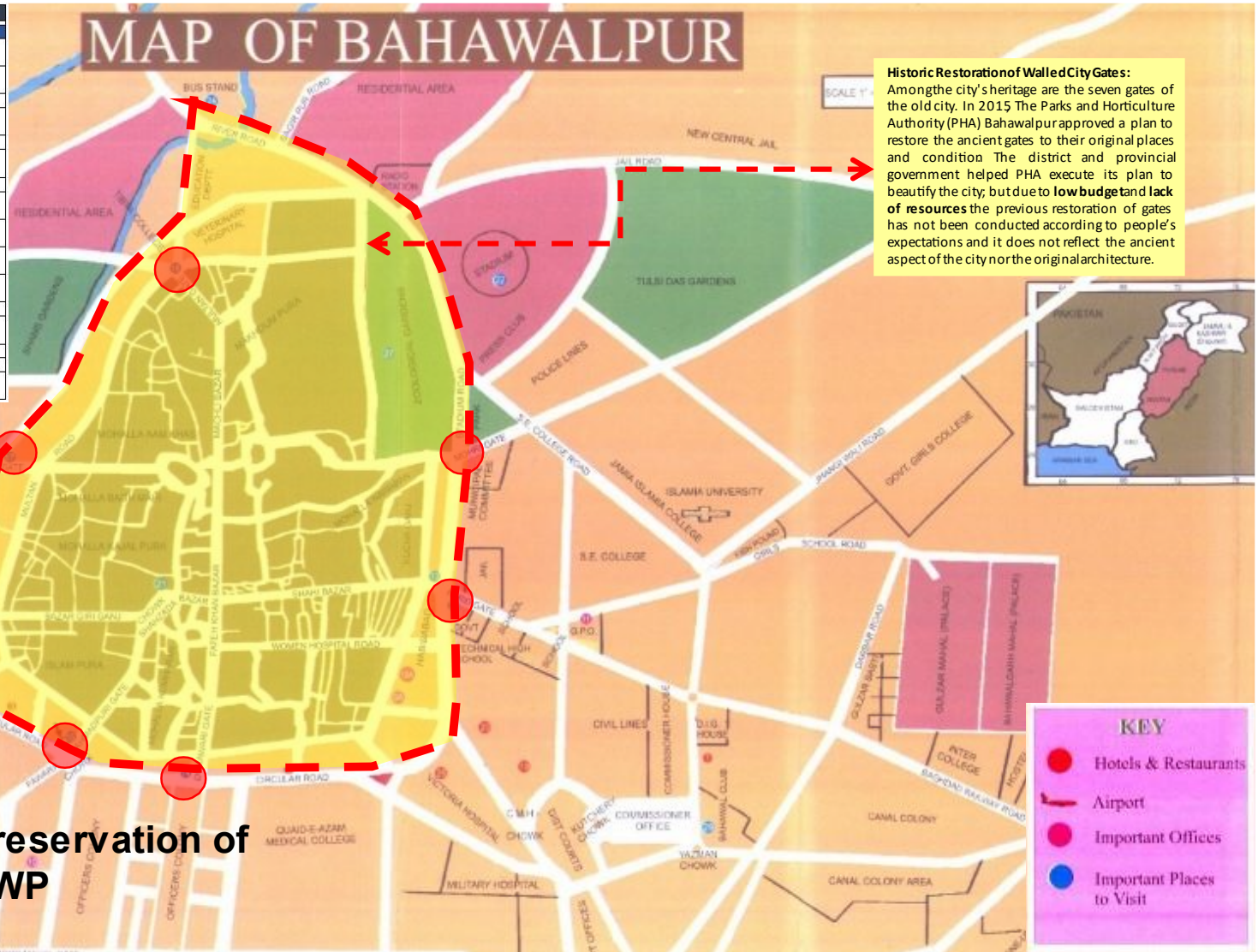


5.4. Proposed Historic Preservation of Walled City Gates in Bahawalpur

5.4.1. Historic Restoration of Walled City Gates

Among the city's heritage are the seven gates of the old city. In 2015, the parks and horticulture authority (PHA), Bahawalpur approved a plan to restore the ancient gates to their original places and condition. The district and provincial government helped PHA execute its plan to beautify the city. However, due to low budget and lack of resources, the previous restoration of gates has not been conducted according to people's expectations and it does not reflect the ancient aspect of the city nor the original architecture.

INDEX TO MAP OF BAHAWALPUR	
HOTELS	PLACES OF INTEREST
1. P.T.D.C. Moel, Club Road Ph: (0621) 84750	1. Farid Gate
2. TIC Bahawalpur, Ph: (0621) 82835 Fax: 85362	2. Derawari Gate
3. Serenity Hotel, Circular Road Ph: 876791-3 Fax: 876093	3. Ahmad Puri Gate
4. Erum Hotel, Circular Road Ph: 7122-7120	4. Shikar Puri Gate
5. Fandak-ul-Kausar Hotel, near Railway Station Ph: 877822	5. Bohar Gate
6. Mall Hotel, Circular Road Ph: 874032-877695	6. Multani Gate
7. Humera Motel, Multan Road Near Sutlej River Bridge Ph: 884859	7. Bahawalpur Museum
8. Al-Humra Hotel, Circular Road Ph: 883348	8. Bahawalpur Central Library
RESTAURANTS	9. Jamia Mosque Al-Sadiq
9. Panda, Railway Road Welcome Gate Ph: 880895	10. Shrine of Mulk Shah
10. Four Seasons, Model Town A, Near Railway Road, Ph: 874067	11. Bahawal Victoria
11. Pan Pizza Model Town B, Near Railway Road. Ph: 877140	12. Zoological Gardens
IMPORTANT OFFICES	13. Lal Sohanra National Park Road
12. P.I.A Sales Office, Noor Mehal Road. Ph: 4989/882303	14. Bahawal Club
13. General Post Office (GPO)	15. Pakistan Handicraft Centre
14. Telephone & Telegraph Office, Circular Road.	16. General Bus Stand
15. Money Changer, Circular Road, Bobby Plaza Ph: 877162	



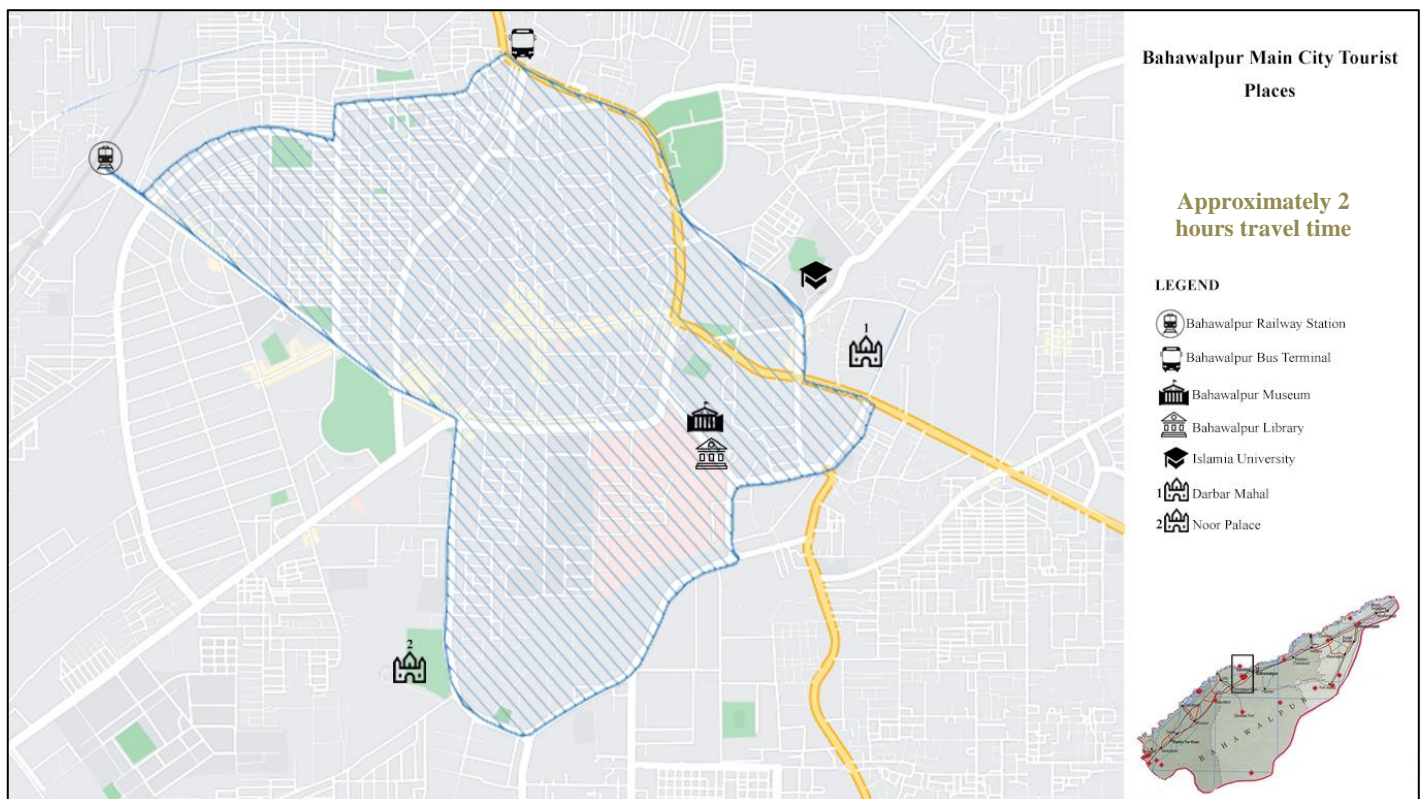
Proposed Historic Preservation of Walled City Gates BWP

Map 6: Proposed historic preservation of walled city gates of Bahawalpur

Source: The Urban Unit

5.5. Proposed Internal Spatial Circuit Bahawalpur, Rahim Yar Khan and Bahawalnagar City

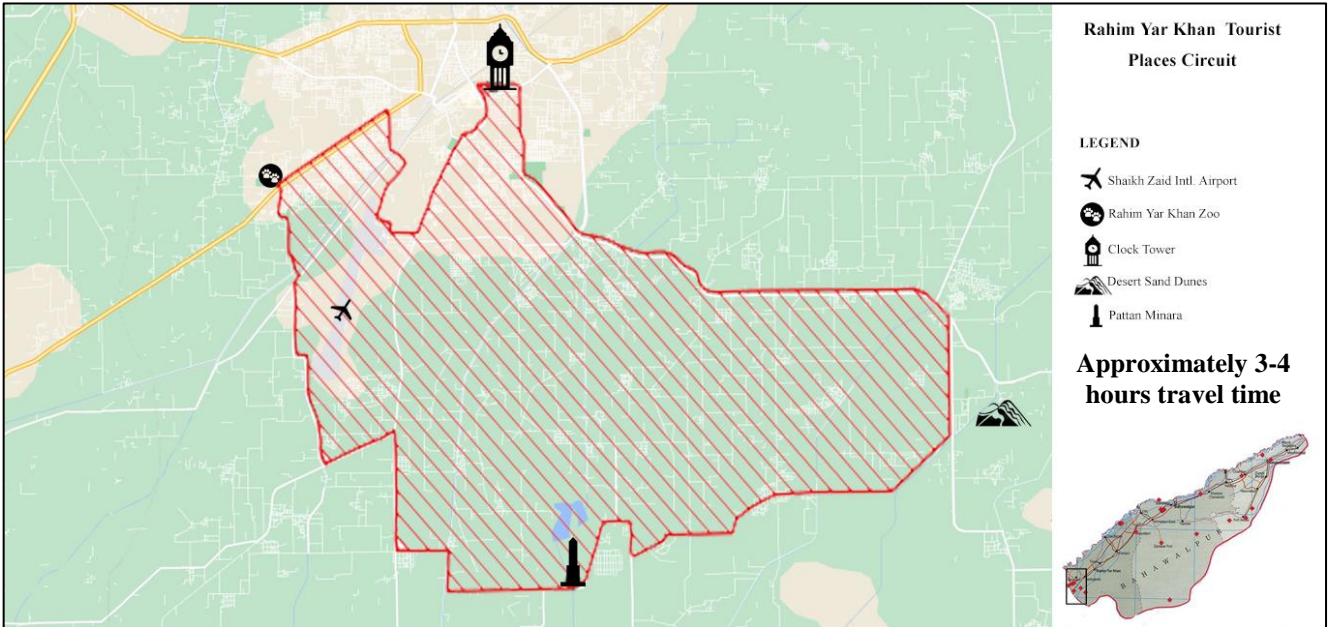
The Bahawalpur Main City Tourist Map (Map 7) indicates that in approximately 2 hours travel time, a tourist can cover Bahawalpur Museum, Bahawalpur Library, Islamia University, Darbar Mahal and Noor Palace. The proposed internal spatial circuit is also connected with Bahawalpur railway station and Bahawalpur bus terminal. In Rahim Yar Khan, the travel time of tourist places (Map 8) is approximately 3-4 hours comprising a spatial circuit of Rahim Yar Khan Zoo, Clock Tower, Desert Sand Dunes and Pattan Minara connecting with Shaikh Zaid International Airport. The Map 9 shows the tourist Places in Bahawalnagar with an approximate travel time of 5 hours connecting Bahawalnagar Zoo, Hazrat Noor Mahravi Tomb, Hazrat Syed Fazal Hussain Tomb, Fort Abbas and Mir Garh Fort.



Proposed Internal Spatial Circuit BWP

Map 7: Bahawalpur main city tourist places - proposed internal spatial circuit

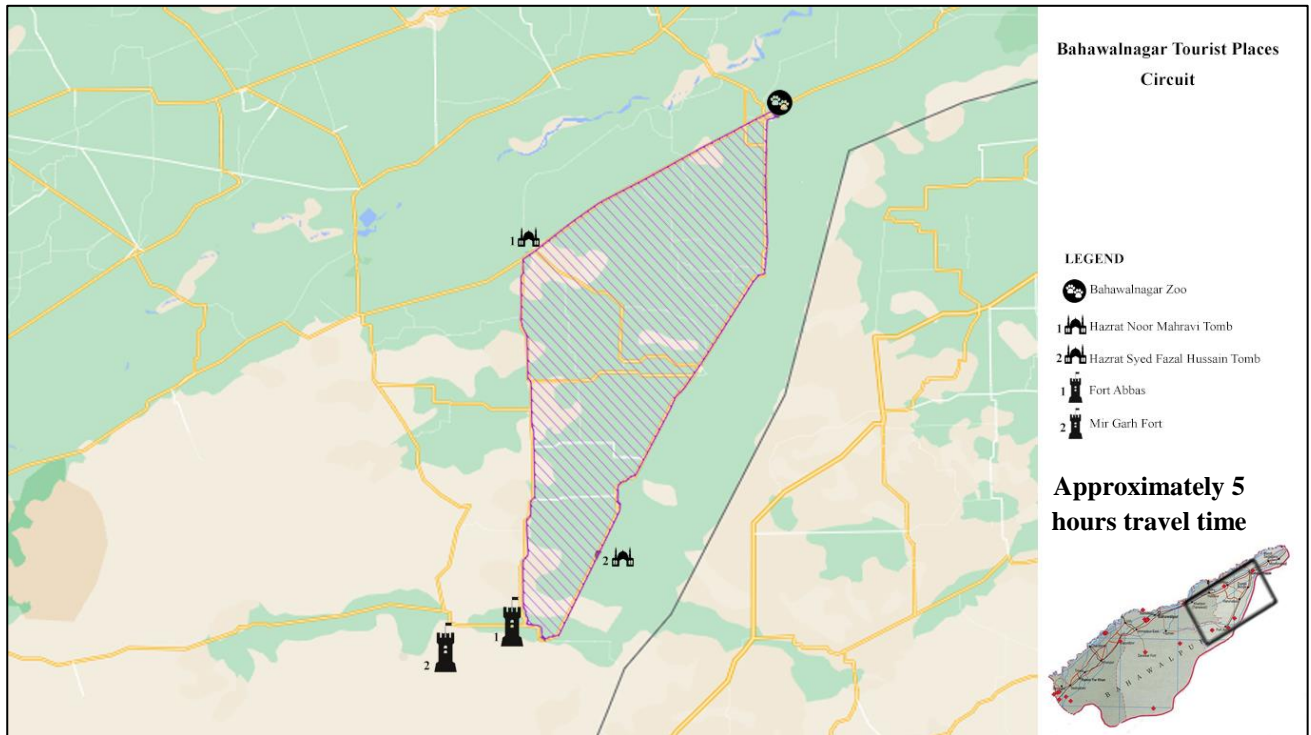
Source: The Urban Unit



Proposed Internal Spatial Circuit RYK

Map 9: Rahim Yar Khan tourist places - proposed internal spatial circuit

Source: The Urban Unit



Proposed Internal Spatial Circuit Bahawalnagar

Map 8: Bahawalnagar tourist places - proposed internal spatial circuit

Source: The Urban Unit

6. SHORT AND MEDIUM TERM PROJECTS FOR BAHAWALPUR DIVISION

Table 4: Short and Medium term projects for Bahawalpur division

S. No.	Project	Proposed Budget (PKR)	Description	Relevant Stakeholders
1	To identify/design a tourism loops and tourist inventory for the Southern Punjab region	50 million	Tourist linkages within Multan, Bahawalpur Division & Cholistan	Cholistan Development Authority, District Government, TDCP
2	Bus Routes connected from the Multan Airport to Bahawalpur City and Cholistan	60 million	Tourist Bus services incl shuttle within cities	TDCP District government, local municipal department
3	Development of the South Hill station Fort Monroe as a destination ressort	30 million	Southern Punjab first Hill Station	District government, local municipal department, TDCP, DTS
4	Development and maintenance of Sufi Shrines	200 million	Bahawalpur, Uch Sharif, Ahmadpur East, Yazman, Hasilpur, Khairpur Tamiawali, Bahawnagar, Chishtian, Haroonabad, Fort Abbas, Minchanabad, Rahim Yar Khan, Sadiqabad, Khanpur and Liaquatpur in Bahawalpur division.	District government, local municipal department

5	Cholistan Desert Safari and & Fort Trail	50 million (Already in ADP)	Establishing a small fleet of 4x4 Vehicles for Desert Safari in the Area in PPP mode	Local government administrations
6	Bahawalpur & Cholistan TDCP desert resort	30 million	Tourist linkages within Multan, Bahawalpur Division & Cholistan	Cholistan Development Authority, District Government, TDCP
7	Weekend Gateway & Night Safari Park Facilities and Programs at Lal Suhanara Park	80 million	It can include Wild life tours, camping and unique dining experiences escaping the city life	TDCP, DTS District government, local municipal department,
8	'The Royal' accommodation experience at The Noor Mahal	80 million	Through facilitation of hotel rooms and fine dining	District government, local municipal department, TDCP, DTS
9	The Tomb of Bibi Javindi Tomb Façade illumination	10 million	One of the five monuments in Uch Sharif that are on the tentative list of the UNESCO World Heritage Sites	District government, local municipal department, TDCP, Auqaf and Religious Affairs
10	Online Tourist visitor data and management system	20 million	All Tourist sites shall come up with 'Online visitor data management system' via apps, websites which would inform future policy making	Local government administrations

7. WAY FORWARD

Based on the analysis, this section lists a set of projects and proposals, specially aimed at boosting heritage and religious tourism in Punjab, enabling its substantial contributions to the growth and development of the province. Enlist are the future activities that needs to be aligned in order to successfully implement the regional plan. Together, these policy principles aim at promoting a culture of inclusiveness and sustainable tourism for Bahawalpur Division.

- Creating a robust institutional framework for tourism sector
- Establishing an enabling regulatory regime that attracts investment in tourism and related infrastructure
- Moving towards private-sector led service delivery
- Putting in place quality standards and ensuring safety and security for tourists
- Facilitating high quality skilled workforce for the sector

A photograph of several vibrant green oak leaves with lobed edges, arranged in a star-like pattern on a dark, textured wooden surface. The leaves are the central focus, with their veins clearly visible. The wood grain is prominent, showing a mix of dark brown and black tones.

ENVIRONMENT SECTOR PLAN



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Acronyms

AD	Assistant Director
AQI	Air Quality Index
AQLI	Air Quality Life Index
BWP	Bahawalpur
CBD	Central Business District
CBD	Convention on Biological Diversity
CETP	Combined Effluent Treatment Plant
DC	Deputy Commissioner
DD	Deputy Director
DO	District Officer
EPA	Environment Protection Agency
EPD	Environment Protection Department
GIS	Geographical Information System
HUD&PHED	Housing Urban Development and Public Health Engineering Department
ICT	Information Communication and Technology
IEs	Industrial Estates
IETT	Institute of Environment Technology and Training
LGA	Local Government Academy
MC	Municipal Corporation
MEAs	Multilateral Environmental Agreements
MPDD	Management and Professional Development Department
PDCA	Punjab Development of Cities Act
PEPA	Punjab Environmental Protection Act
PHA	Parks and Horticulture Authority
PHATA	Punjab Housing and Town Planning Agency
PLGA	Punjab Local Government Act
PM	Particulate Matter
RDP	Regional Development Plan
RISE	Responsive Investment for Social Protection and Economic Stimulus
RYK	Rahim Yar Khan
SDGs	Sustainable Development Goals
SDO	Sub Divisional Officer
UC	Union Council
UHI	Urban Heat Island
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
VP&NCA	Village Panchayat and Neighbourhood Councils Act
WHO	World Health Organization
WTP	Willingness To Pay

Executive Summary

Cities are where development challenges and solutions meet. Regional plan plays an integral role when cities development activities influences at a regional scale which might end up in under-utilization and wastage of resources. Thus, demanding a regional level development plan which help to cater the spatial, economic and environmentally sustainable development in the region. Bahawalpur is one of the economic hubs of Punjab and has high potential for economic growth and provides higher opportunities for private sector investments.

Bahawalpur Region (Division) is one of the nine administrative divisions of Punjab, covering an area of 45, 588 sq. km. The region is further divided in to three districts i.e. Bahawalpur District, Rahimyar Khan District and Bahawalnagar District. It holds over 11.5 million population in which Rahim Yar Khan district is more populated with almost 4.8 M population in the region. The region is governed by the Commissioner while districts are governed by Deputy Commissioners (DCs).

Bahawalpur Region is facing immense urban challenges due to neglect of sustainability aspects with respect to the provision of infrastructure and municipal services. The impacts of climate change are also visible throughout the urban arena of Punjab and Bahawalpur Region is no exception to it. The present land use pattern in Bahawalpur is characterized by mixed land uses and unplanned growth of the city.

The inner cities of the region has become a highly congested Central Business District (CBD) and suffering from high level of air and noise pollution. The old water supply and sewerage system has become outlived and overflowing gutters are seen in the inner cities. Roads are fast becoming congested and the traffic delays and jams are quite frequent. The ground water aquifer which already contain brackish water is further being polluted with contaminants due to the sock pits being dug by poor people who do not have an access to the sewerage system. An unprecedented increase in the car ownership rate in Bahawalpur (like other cities of Pakistan) has caused a high level of air and noise pollution in the city in addition to traffic delays and increased number of accidents. All three districts (with Rahim Yar Khan at highest) have experienced heavy flooding in the past and are at a high risk of Floods. According to the Air Quality Life Index (AQLI), residents of Bahawalpur Region may live up to 1.93 years longer (on average) through effective policy implementation. The districts of Bahawalpur Region, specifically Bahawalnagar, and small cities of Bahawalpur and Rahim Yar Khan are at acute shortage of urban green spaces which could serve as oxygen factories and recreational facilities for the public

As per the data collected from the administrative departments, there are a total of 55 public parks (113.41 acres land) currently present in Bahawalpur Region to cater its 11.46 million population. 23 Parks are currently under PHA Bahawalpur jurisdiction covering an area of 52.81 acres. 24 Parks are managed by MC RYK covering an area of 38.6 acres and 8 Parks in Bahawalnagar district are present covering an area of 22 acres.

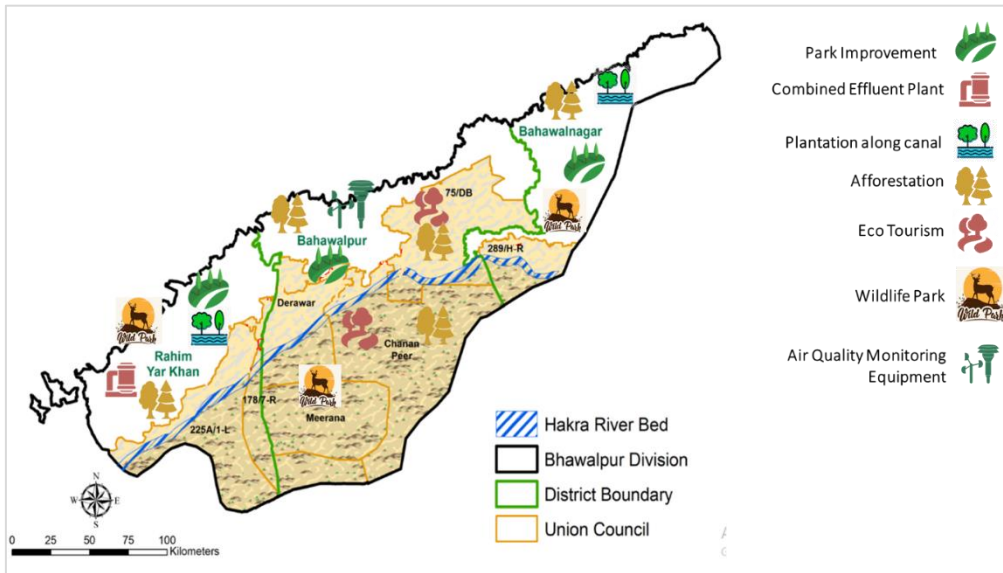
Keeping in view the aforementioned context, the regional plan of Environment sector was developed using participatory approach combined with the field visits of Bahawalpur Region and primary & secondary data analysis at local, regional and national level. The planning exercise involved all relevant key stakeholders (including local community) in identification of key projects, their timelines - short-medium-long term investment plan at district and regional level.

In an attempt to record perceptions and attitudes towards urban green spaces as well as their willingness to pay for these services, a survey was also carried out with the help of a survey tool. The perception survey provides evidence of a strong demand for urban green spaces in Bahawalpur Region. The results indicate a limited quantity and poor quality of the urban green spaces, specifically for women and children. Secondly, the preferences of the people are much higher for well-maintained public parks in their vicinity. Thirdly, the results of the analysis clearly states that the local authorities should primarily bear the costs of urban green improvement and its provision. Contrary, those who are willing to pay can contribute a small share of their income for the enhancement or provision of green spaces. Hence, these findings have important implications on citizen centric development approach and demands for sustainable solutions on priority basis.

Another important consideration was to compare existing area (m²) of urban green space of Bahawalpur Region with World Health Organization - WHO guidelines⁷ (as no reference is available at local, provincial, or national scale in Pakistan) and determine the green space per capita. Considering the total urban population of Bahawalpur Region, 0.16 m² green space (Parks and Green Belts) per capita is available as compared to the recommended area of 9 m². Further analysis revealed that 6282 acre land is required for green spaces to meet the 9 m² standard. Currently, the region has ~110 acre for such spaces which is significantly low.

Based on the framework of regional development plan, desk review/secondary information, on-ground survey, perception and expectation survey, consultations with local community and meetings with local authorities, a Project digest is developed for Bahawalpur Region, which can also called as Investment Plan. These projects are divided based on their urgency / priority for a ten year span and divided in to short, medium and long term. A short term plan of Bahawalpur district mainly involves rehabilitation of existing parks and green belts along with construction of PHA complex and Horticulture Academy , etc. for which rough cost estimates are Rs. 467 million, whereas medium and long term mainly involves new developments and costs Rs. 210 million and long term Rs. 75 million respectively. The total cost for RYK is proposed as Rs. 1504 million (mainly involves construction of combine effluent plant) and for Bahawalnagar estimates cost is Rs. 88 million.

⁷ World Health Organization. 2021. Health Indicators of Sustainable Cities in the Context of the Rio+20 UN Conference on Sustainable Development. WHO; Geneva, Switzerland.



Proposed Interventions in Bahawalpur Region –Environment Component

Overview

1.1. Defining a Region

A 'region' can be defined in multiple ways depending upon the scale of analysis. It could be any administrative or politically/economically/spatially defined area which may cover different states/countries or could be at national / sub-national / local scale and has role in certain level of development.

In Pakistan, the administrative jurisdictions are divided into divisions, districts and tehsils. After the partition, the Punjab province was primarily divided into three divisions i.e. Lahore, Rawalpindi and Multan. In the mid-90s, with an escalation in population, Gujranwala and Faisalabad emerged as major cities and acquired the status of divisional headquarters as exhibited in Figure 1. Currently Punjab has 9 divisions, 36 districts and 194 cities.



Figure 10: Evolution of Divisional Headquarters of Punjab

Considering differences in demographic, administrative and topographic characteristics, Punjab is divided into North, Central and South Punjab. The South Punjab includes 11 districts i.e. (i) Bahawalnagar, (ii) Bahawalpur, (iii) Dera Ghazi Khan, (iv) Khanewal, (v) Layyah, (vi) Lodhran, (vii) Multan, (viii) Muzaffargarh, (ix) Rahim Yar Khan, (x) Rajanpur and (xi) Vehari.

These administrative units serve as the baseline for public spending from various tiers of government. As we move up the administrative hierarchy from cities and districts, division plays a crucial role in providing public services more efficiently due to economies of scales and higher decision making power.

Punjab Spatial Strategy 2047 outlines division as a good boundary for achieving larger development goals in harmony with districts and cities as well as for assessing the comparative advantages at a macro scale.

The strategy identifies division as a 'region' which form the economic units based on a regional vision and development plans which not only enhance competitiveness and productivity of the region but also enable efficient resource allocation and more economic returns. In international context, China has successfully achieved its economic transition from an agrarian economy to an industrialized economy by focusing regional developments and integrated planning frameworks.

Considering the existing administrative structure of Punjab, **the term division will be used as an economic 'Region'** so that adoption of the plan requires minimal changes to existing processes on which current planning and systems have evolved. Bahawalpur is one of the economic hubs of Punjab and has high potential for economic growth and provides higher opportunities for private sector investments. Therefore, Bahawalpur Region (division) is chosen for the Regional Development Plan of Punjab.

1.2. Setting the context

Cities are where development challenges and solutions meet. Regional plan plays an integral role when cities development activities influences at a regional scale which might end up in under-utilization and wastage of resources. Thus, demanding a regional level development plan which help to cater the spatial, economic and environmentally sustainable development in the region. It also helps in managing the challenges, disparities and competition for development resources between cities in a region as well as keep the goods and resources available to them as per their needs.

Green economy and environmental sustainability are integral components of Sustainable Development in the region as they both impact various dimensions of development interventions, starting from improving basic infrastructure and provision of clean and safe water and sanitation to fostering urban green spaces, good quality environment and harnessing natural habitat and biodiversity of cities. The integration of these dimensions is indispensable towards economic growth at local, regional and national scale.

For a region of well-connected and, improved green spaces offer multiple opportunities to the urban residents for recreation and social contact, good quality air and water, increase mobility and connectivity, vigorous mental and physical exercise places, stress recovery, as well as more resilient to extreme environmental events, such as heat waves. Such a region (or a city) is also likely to have healthier inhabitants, decreasing demands on health services and contributing to a robust economy.

In Punjab, rapid growth of urbanization, industrialization and environmental pollution (along with other factors) has lessened the vital role of the natural environment and their associated values covering a wide range of ecosystem services to the citizens. According to Pakistan Economic Survey 2013-14, the environmental degradation cost over Rs.365 billion to Pakistan's Economy in the past, including Rs.70 billion loss due to soil degradation, Rs.67 billion loss due to indoor pollution, Rs.65 billion loss because of urban air pollution, Rs.45 billion for lead exposure and land degradation and Rs.6 billion for deforestation. This environmental degradation cost may crossed Rs.450 billion. In the latest report of World Bank (2019), the estimated cost of air, water, industrial pollution & occupational safety of Pakistan is almost 25 US\$, billion or 8.9% of GDP.

South Punjab is in grip of severe environmental crises due to natural (e.g. maximum variations in temperature; desert area) and anthropogenic sources (e.g. Industries, deforestation, etc.). Bahawalpur Division (Region) is also facing similar issues in which lack of urban green spaces (specifically public parks and green belts) and industrial pollution (air and water) are at the top. Thus, demanding a number of interventions with a range of amenity green structures and improved environmental quality in order to develop a proportion between grey and green areas of the region.

At city level, Bahawalpur has ranked highest (74.8%) in South Punjab (second in overall Punjab⁸) in Clean Green Pakistan Index (CGPI). CGPI is based on five pillars (i) safe drinking water, (ii) hygiene, (iii) sanitation, (iv) solid waste management, and (v) tree plantation. The 'Tree Plantation Pillar' includes three indicators i.e. (i) Green belts in the city, (ii) Tree plantation target and (iii) Parks/Gardens properly maintained. However, the city of Bahawalpur remained best mainly due to solid waste management (Pillar IV).

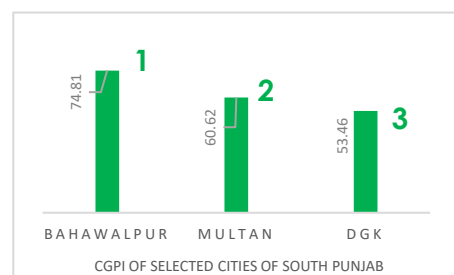


Figure 11: CGPI City Ranking of Selected Cities of South Punjab

⁸ Source: CGPI – Ranking of 13 Cities in Punjab. Phase I (January – March, 2020). Power Point Presentation.

Despite Bahawalpur City has shown better performance in CGPI in terms of cleanliness (74.81%) and greenery (13.59%) than other cities of Bahawalpur Region, inter-district disparities continue to exist and pose a threat towards achieving sustained and equitable development in the region. Therefore, a regional development plan of environment sector is required which cater the needs of all districts of the Bahawalpur Region for sustainable economic development and socio-economic wellbeing of the citizens of South Punjab.

1.3. Regional Profile

Introduction

Bahawalpur Region is lying between the Punjab and Sindh province (29°23' 44.6" N and 71°40' 60" E). Bahawalpur, Headquarter of the region, is located south of the Sutlej River and lies in the Cholistan region near the Thar Desert. It is situated 420 km from Lahore, 270 km from Faisalabad and 90 km south of Multan, one of the Industrial cities of Pakistan. The west region of the city is called the Sindh. It is a fertile alluvial tract in the Sutlej River valley that is irrigated by floodwaters, planted with groves of date palm trees, and thickly populated forests. Thus, Bahawalpur Region is land marked from all the sides. In the south and south east the Cholistan reaches the Indian boarder whereas in the north it runs parallel to the southern part of the Punjab plains and river Sutlej makes a common border with the Lodhran and Muzaffargarh districts.

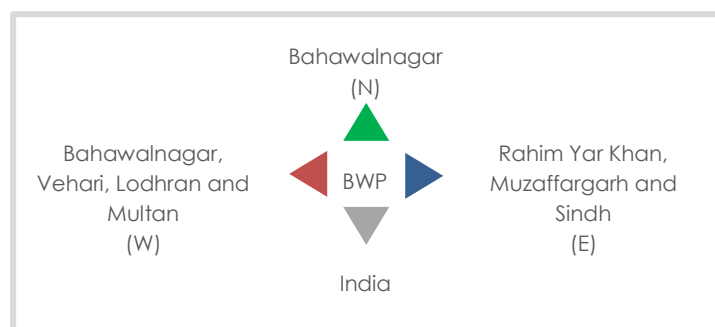


Figure 12: Neighborhood Areas of Bahawalpur District

Bahawalpur Region (Division) is one of the nine administrative divisions of Punjab, covering an area of 45, 588 sq. km. The region is further divided in to three districts i.e. Bahawalpur District, Rahimyar Khan District and Bahawalnagar District. It holds over 11.5 million population in which Rahim Yar Khan district is more populated with almost 4.8 M population in the region. The region is governed by the Commissioner while districts are governed by Deputy Commissioners (DCs).

Demographic Trends

Within Bahawalpur Region, there is a substantial rural-urban difference in the population size. According to the Census 2017, 24.64% of total population of Bahawalpur Region lives in urban areas whereas overall annual growth rate is 2.16 as compared to census 1998. District level analysis shows that the ratio of urban and rural population is 25% and 75% respectively, with majority of people residing in the rural areas in all districts of Bahawalpur Region.

Table 2: Demographic Profile of Bahawalpur Region⁹

⁹ Population Census 2017

S. #	Particulars	Bahawalpur Region		
		Bahawalpur District	Bahawalnagar District	Rahimyar Khan District
1.	Location	29°22' N, & 71°41'E	30°00'3''N & 73°15'33'' E	28.65° N & 70.68° E
2.	Area	24, 830 km ²	8, 878 km ²	11, 880 km ²
3.	Population (2017)	3, 669, 176	2, 975, 656	4, 807, 762
4.	Population Density	147.77	335.17	404.69
5.	Urban Proportion	31.95	20.83	21.44
6.	No. of Tehsils	6 (Bahawalpur City, Ahmedpur East, Bahawalpur Saddar, Hasilpur, Yazman, Khairpur Tamewali)	5 (Bahawalnagar City, Chishtian, Haroonabad, Minchiabad, Fort Abbas)	4 (Rahimyar Khan City, Liaqatpur, Sadiqabad, Khanpur)
8.	Average Household Size	6.24	6.16	6.77

By 2031, it is likely that the population of Bahawalpur Region will grow by 34.8%. District wise population projection is provided in the below table;

Table 3: Projected Population¹⁰

Districts	Growth Rate (1998-2017)	2017	2021	2025	2031
Bahawalpur Region	2.16	11,464,031	12,487,080	13,601,425	15,462,145
Bahawalpur District	2.18	3,669,176	3,999,743	4,360,092	4,962,392
Bahawalnagar District	1.95	2,975,656	3,214,634	3,472,806	3,899,455
Rahim Yar Khan District	2.26	4,807,762	5,257,340	5,748,959	6,573,913

With an increase in the population in the next 10 years, the stress on the natural resources and environment of the Bahawalpur Region could be much higher. Thus, demanding a regional level development plan where development efforts are focused on the creation of system of cities which foster intercity networking, create more jobs and increase productivity as well.

Administrative Set-up of Bahawalpur Region

The size of settlements in Punjab is associated with the decision-making hierarchy where all larger cities correspond to divisional headquarters; Intermediate and smaller cities mostly at district headquarters; and towns at the tehsil headquarters. According to the Punjab Local Government Act 2019 (PLGA-19) and the Punjab Village Panchayats and Neighborhood Councils Act 2019 (VP&NCA-19) passed by Punjab assembly, the updated local government areas are shown in Table 3.

Table 4: Administrative set-up of Bahawalpur Region

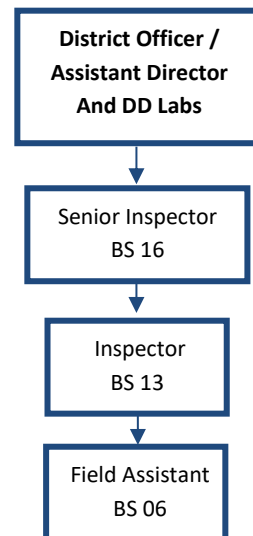
¹⁰ Based on the Statistical Analysis done by the Urban Unit

The Local Government Areas			
PLGA 2013	Total	PLGA 2019	Total
Municipal Corporation	1	Metropolitan Corporation	1
Municipal Committee	5	Municipal Committee	14
Union Councils (Rural)	88	Municipal Corporation	2
Union Councils (Urban)	21	Town Committee	18
MC Wards	127	Tehsil Councils	14
Total	781		49

Institutional Set-up

Environment and Green Spaces are mandate of multiple entities in Punjab. Details are as follows;

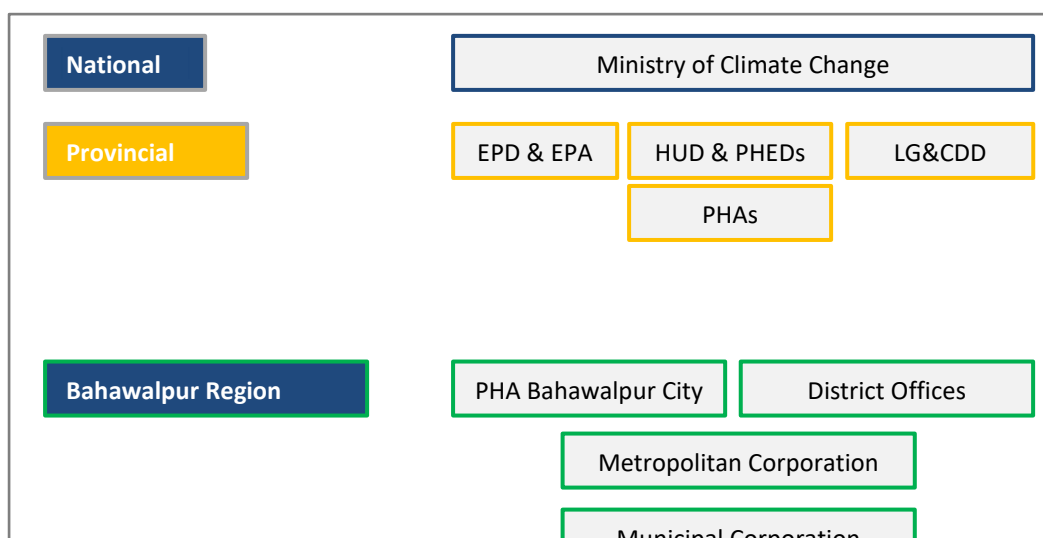
Environmental Protection Agency (EPA) is responsible for implementation of the Punjab Environmental Protection Act, 1997 (amended 2012). EPA Punjab is staffed by such officers on terms and conditions as are set out in the Environment Protection Department Punjab Service Rules, 1997 issued vide Notification dated 28th November 1997 by the Governor of Punjab. The Headquarter is in Punjab, whereas **District Offices** are located in all districts of Punjab. These District Offices are responsible to assist all Directorates of EPA in field related matters. In few major districts, the district offices are headed by Deputy Director (DD Environment), whereas in other districts, like districts of Bahawalpur Region, the District Offices are headed by the Assistant Directors (AD Environment). District Offices are assisted by Senior Inspectors, Inspectors, Field Assistants and Clerks.



As per the PLGA - 2019, implementing agencies at **local government level** include Metropolitan Corporation, Municipal Committee, Municipal Corporation and Town Committees and Tehsil Councils. However, the system is still in transition phase. The provincial level with LG&CD department – although the policy umbrella assigns a technical role for HUD and PHED in planning for resource allocation.

In Bahawalpur Region, the Parks & Horticulture Authority, Bahawalpur has been established under subsection (2) of section 3 of the Parks and Horticulture Authority Act 2012 by the Government of, the Punjab vide HUD & PHE Department Notification No. SO(UD) 1-31/2014 dated 16-04- 2014. PHA, Bahawalpur has the territorial jurisdiction of Urban Area of Metropolitan Corporation, Bahawalpur. In other districts and cities of Bahawalpur Regions, different levels of local governments work for public parks and green spaces.

Figure 13:
Organogram of
District Offices
Bahawalpur, RY
Khan and



Tehsil Councils

Figure 14: Institutional Set-up of Government Entities related to Environment and Green Spaces/Parks at different scales

1.3.3.1. Metropolitan Corporation, Municipal Corporation and Municipal Committee

The relevant functions of Metropolitan Corporation, Municipal Corporation and Municipal Committee as per Section 21 and Schedule 3 (Part I and II) of PLGA 2019 are as follows;

Box 1: Role and Responsibilities of MCs

Major responsibilities of Metropolitan Corporation, Municipal Corporation and Municipal Committee are;

- ▶ (a) prepare spatial plans for the local government including plans for land use and zoning;
- ▶ (b) approve spatial plans after due process of dissemination and public enquiry, incorporating modifications on the basis of such inquiry;
- ▶ (c) execute and manage development plans;
- ▶ (d) exercise control over land-use, land-subdivision, land development and zoning by public and private sectors for any purpose, including for agriculture, industry, commerce markets, shopping and other employment centers, residential, recreation, parks, entertainment, passenger and transport freight and transit stations;
- ▶ (e) provide, improve and maintain public open spaces, graveyards, public gardens and playgrounds;
- ▶ (f) enforce all municipal laws, rules and bye-laws regulating its functioning; (g) regulate affixing of sign-boards and advertisements except where this function is being performed by the Park and Horticulture Authority;
- ▶ (h) provide, manage, operate, maintain and improve the municipal infrastructure and services, including – (i) water supply and control and development of water sources; (ii) sewage and sewage treatment and disposal; (iii) storm water drainage; (iv) sanitation and solid waste collection and sanitary disposal of solid, liquid, industrial and hospital wastes; (ix) parks, playgrounds, open spaces and arboriculture;
- ▶ (k) prepare budget, revised budget and annual and long term municipal development programmes;
- ▶ (l) maintain a comprehensive data base and information system and provide public access to it on nominal charges;
- ▶ (z) establish and maintain libraries and reading rooms;
- ▶ (aa) conserve historical and cultural assets; and (bb) assist in the provision of relief in the event of any fire, flood, hailstorm, earthquake, epidemic or other natural calamity and assist relevant authorities in relief activities.

1.3.3.2. Town Committees and Tehsil Councils

The functions mentioned in the above section are same for Town Committees and Tehsil Councils under PLGA Section 21, Schedule 4 and 5 (Part I and II).

1.3.3.3. Parks and Horticulture Authority (PHA)

The PHA Bahawalpur covers 23 parks (52.81 Acres) and 54.8 Km of greenbelt of Metropolitan Corporation. The PHA is responsible for the following functions;

Box 2: Role and Responsibilities of PHA Bahawalpur M.Corp

Major responsibilities of Metropolitan Corporation, Municipal Corporation and Municipal Committee are;

- ▶ To streamline and bring about uniformity and integrated horticulture development approach for beautification of city
- ▶ Development and maintenance of new parks, roundabouts, triangles, green belts, green verges, central medians, playgrounds and open spaces
- ▶ Preservation of places of cultural and recreational importance
- ▶ Face lifting, landscaping, illumination and beautification of assigned areas
- ▶ Environmental improvements
- ▶ Establishment of food streets and recreational spots and annual festivals for recreation and promotion of culture
- ▶ Organizing community tree plantation campaign during spring and monsoon season
- ▶ To regulate outdoor advertisement activity in city
- ▶ Matters connected therewith, and incidental thereto, and such other functions as the government may assign to it from time to time

Climate Risks and Environmental Trends

1.3.5.1. Climate:

Bahawalpur Region has arid and hot climate with long summers when temperature rises to maximum between May to July, and lowest in December - February. The summer season starts from April and continues till end of the September. On the other hand, the winter is dry and chilly. The season starts from November and continues till February and Monsoon starts from the later part of June and lasts over the period of two and half months. The mean temperature ranges between 18 °C - 42°C during summer, and 6°C -29°C during the winters. The direction of wind is North-west in summers, and South-west in winters.

As per the 5th Assessment Report of the Intergovernmental Panel on Climate Change, the climate change risks are concentrated in urban areas of Punjab. Heat stress/Urban Heat Island (UHI), extreme precipitation, inland flooding, landslides, air pollution, drought, and water scarcity are some of them. The Climate Change Profile of Pakistan provides ranking of districts based on climate risks and hazards classification as exhibited in Table 4.

Table 5: District Level Climate Risk and Hazard Assessment Classification ¹¹

Rank	District	Flood Risk	Landslide Risk	Earthquake Risk	Tsunami Risk	Cyclone Risk	Drought Risk	Avalanche	GLOF Risk
108	Bahawalpur	2	1	2	-	2	3	1	1
45	Rahim Yar Khan	5	1	3	-	2	5	1	1
101	Bahawalnagar	3	1	2	-	2	3	1	1

¹¹ Chaudhry, Q. 2017. *Climate Change Profile of Pakistan*. Asian Development Bank, Philippines. doi.org/10.22617/TCS178761

Scoring Key						
	Very High	High	Medium	Low	Very Low	Non-Hazard
	5	4	3	2	1	-

The above table shows that flood and drought risks are much higher in Bahawalpur Region. All three districts (with Rahim Yar Khan at highest) have experienced heavy flooding in the past and are at a high risk of Floods. In Rahim Yar Khan, a number of Towns¹² including Rukkunpur, Abadpur, Bangla Icha, Bhong, Machka, Bangla Dilkusha, Kot Sabzal, Garhi Khair Muhamamd Jukh, Rahimabad, Garhi Dudu, Moza Faiz Abad, Moza Haider Abad, Basti Noor Muhammad, Basti Piran Shah, Basti Mahran, Basti Ada ghulam Haider, Basti Walahana, Mud Bolo, Basti Jahazi, Basti Icha, Basti Gopang and Basti Pahoran were badly affected due to floods. With inadequate storm and wastewater infrastructure in the districts, the situation can even worsen in the upcoming years.

1.3.5.2. Environmental Quality

Bahawalpur Region is facing immense urban challenges due to neglect of sustainability aspects with respect to the provision of infrastructure and municipal services. The impacts of climate change are also visible throughout the urban arena of Punjab and Bahawalpur Region is no exception to it. The present land use pattern in Bahawalpur is characterized by mixed land uses and unplanned growth of the city.

The inner cities of the region has become a highly congested Central Business District (CBD) and suffering from high level of air and noise pollution. The old water supply and sewerage system has become outlived and overflowing gutters are seen in the inner cities. Roads are fast becoming congested and the traffic delays and jams are quite frequent. The ground water aquifer which already contain brackish water is further being polluted with contaminants due to the sock pits being dug by poor people who do not have an access to the sewerage system. An unprecedented increase in the car ownership rate in Bahawalpur (like other cities of Pakistan) has caused a high level of air and noise pollution in the city in addition to traffic delays and increased number of accidents. The districts of Bahawalpur Region, specifically Bahawalnagar, and small cities of Bahawalpur and Rahim Yar Khan are at acute shortage of urban green spaces which could serve as oxygen factories and recreational facilities for the public.

Some of the major contributing factors along with the current state of districts are as follows;

► **Air Quality**

Air Quality Index is *moderate to unhealthy*, on average, throughout the region. Smog is visible in many parts of Bahawalpur District in winters. Major contributing factors could be;



Air quality index
Moderate to Unhealthy

Almost 25% of Punjab's Flour Mills, 19 large-scale industrial units such as Fuji Fertilizer Company Ltd., Coca Cola Beverages, Unilever Industries, Itehad Sugar Mills, Jamal Din Wali Sugar Mills, Humza sugar Mills, United Sugar Mills, Haleeb Foods Industries along with high number of food and agro-processing units are present in the region which are potential contributing to air and water pollution in Bahawalpur Region.

Road transport also plays a considerable role in the air pollution of the region. According to the FAO Report 2019, the major portion of total air pollutant emissions in Punjab are coming from the transport sector (269 GG). As per South Punjab Development Statistics 2020, there is 42% overall increase of

¹² itacec.org/document/flood/FLOOD%20SITUATION%20IN%20DISTRICT%20RAHIMYARKHAN.pdf

registered motor vehicles (including motor cars; jeeps and station wagons; motor cycles and scooters trucks; pickup/delivery vans; mini buses/buses/flying/luxury coaches; taxis; auto rickshaws; tractors and other vehicles, from 2014-2019, in Bahawalpur Region. Among the three districts, Bahawalnagar is on the top with 46% increase, followed by Bahawalpur (44%) and Rahim Yar Khan (38%).

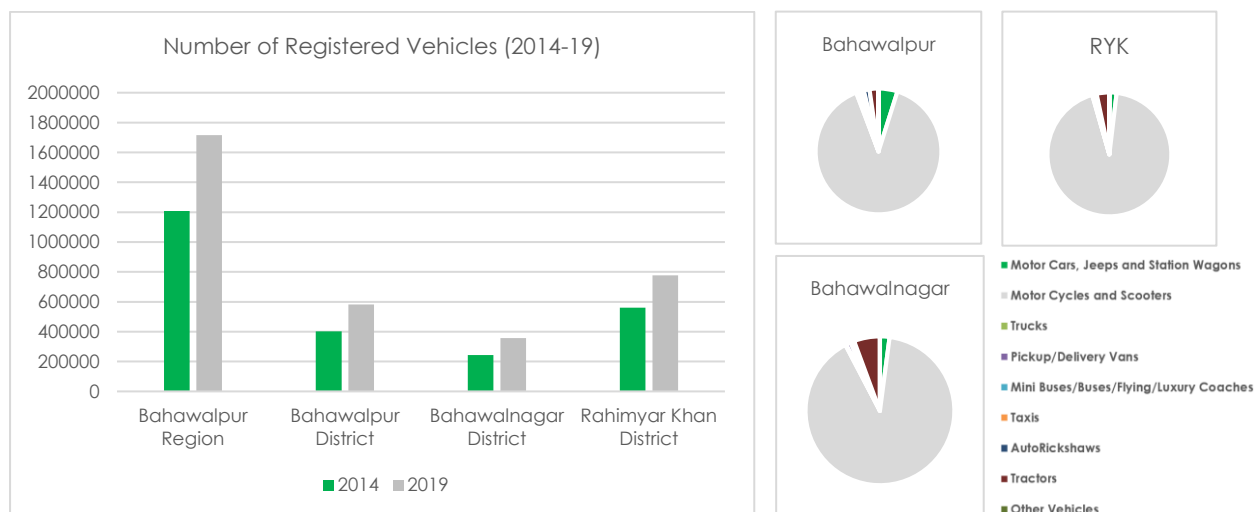


Figure 15: Percentage Increase in Number of Registered Vehicles in BWP Region (Bar Chart) and District-wise number and type of vehicles in all three districts

According to the Air Quality Life Index (AQLI), high particulate matter (PM 2.5) in the air is shortening the average Pakistani's life expectancy by 3.9 years annually, relative to what it would have been if the World Health Organization (WHO) guideline was met. Whereas unsafe water & sanitation may cut lives by as much as 1.2 years.¹³ Whereas, the index reported that the residents of Bahawalpur Region may live up to 1.93 years longer (on average) through effective policy implementation. AQLI 2021 Fact Sheet of Pakistan provides an analysis of Number of Years of Life Expectancy Gain through Reducing PM2.5 from 2019 Concentration to 30%, which is exhibited below;

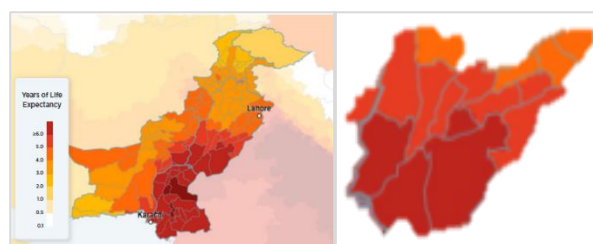


Figure 16: Potential Gains in Life Expectancy through Permanently Reducing PM2.5 from 2019 Concentration to the WHO Guideline in South Punjab

Table 6: Years of Life Expectancy Gain through Reducing PM2.5 from 2019 Concentration in Bahawalpur Region

Area	PM 2.5 Concentration ($\mu\text{g}/\text{m}^3$)	Life Expectancy Gain (Years) from Reducing PM2.5 from 2016 Concentration		
	2019	To WHO guideline of $10 \mu\text{g}/\text{m}^3$	To Punjab EQS of $15 \mu\text{g}/\text{m}^3$	By 30% Reduction
Bahawalpur	65	5.4	4.9	1.9
Rahim Yar Khan	70	5.9	5.4	2.1
Bahawalnagar	60	4.9	4.4	1.8

¹³ Pakistan Fact Sheet, September 2021. Air Quality Life Index. University of Chicago.

Latest data shows Average concentration in Bahawalpur district is 100ug/m³; Rahim Yar Khan 46 - 93ug/m³; and Bahawalnagar 93ug/m³ in comparison with PEQs concentration of PM 2.5 i.e. 35ug/m³. All three districts fall in highly to extreme polluted cities, as shown below;

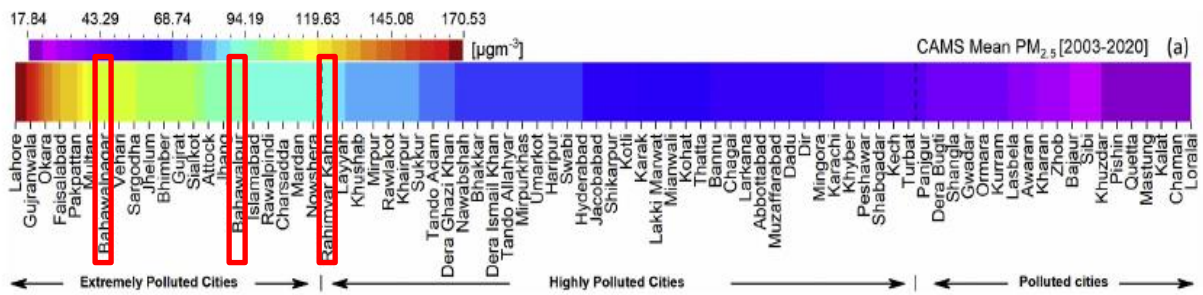


Figure 17: Mean PM 2.5 Concentration (2003-2020) in Bahawalpur Region and Overall Punjab

Brief profile of each district is as follows;

Air Quality Profile of Bahawalpur:

- Aerosol Index: Center and NE borders of Bahawalpur and slightly higher in southern part (desert area). Major sources could be traffic flow, construction of buildings, desert dust, burning and industrial activities.
- CO Hotspots: High in NE of Bahawalpur and gradually decreases in central part of district. Southern desert area showed minimum concentration. Major sources could be Vehicle emission, fire smoke and gasoline equipment.
- NO₂ Hotspots: Maximum in Northern area (National Highway N5), mainly due to vehicular and industrial emissions.

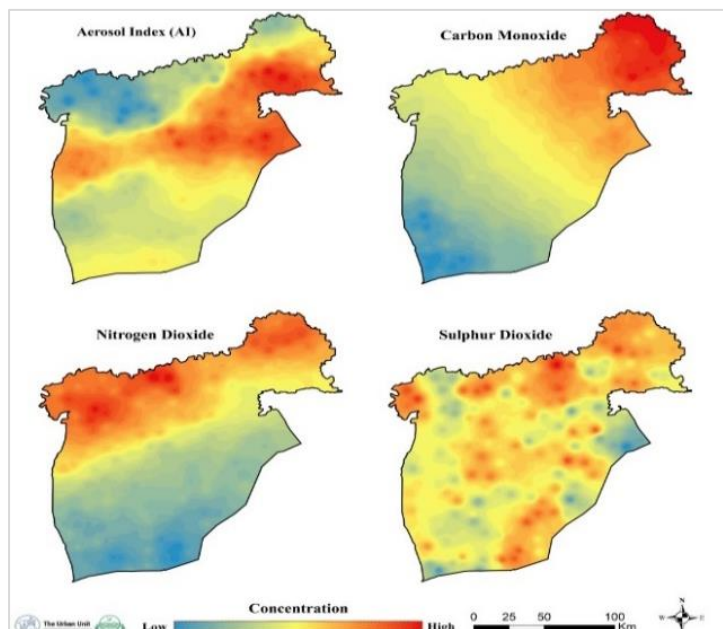


Figure 18: Air Quality Profile (Aerosol Index, CO, N₂O and S₂O) of District Bahawalpur

- SO₂ Hotspots: Small patches of high conc. spreads all over the district. Possible sources could be fossil fuel combustion, industrial emissions, and coal burning and metal smelting activities.

Air Quality Profile of Rahim Yar Khan:

- Aerosol Index: Aerosols are high in the south whereas low in the north western side of the city
- CO, NO₂ SO₂ Hotspots: These concentrations are higher in North West side of city.

Air Quality Profile of Bahawalnagar:

- Aerosol Index: Maximum in the South West part of the district and minimum in the north side.
- CO Hotspots: High concentration in north western side of the district and low in central and south side.
- NO₂ Hotspots: High concentration in north side of the district and low in southern side.
- SO₂ Hotspots: Few small patches of high concentration spreads all over the district. High concentration in south west is reported

▶ Noise Quality:

Limited data is available on Noise Quality of these three districts. Secondary sources reported higher noise level at busiest places of Bahawalpur cities like General Bus Stand, Farid Gate, One Unit and Husani Chowk.¹⁴ Similar case with other cities and towns of Rahim Yar Khan and Bahawalnagar Districts.

▶ Water Quality:

Limited availability of water resources

are present in the desert area of Bahawalpur Region. Tobas play an important role in desert and it also have socioeconomic and cultural importance. Desert Canal, Bahawal, Fordwah, Qaim, Panjnad and Abbasia are import fresh water resources.

Underground Water is mostly brackish and not fit for drinking and irrigation purposes. However, Water Quality Index showed that real problem is high concentration of Total Dissolved Solids in Bahawalpur District, followed by Bahawalnagar and Rahim Yar Khan, Similar pattern is observed for fluoride as well. High level of nitrates are confined in Bahawalnagar, whereas Arsenic is mainly reported in Rahim Yar Khan, followed by Bahawalpur and Bahawalnagar. A recent report by PCRWR reported 62% aquifer water as unsafe due to heightened arsenic contamination¹⁵.

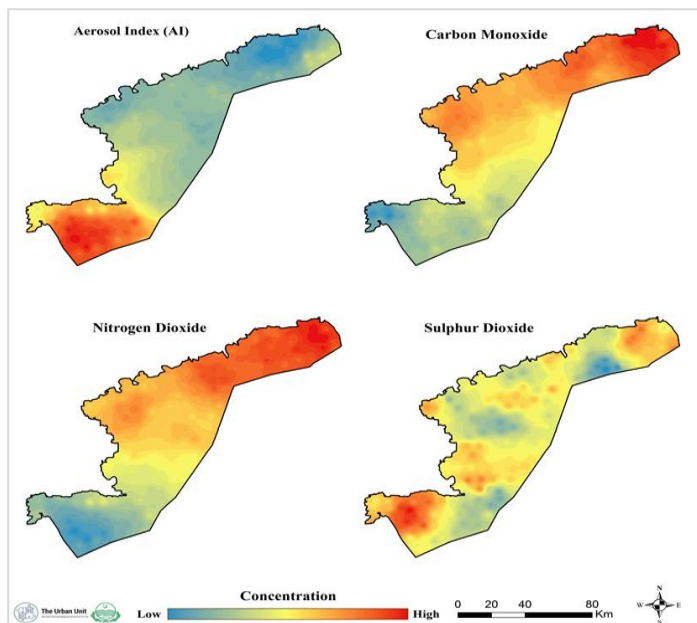
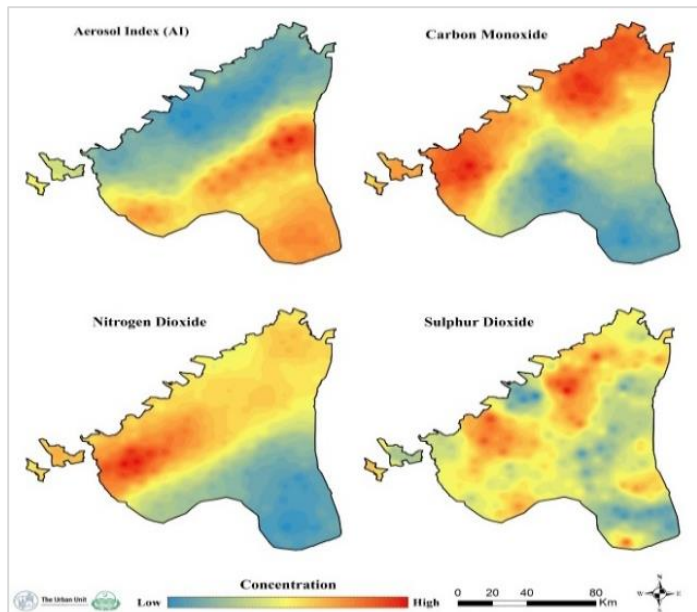


Figure 19: Air Quality Profile (Aerosol Index, CO, N₂O and S₂O) of Rahim Yar Khan and Bahawalnagar Districts

¹⁴ Source: ?

¹⁵ Express Tribune – Feb, 2021

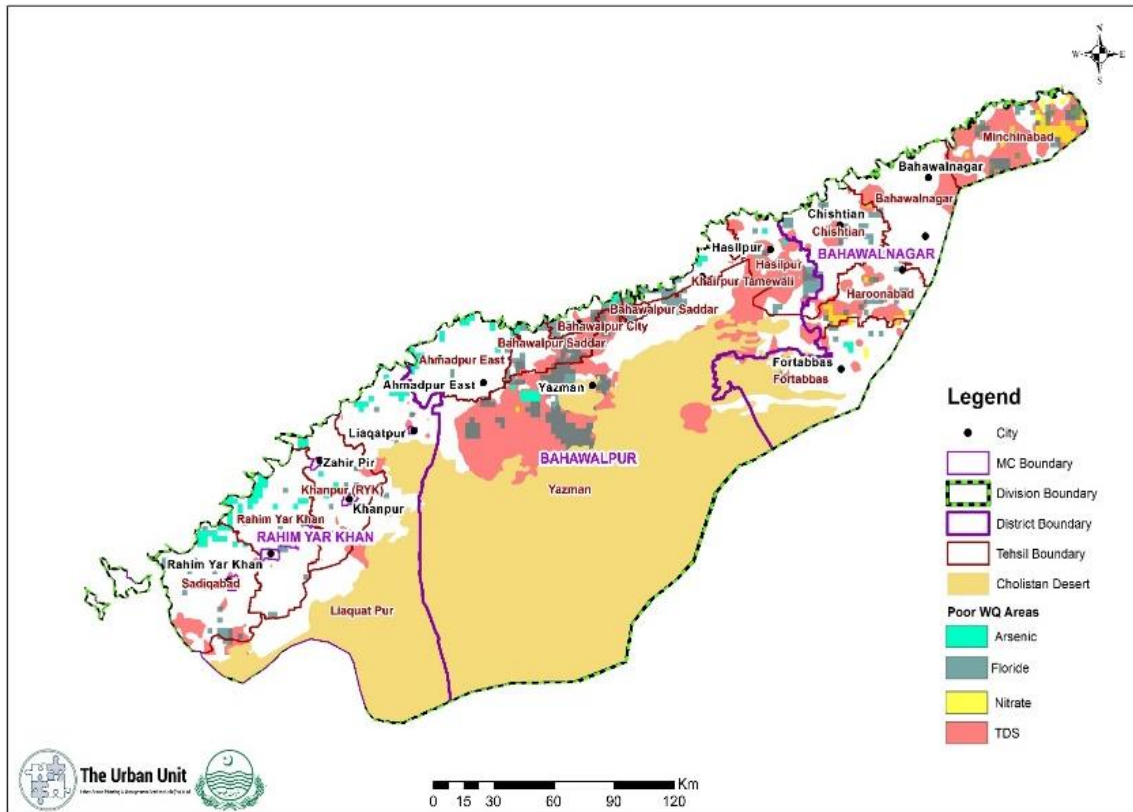


Figure 20: Water Quality Profile of Bahawalpur Region

Green Spaces / Open Public Spaces

Green spaces in the cities facilitate sustainable urban planning. Unplanned urban growth with limited green spaces / open public spaces are not even decreases the sustainability of the area but also negatively impact the citizen's health and well-being.

As per the data collected from the administrative departments, there are a total of **55 public parks** (113.41 acres land) currently present in Bahawalpur Region to cater its 11.46 million population.

Status of green spaces in all three districts and their existing state is discussed below;

► **Bahawalpur District:**

- The Parks & Horticulture Authority, PHA - Bahawalpur is working under subsection (2) of section 3 of the Parks and Horticulture Authority Act 2012 and has the territorial jurisdiction of Urban Area of Metropolitan Corporation, Bahawalpur.
- 23 Parks are currently under PHA Bahawalpur jurisdiction covering an area of 52.81 acres. Among which the large parks are Madar-e-Millat Park, Satellite Town (6.34 acres), Shahdra Park, Model Town B (5 acres), Farid Park/ Ladies Park, Model Town B near Saraiki Chowk, and Ilaichi Peer Park, Model Town C (3.27 acres), Children Park near University Chowk (2.51 acres) and Mango Orchard Park.
- 1 Nursery, 20 green belts (54.8 km) and 9 chowks are maintained by PHA Bahawalpur.
- 5 more parks are proposed by PHA and some exiting parks need rehabilitation.
- In other tehsils of Bahawalpur (Hasilpur, Khairpur Tamewali, Ahmadpur East and Yazman) limited parks are available. In Ahmedpur East, a big play ground / municipal football stadium is located which is used for sports and games by the local residents. Rehabilitation of this sport stadium is an on-going scheme (G.S. No. 487) for which Rs. 25.4 million are kept in the current year ADP.

Location of the existing and proposed parks by PHA are given in the subsequent figure.

- 8 Parks in Bahawalnagar district are present covering an area of 22 acres.
- 4 parks are un-developed and need proper development and provision of basic facilities. Whereas, rest of the 4 parks needs rehabilitation and provision of missing facilities.

Protected Areas and Biodiversity

Bahawalpur Region has a unique set of biodiversity and providing a number of ecosystem services. Details are as follows;

1.3.5.3. Cholistan Desert Range:

In Punjab, the total area under range management is spread over 240172 acres. Cholistan Desert Range is located in Bahawalpur, Rahim Yar Khan and Bahawalnagar districts of the south Punjab. This covers a total area of 2.7 million hectares. Ecologically these ranges fall in tropical arid sandy desert. The rainfall is in the range of 100 to 200 mm, and the mean minimum and maximum temperatures are 200 to 400 C, respectively. The drinking water for both the human and livestock is a major problem. Over the last one decade, the drought is a common phenomenon, which has both negative impacts on the ecology as well as on the animal production. *Prosopis cineraria* (Jand), *Salvadora oleoides* (Wan), *Calligonum polygonoides* (Phog), *Cenchrus ciliaris* (Dhaman), *Elionurus hirsutus* (Gorkha) are widely spread in Cholistan ecosystem. Important areas with tropical desert thorn forest also remain in the hyper arid regions of Thal and Cholistan.

1.3.5.4. Cholistan Wildlife Sanctuary:

In Cholistan desert, Punjab, an area of about 6,533 square kilometers has been declared as wildlife sanctuary inside the desert. Some of the rare animals of this region are the Desert Wolf, Indian Fox, Red Fox, Saker Falcon, Black-backed vulture and Saw Scaled Viper, etc.

1.3.5.5. Lal Suhanra National Park:

Lal Suhanra National Park is also one of the largest national parks of South Asia. It is situated in Bahawalpur district and spread over an area of 162,568 acres. It was established in 1972 for the conservation of native flora and fauna of Cholistan particularly Blackbuck, Chinkara, Blue bull and others. It is notable for the diversity of its landscape, which include areas of desert, forest and wetland.

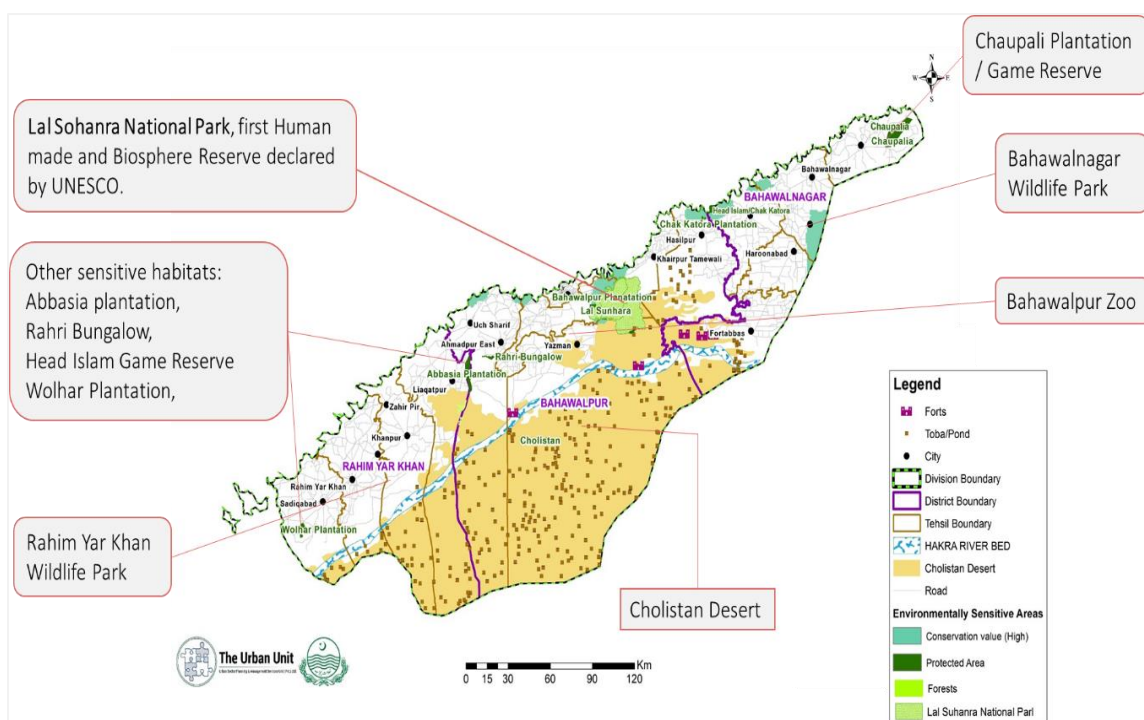
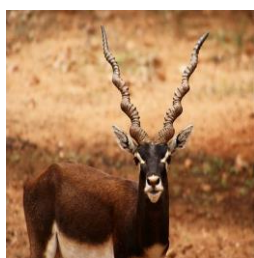


Figure 24: Environmental Sensitive Areas of Bahawalpur Region

The park itself is situated some 35 kilometers east of Bahawalpur and presents a synthesis of forest and desert life. It occupies land on both sides of Desert Branch canal, and is spread over an area of 127,480 acres (51,368 hectares) - out of which 20,974 acres are green land (irrigated plantations), 101,726 acres are dry land / desert, and 4,780 acres are ponds and lakes. The park's terrain is generally flat, interspersed with sand dunes measuring between 1-6m in height spread over thousands of acres piece.

Most of the floral diversity of the district is present in Lal Suhanra National Park. The Park is a protected reserve with 212 floral species which belong to 162 genera, and 50 families. Dicots are the most diverse group with 118 genera and 41 families of 158 species. Monocots are the second most diverse group with 5 families and 40 genera of 50 species.

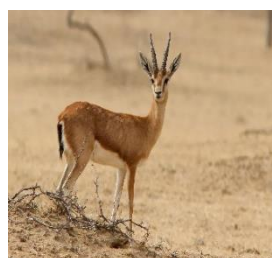
Among these animal species, Asiatic wolf, Chinkara, Chitra indica, Houbara bustard, and Great Indian bustard are the endangered species. According to the seasonal distribution of avian species, 76% are resident, 7% are summer breeders, 4% are passage migrants, and 8% are winter migrants. About 5% of rare avian species were also found. Most of the animal diversity is present in Lal Suhanra National Park¹⁶.



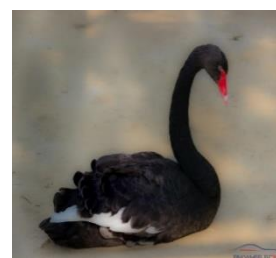
Black Buck



Houbara Bustard



Chinkara Deer



Black Swan

Figure 25: Key Fauna in Lal Suhanra National Park

Management objectives of the national park include; conservation of native fauna & flora species of Cholistan, particularly endangered one e.g. Chinkara, Blackbuck, Blue bull and others to ensure a sustained wildlife management of threatened wildlife species in the country. Encourage scientific studies on native flora and fauna species of Cholistan and to restore and improve native gene pool especially in Black buck, Chinkara and Blue bull.

Biodiversity of each districts is also discussed below;

► **Biodiversity of Bahawalpur District:**

- **Flora:** The most common flora present in Bahawalpur district, belong to families such as Fabaceae, Lamiaceae, Anacardiaceae, Solanaceae, Zingiberaceae, Arecaceae, and Papilionaceae¹⁷. Plant spices such as Caram, Chimber, and Jand are also found here¹⁸.
- **Fauna:** The most notable fauna found in Bahawalpur are Deer, Blue bull, Fox, wolf, Blackbuck, Jackal, wild cat, mole, rats, lark owl, Tamtri Pigeon, Bashin, Frog, Kala Mushki, Kharpa, Sangchoor, and Crow. Avian and fish species are found in the vicinity of Islam barrage in Bahawalpur. Most abundant fish are rohu, shinghara, dola, singhi, thaila, tilapia, sunni, and mali. The dominant avian species include *Passer domesticus*, *Egreta garzeta*, *Corvus splendens*, *Bubulcus ibis*, and *Authya ferina*¹⁹.

¹⁶ Ibid at 7

¹⁷ Afzal, S., Ahmad, H. I., Jabbar, A., Tolba, M. M., AbouZid, S., Irm, N. and Aslam, Z. (2021). Use of Medicinal Plants for Respiratory Diseases in Bahawalpur, Pakistan. *BioMed Research International*, 2021

¹⁸ Adnan, m. (2017). *Growth and changing structure of commercial centers in Bahawalpur city* (doctoral dissertation)

¹⁹ Ibid

▶ **Biodiversity of Rahim Yar Khan District:**

- **Flora:** The flora found in District Rahimyar Khan include *Acacia nilotica*, *Aerva javanica*, *Albazia lebback*, *Calotropus procera*, *Caparis deciduas*, *Casurina equicifolia*, *Dalbergia sissoo*, *Lycium edgeworthi*, *Maerua arenaria*, *Melia azedarach*, *Pheonix decteliferous*, *Prosopis cineraria*, *Prosopis juliflora*, *Salsola imbricate*, *Salvadora oleoides*, *Salvadora persica*, *Trianthema pentandra*, and *Ziziphys nummularia*, etc.
- **Fauna:** Jackal (Geeder), fox (Loomeri, badger (Bijjoo), also exist in the desert. Wolf locally known as Mahr is negligible now. Porcupine (seh), squirrel (GolhariFubhri) and jerbils musk rat Chhachhoondar), wild rat (Choocha) of brownish colour mongoose (Neola), are generally visible, mangoose has half a dozen of varieties in this area. Over 40 varieties of fishes are found in the district, Rahu, Thaila , Mori , Mullee , Khaga and sanghara are however found in abundance in river, canals and ponds. Black buck, blue bull, common duck, rhesus monkey, ring necked pheasant, common peafowl in Wildlife Park Rahimyar khan.

▶ **Biodiversity of Bahawalnagar District:**

- **Flora:** Trees such as Beri (*Ziziohys jajaba*), Shisham (*Dalbergia sissoo*), Karil (*Capparis aphylla*), Van (*Salvadora oleoides*), and Eucalyptus are native to Bahawalnagar. About 10,714 acres (0.49%) area of the district is comprised of forests. There is linear plantation of trees (2664 km long) along the roads, canals, and rails. The wild flora in Bahawalnagar comprises of 81 species which belong to 28 families. Poaceae is the largest family with 15 species, followed by Euphorbiaceae (8 spp.) and Amaranthaceae (7 spp.)²⁰. Many plant species are of medicinal significance as well.
- **Fauna:** The wildlife park in Bahawalnagar provides a habitat for White Swan, Common Peafowl, Ostrich, Black buck, Langoor, Rhesus Monkey, etc. Additionally, Cholistani cattle, beetal (goat), and Sahiwal buffalo, are also found there. Indian spiny tailed lizard, *Bactrocera zonata*, Whiteheaded duck, common Teal, and Nilgai are also native to this region.

1.4. Analysis of ADP Schemes

In terms of environment and climate change component, there is no specific schemes (on-going or new) for South Punjab. In general, South Punjab ADP (2021-2022) include Rs. 1,487.5 M budgeted schemes (on-going and new) related to environment which will enhance environmental quality of whole province.

The total capital and revenue cost of year 2021-2022 of on-going schemes 78.076 which include four schemes i.e. Capacity Building of EPA Punjab for Enforcement of Environmental Standards in Punjab including Combined Effluent Treatment Plants (CETPs) and Industrial Estates (IEs) under J&C Program; Development and Implementation of Plastic Management Strategy and Regulation on Production and Consumption of Single-Use Plastics (DLI-4, PGDP); Disclosure of Environmental Information and Citizen Engagement (DLI-3, PGDP); and Establishment of Environmental Endowment Fund Management Unit (DLI-8, PGDP).

Whereas, Rs. 1487.5 M are budgeted for 5 new schemes and 1 scheme under other development program. New schemes include Enhanced Air Quality Monitoring System in Punjab; Restructuring and Capacity Building of Environment Protection Department and other related agencies; Development of missing Environmental Quality Standards and revision of existing Standards; Enhanced Water Quality Monitoring System in Punjab; and E-Environmental Governance Initiative. These schemes are working on a broad spectrum and have long term positive impacts on the overall environmental governance.

Regarding, parks/playgrounds and green spaces, there are few on-going and new schemes under three sectors i.e. sports & youth and LG&CD and PHA. The on-going schemes which are part of current ADP

²⁰ Anwar et al., 2020

are (i) Construction of 7X7 Hockey and Football at Municipal Committee Park Ground, Khan Pur, Rahim Yar Khan; (ii) Rehabilitation of Park, Tanki Chowk, Uch Sharif, Tehsil Ahmad Pur East, Bahawalpur; and (iii) Development of Municipal Football Stadium, Tehsil Ahmad Pur East, Bahawalpur. Whereas, two new schemes are included i.e. (i) Establishment of two PHA Horticulture Nurseries at Bahawalpur city, and (ii) Eco Conservation / Preservation of Lal Sohanra National Park Bahawalpur.

Overall review of ADP schemes related to Environment, Climate Change and Parks/Playgrounds/Green spaces shows a vacuum which can be filled by addition of new schemes based on on-ground field survey, perception survey, and consultative meetings and through need assessment exercise. These schemes / projects are presented in Chapter 5 of this report.

Legal Landscape

The constitution of Pakistan has fundamentally altered the division of legislative powers between National and the Provincial Assemblies, resulting in increase in the extent of Provincial autonomy. After the approval of 18th amendment, powers have been delegated to the provincial Environmental Protection Agencies/Departments (EPAs/EPDs). International/national/local framework is as follows:

2.1. International Treaties and Goals

Sustainable Development Goals

Environment and Green spaces are central to the 2030 Agenda of Sustainable Development with strong linkages to many other Goals as exhibited below;

SDG 11 focuses on Sustainable Cities and Communities. Target 11.a asks to strengthen national and regional development planning in order to support economic, social and environmental links between urban, peri-urban and rural areas. Target 11.6 specifically talks about reducing air pollution and improving municipal and other waste management.

Similarly, **SDG 15** (Life on Land) aimed to ensure conservation, restoration and sustainable use of forests, wetlands, mountains and dry lands; and **SDG 13** (Climate Action) emphasis on enhanced resilience and adaptive capacity to climate-related hazards and natural disasters as well as integrating climate change measures into policies, strategies and planning.

International Treaties and Agreements

While there is no specific Multilateral Environmental Agreement (MEA) that aims to regulate forests or green spaces directly, there are several global conventions targeting certain activities related to forests and their environmental, social and economic aspects. Potentially the most important global conventions related to forests to which Pakistan is a signatory are the United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD) and the United Nations Convention to Combat Desertification (UNCCD).

2.2. National Laws, Policies and Guidelines

Pakistan Vision 2025

The Vision 2025 of Pakistan²¹ recognizes the importance of creative, smart and green cities for the economic growth and sustainable development of a region. It highlights climate change as a major threat, associated with increased frequency and intensity of floods, droughts, decline in biodiversity and key natural resources.

There is a renewed national consensus, as articulated in the manifestoes of all leading political parties, to commit major new resources through public and private sector collaboration in these areas and ensure required production and storage capacities. At the same time, efforts will be made towards conservation, efficient distribution and usage of resources, and preventing contamination and environmental degradation.

²¹ <https://www.pc.gov.pk/uploads/vision2025/Pakistan-Vision-2025.pdf>

Pakistan Penal Code, 1860

The Pakistan Penal Code deals with offences where public or private property and/or human lives are affected due to the intentional or accidental misconduct of an individual or body of people. In the context of environment, the Penal Code empowers the local authorities to control the individuals in light of the relevant laws.

Cutting of Trees Act, 1975

This Act prohibits cutting or chopping of trees without permission of the Forest Department. The act imposes fine or imprisonment or both, for illegal cutting of tree but has not mentioned any compensatory afforestation.

National Forest Policy Pakistan, 2001

The goal of this policy is to foster the sustainable development of Renewable Natural Resources (RNR) of Pakistan, through maintenance and rehabilitation of these essential resources and enhancement of sustainable livelihoods of rural masses particularly women, children and other deserving groups.

The components of the policy include reducing poverty, impact of socio economic factors and political interference in the department. Moreover, wildlife protection and irrigated plantations are important components as well.

National Environmental Policy, 2005

The National Environment Policy provides broad guidelines to the Federal Government, Provincial Governments and Local governments for addressing environmental concerns and ensuring effective management of their environmental resources. The main objectives of the Policy are conservation, restoration and efficient management of environmental resources. Moreover meeting international obligations and creating demand for environment through mass awareness and community mobilization. The national environment policy also gives sectoral guidelines on forestry, water supply and management, poverty and environment and climate change etc.

National Water Policy, 2018

The National Water Policy 2018 prioritizes the quality of the waters in rivers, reservoirs, canals or other water bodies to be as important as a case of national priority. This requires an efficient plan to tackle the agricultural drainage, municipal, rural and industrial wastewater treatment and safe effluent disposal.²²

Guidelines for Public Consultation

The Federal EPA provides these guidelines to deal with possible approaches to public consultation and techniques for designing an effective program of consultation that reaches out to all major stakeholders and ensures the incorporation of their concerns in any impact assessment study. These guidelines will be considered in public consultation of this project.

Guidelines for Sensitive Areas

Environmentally sensitive areas include, among others, archaeological sites, biosphere reserves and natural parks, and wildlife sanctuaries and preserves.

²² National Water Policy 2019, Section 21(1)

2.3. Provincial Laws, Policies and Strategies

Punjab Development of Cities Act, 1976 (“PDCA”)

The main aim of **PDCA** is to provide development of cities in the Punjab and to establish “a *comprehensive system of planning and development in order to improve the quality of life in the cities of the Punjab.*”²³ Clearly, *cities* are not inclusive of the rural area/region and this practice of overlooking of underdeveloped rural areas has resulted in their poor and worsening condition. The co-called *integrated approach* does not integrate the development of the rural and urban areas collectively and thereby results in the lack of any course for enforcing this or any other Regional Development Plan.

Despite this obvious gap within the law, interpretation of law purposively can be the key in solving this issue. Although there is no express initiative taken for rural areas or the Act misses the course of implementation of development plans (if any) we can use **section 7** to help our case. The GDA is already under the duty of maintaining comprehensive development planning of the region²⁴ and to also *co-ordinate its implementation by the Authority or Government Agencies within the area*²⁵. For more efficiency, GDA may formulate an Agency/Agencies and entrust to it such powers and functions as it may deem fit with the approval of the Government.²⁶

The Punjab Housing and Town Planning Agency Ordinance, 2002

The constitutional guarantees have been re-instated in the preamble of The Punjab Housing and Town Planning Agency Ordinance, 2002 (PHATA). PHATA aims at establishing a comprehensive system of Town Planning at provincial, regional, district, tehsil and union council level in order to ensure systematic, integrated growth of *urban* and *rural areas* in the Province of the Punjab.²⁷ This means that regional planning for both, urban and rural areas is the responsibility of the provincial governments and PHATA allots this under *section 4* of the Ordinance whereby sub-section 2 (xv) the relevant agencies are to formulate provincial land use policy, plan and prepare *regional development plans* (Inter district spatial planning – Master plans) for an integrated, coordinated and systematic planning.²⁸ However, the same Ordinance lacks the course that may be employed for implementation of these development plans and extensive studies that have been conducted by various government agencies such as Urban Unit at the instance.

Forest Act, 1927

This Act provides rules and regulations for the protection of forests, control of timber and other forest-produce transit, village forest and social forestry.

Punjab Plantation and Maintenance of Trees Act, 1974

The provincial government enacted this law in 1974 to regulate tree plantation and enforce measures for the **protection of tree plantations in the province.**

Punjab Local Government Act 2019

Environmental protection is devolving subject under Punjab Local Government Act 2019. The local governments may exercise such powers as are specified in the Fifth Schedule of Punjab LGA 2019.

²³ PDCA, preamble

²⁴ PDCA, Sec. 7(2)(I)

²⁵ PDCA, Sec. 7(2)(II)

²⁶ PDCA, Sec. 7(2)(XVI)

²⁷ PHATA Ordinance 2002, Preamble

²⁸ PHATA Ordinance 2002, sec. 4(2)(xv)

There appears to be no legal framework to ensure true implementation of such a Regional Plan other than mere instructions given to the local governments to take into consideration regional planning considerations (if any) while drafting their Local development and land-use plans in section 260 of the Punjab Local Government Act 2019.

The Punjab Wildlife Protection Act, 1974

The purpose of this act is to provide for the protection, preservation, conservation and management of wildlife in the Province of the Punjab. The act may be called Punjab Wildlife Act 1974 and it extends to the whole province of Punjab. This legislation creates a wildlife department and provides the protection to the wildlife.

2.3.1. Punjab Environment Protection Act, 1997 (Amended, 2012)

After 18th Constitutional Amendment in the Constitution of Pakistan, the Federal Ministry of Environment has been dissolved and subject of environment has been devolved over to the respective provinces. EPA Punjab has formulated its own act. The major content of the act is same as of PEPA, 1997. The Act is applicable to a broad range of issues. Penalties have been prescribed against those contravening the provisions of the Act.

2.3.2. Punjab Water Act 2019

“An Act to comprehensively manage and regulate water resources in the Punjab in the interest of conservation and sustainability”. The main aim of The Punjab Water Act 2019 was to ensure comprehensive management of all water resources in the Punjab by regulating their use in the interest of conservation and sustainability.

2.3.3. Punjab Growth Strategy 2023

The Punjab Growth Strategy, 2023 states the same mission and targets for “sustainable economic growth and attaining regional equalization.”²⁹ This strategy sees regional equalization as a precondition to attain sustainable growth and without a doubt this also aligns with Pakistan’s Sustainable Development Goals (SDGs) commitment.³⁰ Regardless of these, the absence of an implementation programme of Regional Development Plans is a glaring example of non-effective policy making by the relevant authorities.

2.3.4. Punjab Spatial Strategy 2047

It may be noted that the Punjab Spatial Strategy 2047 envisaged integration of regional and local development frameworks. The focus of this strategy has primarily been the planning hierarchy which duly deals with regional development frameworks. This shows the intent of the government which wants to progress with development as per the regional plans, however, lacks the effective course of doing so.

Punjab spatial strategy vision highlights the importance of clean environment which impacts the livability and public health of the community. Bahawalpur is one of the key areas under the spatial strategy which requires attention under the environment component. Moreover, Consistent effort to mainstream environmental concerns is key to a clean, green and climate resilient Punjab.

1.3.1 Punjab Environmental Quality Standards (2016)

²⁹ Punjab Growth Strategy 2023, preamble

³⁰ Sustainable Development Goals, SDGs No. 6, 10, 11, 12

Punjab has set the environmental standards for drinking water, ambient air, Industrial Gaseous Emissions, Motor vehicle exhaust and noise, Municipal and liquid industrial effluents, Noise and treatment of liquid and disposal of bio-medical Waste by incineration, Autoclaving, Microwaving, and Deep Burial. All these are relevant to the BRP project.

2.4. SUGGESTIONS

On thorough evaluation of the relevant laws and legislations, one finds a glaring vacuum for the implementation or enforcement of Regional Development Plans. Despite the scant mentions of Regional plans or Regional development within different legislations, there is a glaring need for a relevant Authority or any other provincial body that may duly set the parameters for the approval or implementation of Strategic Development Plans.

Following are a few suggestions that can be made to ensure effective implementation of this Regional Development Plan:

- ▶ The term Regional Development Plans or an appropriate course for its implementation has not been added to either the PLGO 2001 or the PLGA 2019. In order to provide legal enforcement of these Regional Plans, an amendment by way of addition to the powers and functions of local governments will be required. It is proposed that the words 'Regional Development Plans' other than the spatial plans be added to the powers and functions of Town Municipal Administrations under Section 54(1)(a) of the PLGO 2001 and/or Municipal Corporations under Third Schedule of the PLGA 2019.
- ▶ Secondly, it is proposed that the Local Government and Community Development Department (LG&CDD) may formulate and notify an Execution of Regional Development Plans Rules under powers to make rules conferred by the Section 191 PLGO 2001 and Section 310 of the PLGA 2019. These Rules will set out the process by which local governments may prepare, notify and implement Regional Development Plans and their execution for the local area (the area of jurisdiction of the local government).
- ▶ Moreover, it is proposed to interpret the Regional Development Plans as schemes. In PHATA the preparation of housing schemes and their notification is backed by a penalty if not abided by. If the above two suggestions are not viable then the most appropriate route is to interpret these regional development plans as schemes and under section 10 of PHATA the agencies formulating these plans could notify Government, attain their approval and then also expect to see implementation.
- ▶ As per the PLGA 2019, the implementing agencies at the level of local government include Metropolitan Corporation, Municipal Committee, Municipal Corporation and Town Committees and Tehsil Councils. In case, the Government does not approve the making of more Agencies then the most appropriate solution seems like empowering the already existing institutions. It is important that the Municipal Committee or the Municipal Corporations are made accountable for fulfilling their duty of enforcing and executing these Regional Development Plans and others to their letter and spirit.
- ▶ In case the government Authorities believe that their agencies will not be able to deliver the goods, it is advisable that they form public-private partnerships as directed under the Punjab Public Private Partnership Act 2019. It may be noted that one of the aims of this Act is to foster an enabling environment for private sector participation in development in the Punjab. Other than generating revenue, this partnership can also help in effective development of the region. For instance, the appointment of undertakers or using their services under contractual obligations can ensure the implementation of the Regional Development Plans as well. The penalty of not abiding by their contractual obligations will result in the private partners or the undertakers to fulfill their duties and this might help in actualizing this Development Plan.

Vision, Goals and Objectives

3.1. Vision

The regional plan of Environment sector aspire to have;

“A region, and communities within, secure accessible green spaces meet the needs of local residents and visitors whilst protecting and improving biodiversity and where natural resources are efficiently managed & conserved and where climate resilience, cleaner environment and recreational facilities are essential indicators for socio-economic growth of a region at macro (regional) scale.”

3.2. Goals

By 2031, it is likely that the population of Bahawalpur Region will rise up to 34.8%. This exponential growth will not even require new jobs and shelter, but also demand an effective planning for prosperous, resilient and competitive region for the benefit of all the stakeholders. Otherwise, it may influence the livability of cities, deteriorate environment, erode competitiveness between the districts and regions as well as compound regional disparity for progressive socio-economic growth.

While considering the prevailing state of environment in Bahawalpur Region and existing legal landscape discussed in chapter one and two, this regional plan of Environment sector (2021-2031) has following goals;

- ▶ Stimulate evidence based decision making by investing in highly feasible environment sector projects with spatial and regional linkages.
- ▶ Reduce the disparities between districts (and urban & rural areas) in terms of providing green spaces for women and children to enable interactions in a natural and safer environment
- ▶ Encourage public-private partnerships to finance and implement proposed service delivery options
- ▶ Improvement environmental quality and enhance resilience to climate change
- ▶ Increase institutional capacity for improved service delivery in the region

3.3. Core Objectives

This plan will help in prioritizing the development schemes at a regional scale based on the existing state and future growth requirements. The specific objectives of the plan are;

- ▶ Rehabilitate the existing green spaces in Bahawalpur region to raise the quality standards of all parks and green spaces to meet the needs and demands of local residents.
- ▶ Provide sufficient quality green spaces in appropriate locations in Bahawalpur Region
- ▶ Enhance overall state of environment of Bahawalpur Region
- ▶ Capacity needs assessment and project prioritization for improve livability and competitiveness of the region

Methodology

The regional plan of Environment sector was developed using participatory approach combined with the field visits of Bahawalpur Region and primary & secondary data analysis at local, regional and national level. The planning exercise involved all relevant key stakeholders (including local community) in identification of key projects, their timelines - short-medium-long term investment plan at district and regional level.

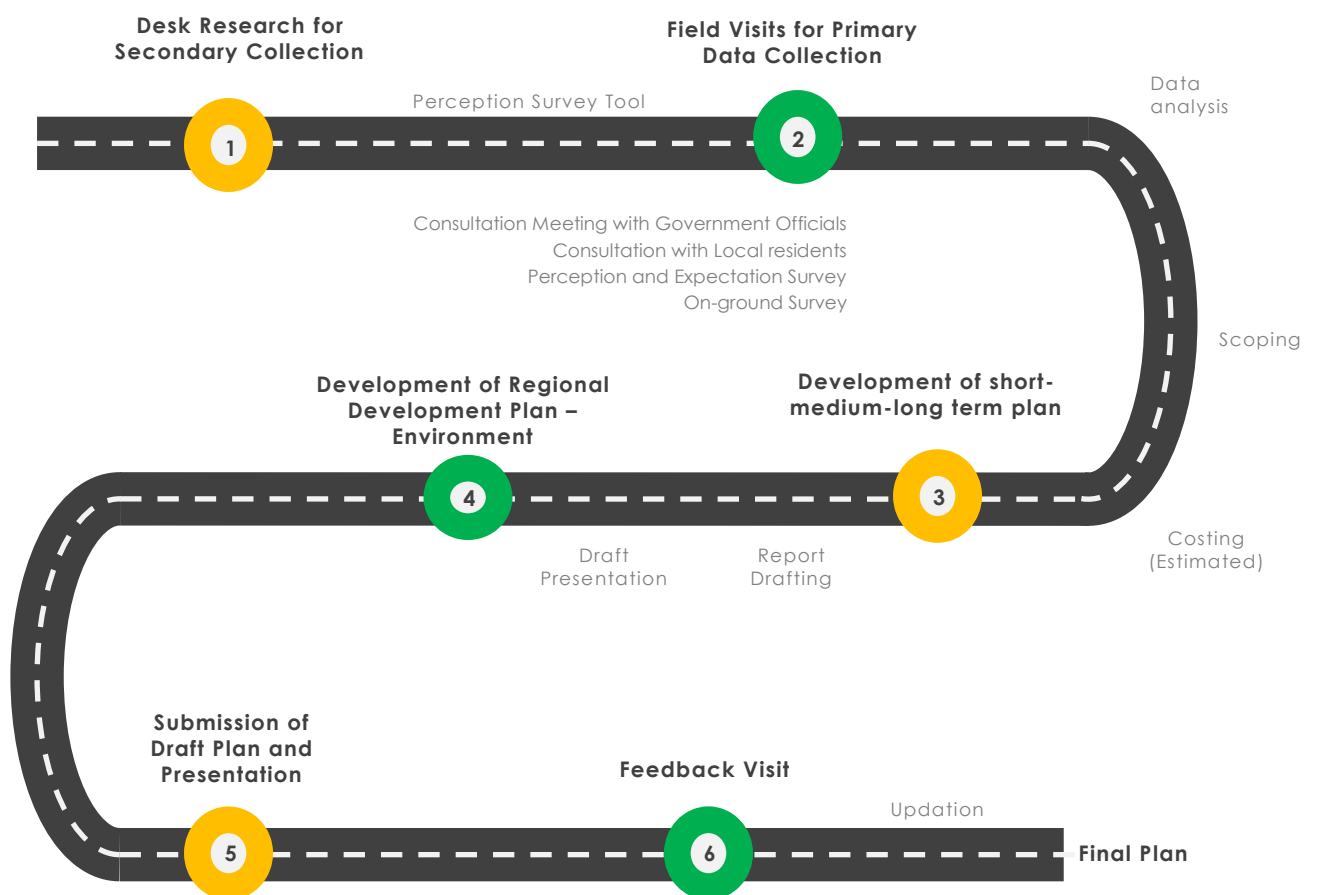


Figure 26: Methodology Map

4.1. Desk research

A comprehensive desk research was conducted in order to understand the state of environment in the Bahawalpur Region during the past decade. Existing legal landscape, administrative and institution set-up, South Punjab ADP Schemes, relevant reports and journals as well as similar projects executed

internationally were considered in the desk study. Number of projects and programs executed in the previous years for the improvement of environmental conditions and green spaces were also assessed.

4.2. Field Visits

For on-ground information, the planning team visited to the 3 districts of Bahawalpur Region i.e. Bahawalpur, Rahim Yar Khan and Bahawalnagar in September, 2021 for following tasks;

- ▶ Consultation Meeting with Government Officials
- ▶ Consultation with Local Residents
- ▶ Perception and Expectation Survey
- ▶ On-ground Survey of Parks / Green Spaces

The overall plan was to visit three districts of Bahawalpur Region for baseline assessment of existing urban green spaces as well as the environmental quality of the region along with proposed projects. Moreover, the plan includes multiple meetings with the stakeholders which include relevant government departments and local communities of the three districts.

Consultation Meetings with Government Officials

The team hold multiple meetings with the relevant stakeholders and explained the purpose of the regional planning exercise and facilitation required by the respective government officials. All officials have assured their full support in development of a realistic and attainable regional development plan.

▶ Meeting with DH PHA

DG PHA briefed that PHA Bahawalpur was established in 2014 and working since 2016. PHA has 98 regular employees, 81 daily wagers and major finance source is billboard/hoardings auctions. She highlighted that there are 23 parks in Bahawalpur which are under PHA however the current staff is not sufficient to manage them. Other than HR, water shortage and poor water quality are the major challenges in urban forestation process. Shortage of machinery, rental office building, Post care/monitoring, and soil replacements were other issues on the list.



Figure 27: Meeting with DG PHA, BWP

▶ Meeting With DO Environment EPA Bahawalpur

District Officer Environment, informed that they have very limited capacity in terms of HR and equipments. The office is dealing with multiple industries in the region such as sugar, cotton, fertilizer, geo thermal plants, food and beverages, steel industries etc. however, the basic field equipments are not available for measuring environmental quality. Provision of smoke meter and noise meter were their top priority.



Figure 28: Meeting with DO Environment, BWP

▶ Meeting With DD Forest and Wildlife Bahawalpur

Deputy Director Forest and Wildlife enlightened that the department is extensively working in upgradation of RYK and Bahawalnagar zoo. In this regard, 40 acre have been approved for Bahawalnagar zoo. He informed that enclosures of birds and animals along with landscaping work and water availability are the major requirements for Bahawalnagar zoo. Whereas, some areas also need better soil quality for plantation.



Figure 29: Meeting with DD Forest and Wildlife, BWP

▶ **Meeting with SDO RYK**

Meeting was also held with Sub-Divisional Officer, MC RYK regarding the available data, issues & challenges and priority projects. The SDO informed that they have limited HR, whereas IT related facilities are completely unavailable. Funds are direly needed to work on provision of green spaces for local residents.



Figure 30: Meeting with SDO, RYK

▶ **Meeting with AD EPA RYK**

Assistant Director EPA of Rahim Yar Khan informed that they have provided around 60 thousand trees to industries in collaboration with DC office & Forest department under billion tree tsunami project. Their laboratory is mainly working for waste water quality analysis of cotton, sugar, beverages, fertilizer units, flour mills etc. He highlighted that new recruitments, a dedicated office building and lab equipments are need of the hour. More emphasis was given to strengthen the existing lab as this laboratory is covering all three districts of the region.



Figure 31: Meeting with AD EPA, RYK

▶ **Meeting with DD EPA Lab**

Deputy Director Laboratory, RYK informed that the lab can monitor 10 parameters of waste water. The lab doesn't have the capacity to monitor heavy metals, for which samples are send to district HQ Lahore. He further added that the lab has only two equipments for air quality monitoring, whoever both of them are not operational. The lab also conduct seasonal monitoring of sugar industries.



Figure 32: Meeting with DD Lab EPA, RYK

Consultation with Local Community

In order to ensure sustainability of the plan and better understanding of the existing issues and challenges, the team visited the different areas of all three districts. The community members actively participated in the dialogue and well explained their issues and possible solutions along with their priorities.



Figure 33: Public Consultations

In addition, a meeting was conducted with the Principal of a private school of Rahim Yar Khan in which role of academia and local community was discussed thoroughly. The Principal explained that their school have extensively engaging the students and teachers in tree plantation activities. Recently, the school has added greenery on the barren (dusty) land facing school, by their own resources. He emphasized that government departments should engage private schools in such activities which have long term benefits for the whole community.



Figure 34: Consultation with Private School Principal, RYK

Perception and Expectation Survey

In an attempt to record perceptions and attitudes towards urban green spaces as well as their willingness to pay for these services, a survey was carried out with the help of a survey tool.

Green space provides a wealth of benefits associated with recreational, environmental and therapeutic elements of the society, including women and children. Considering the fact that men and women perceive and value the characteristics of urban green spaces differently, as both have different sensitivities and expectations, a survey performa was developed.

This tool was used to get women’s perceptions towards urban green spaces in Bahawalpur Region. The data was analysed and the results were considered in prioritization of need based development projects (short-medium-long term).



Figure 35: Perception Survey

On-ground Survey

The team also visited various public parks, zoos/wildlife parks as well as underprivileged areas of each district.



Figure 36: Field Visit Pictures

These surveys were helpful in understanding the actual condition of the public parks / green spaces; state of the environment and the underlying issues and challenges.

4.3. Development of short-medium-long term plan

Based on the exercise discussed above, schemes / projects were identified and prioritized for each district. This ten year plan provides short term (up to 3 years), Medium Term (3 to 6 years) and long term

(up to 10 years) projects focusing on improved service delivery, better environmental quality, enhanced climate resilience along with increased economic growth of the region.

4.4. Development of RDP Bahawalpur

Finally, a sectoral plan for Environment component was developed for Bahawalpur Region with a comprehensive investment Plan for the period of 10 years (2021-2031). Each project contains its title, cost, category (short/medium/long term) and mode of investment (Government / Donor / PPP).

4.5. Feedback visit

Consultation is an essential step to engage the multi-stakeholders and get their feedback and ownership in finalizing the project digest for the Bahawalpur Region. Therefore, a feedback visit will be conducted for final consent from the relevant department before submitting it to the Planning and Development Board, Government of Punjab.

Regional Development Plan

5.1. The Framework:

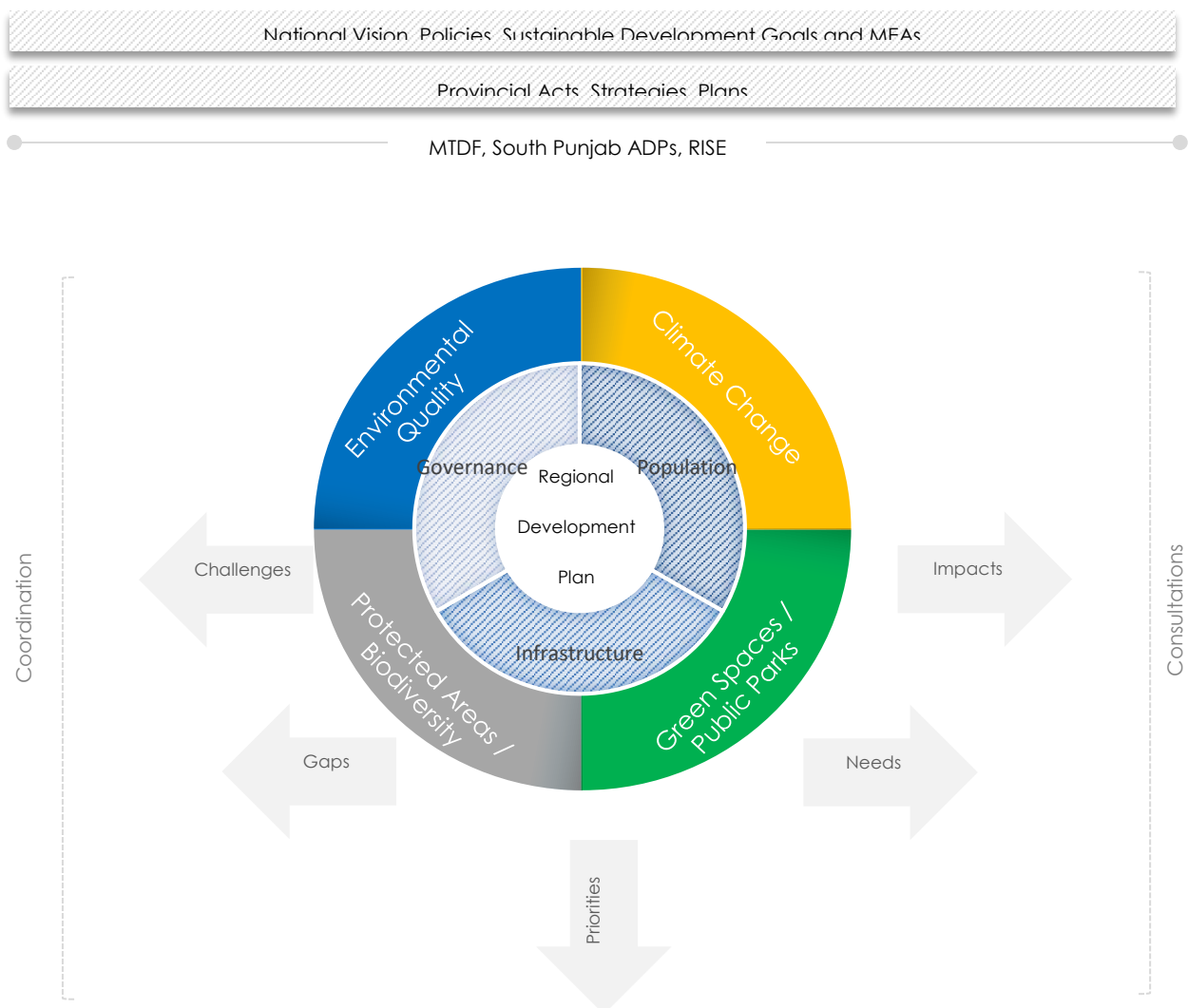


Figure 37: Framework of Regional Development of Bahawalpur –Environment Component

In recent years, the Government of Punjab has taken a lead in developing a series of regulation/policies/strategies/initiatives that address the need for regional development in within the province. These policy tools are specifically targeting the dominant issues of Punjab such as rapid urbanization, unreliable service provision, low municipal service recovery, high environmental pollution and so forth. As public spending in the province is based on administrative jurisdiction i.e. division (region), districts and tehsils, it is a dire need to consider spatial and socio-economic dimensions for improved service delivery and environmental sustainable development at a macro scale.

Hence, the current framework for Environment Sector of Regional Development Plan of Bahawalpur reflects international commitments like SDGs; national vision and strategies; provincial acts/strategies/policies/Programs as well as the Medium Term Development Framework, Annual Development Programs and recently approved Responsive Investment for Social Protection and Economic Stimulus (RISE Punjab).

While keeping all the aforementioned guiding documents; vision, goals & objectives; the Environment' Framework and Institutional set-up & capacity building are designed. Whereas, each component of the plan is passed through a lens of existing infrastructure, governance and population factor in order to identify the present challenges, risks, gaps, needs and priorities for future economic development. Comparative advantage is gained by using credible mapping resource and Geographic Information Systems (GIS) for spatial representation of relevant data along with current state of environmental conditions. Consultation is another keystone of the RDP drafting process which is done through meetings, data collection forms, field visits, planning exercises and feedback sessions.

Finally, the framework resulted in enlisting the priority projects at district level which are consolidated as one broader plan/project digest of Bahawalpur Region.

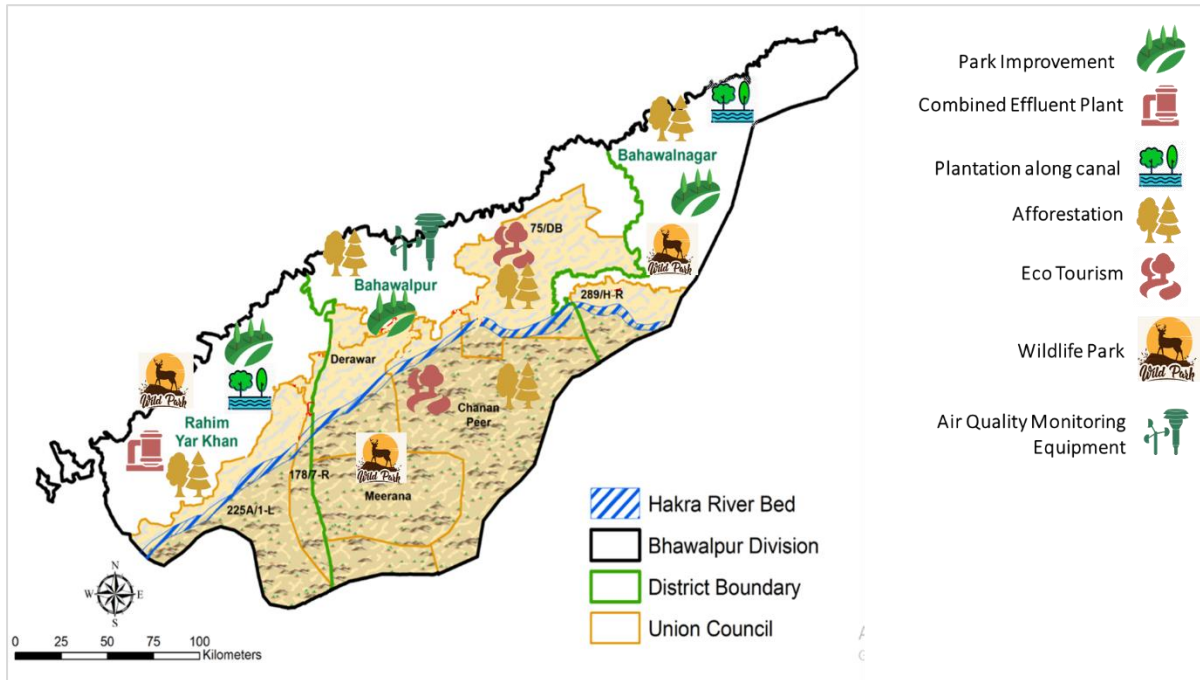


Figure 38: Proposed Interventions in Bahawalpur Region –Environment Component

5.2. Perception Survey

Urban green space covers parks, gardens and other green areas which play a significant role in improving the quality of urban environment, provide opportunities for relaxation, recreation, association and social interaction as well as clear air, water and soil and by stabilizing urban temperatures and the urban climate. In addition to that, urban green spaces improve the quality of life in cities enhancing their attractiveness to residents, employees, tourists, investors and firms. On these grounds urban green space can have a positive contribution to the competitiveness of places and their economic development.

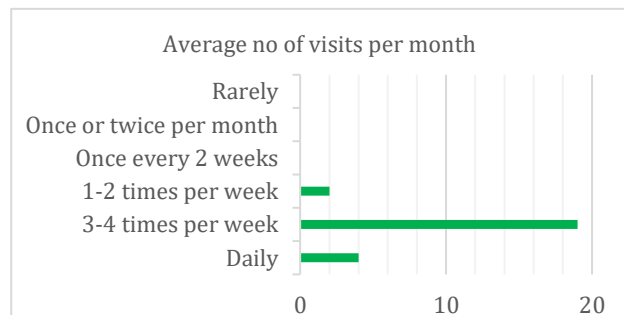
Keeping in view the context, a survey form was developed to examine the attitudes and perceptions of women towards various aspects of existing and prospective green spaces. This survey helped in exploring a number of issues with reference to the necessity, quality, and attractiveness along with their willingness to pay for these services.

The empirical analysis of the survey helped to conclude the perception and expectation of women’s regarding urban green spaces. Details are as follows;

Q1: How often on average have you visited your local greenspace areas in a month?

Visits to the public parks are very common in the cities as the residents do not have any other recreational places.

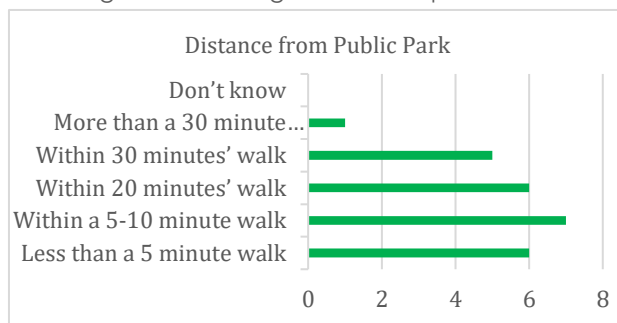
Family Park and Ladies Park in Bahawalpur and RY Khan are frequently visited by the women.



Q2: How far away from your home is your nearest greenspace area?

Most of the women who visit those parks are nearby residents (5-10 mins walk). However, for some, it took 30 or more than 30 mins to reach to the park due to non-availability of such green spaces in their areas. Due to such limitations, the parks is usually crowded all the day, specifically in the evening time and on weekends.

Figure 39: Average no of visits per month



Q3: In case green spaces are far away, how do you usually travel to visit their (means of transport)?

Those who are living 5-10 mins away from the park visit the place by walk. Rest use motor bike and car to reach to the venue.

In addition to that local community highlighted the fact that the only possible reason of frequent visit to green spaces / parks is their nearby location.

Otherwise, respondents considered distance to be a barrier for using such spaces due to limited accessibility.

Figure 40: Distance from Public Park

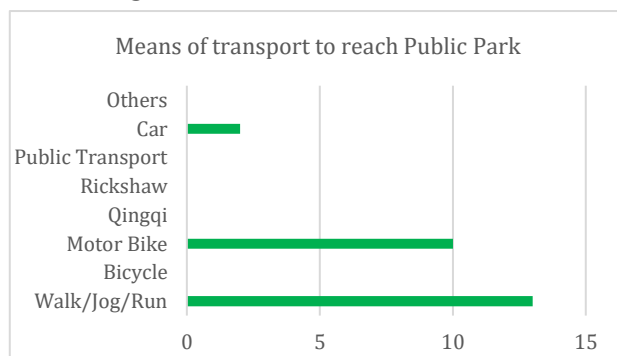


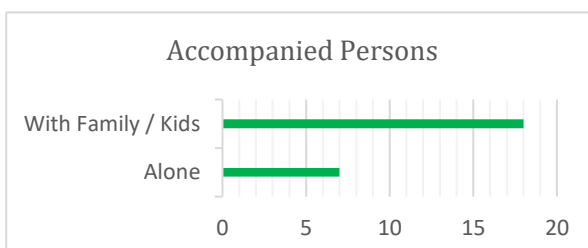
Figure 41: Means of transport to reach Public Park

The people living in far areas, usually use motorbikes or cars to reach public parks for recreational purposes which again compromise their cost, time, pollution and frequency decay

Here, it is important to mention that only few ladies parks are available in Bahawalpur Region, for instance, two Ladies Parks in Bahawalpur City and one in Yazman Tehsil; one ladies park in Bahawalnagar and Rahim Yar khan. Similarly, one Family Park in Bahawalpur, three in RY Khan and total two Children Park in Bahawalpur District (one in main city and the second one is in Khairpur Taimwali Tehsil), one in Bahawalnagar and three in RYK districts.

Considering 24.64% of total population of Bahawalpur Region which lives in urban areas and 48% of female population, the number of parks in the Bahawalpur Region are significantly low.

Q4: Do you come alone or with others?



Mostly people who visit Family/Children/Ladies Park come along with their family members, especially with kids. According to Institute of Global Health, such green spaces significantly benefit children's physical, mental and social development. Similarly, men, women and older age people living in neighborhoods with more green space have reported to have a better general health, more life satisfaction, and less stress. Moreover, higher exposure to green space has been associated with a lower risk of cardiovascular disease such as diabetes. Keeping in view the health and social benefits of green spaces, the number of parks and green areas are not sufficient to meet people's need.

Q5: Why do you visit these green spaces? (Why are public parks and green spaces important to you?)

Green space is clearly a leisure opportunity for all age group as concluded from the survey. People mostly visit green areas / parks for relax and unwind, community engagements/ meetings, physical activity, fresh air/enjoying the nature, etc.

Respondent also emphasized on the fact that they travel from a faraway distance to the Ladies/Children/Family Park because they do not have any other place for amusement or the parks in their vicinity are few and in miserable condition.

Q6: What are the major issues you found in these green spaces / public parks?

Non-availability of drinking water, toilets and tuck shops, security / safety issues, insufficient lighting, long distances, poor condition or missing facilities for playing and other infrastructure were the top concerns.

As well maintained green spaces make a significant and valuable contribution to the quality of life, provide spaces for biodiversity and enhance the overall environment of the region, therefore, such concerns need urgent attention from the relevant authorities.

Q7: Please rate the condition of the play equipment or courts and other infrastructure of the public parks.

Majority of parks have broken playground equipments. The metal swings and slides are breaking. Loosen or broken strings of swings, holes in slides, creaking sound from the welded part of the swings, holes in the swings are common in almost

Figure 42: Accompanied Persons

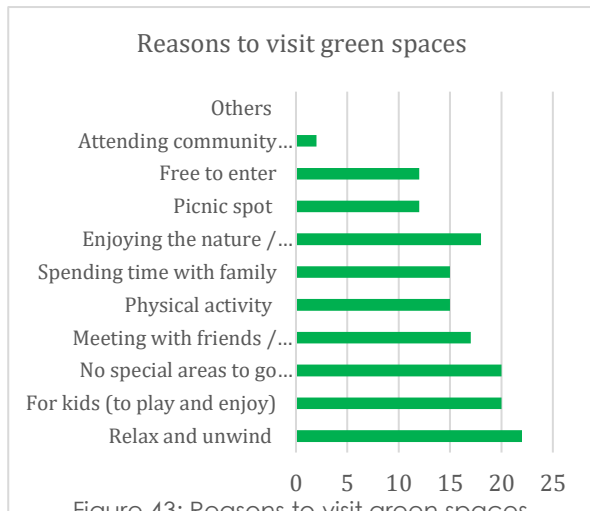


Figure 43: Reasons to visit green spaces

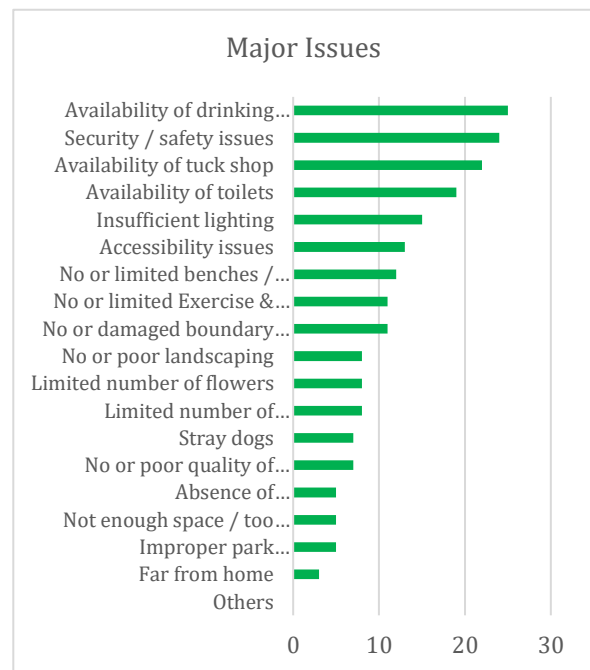
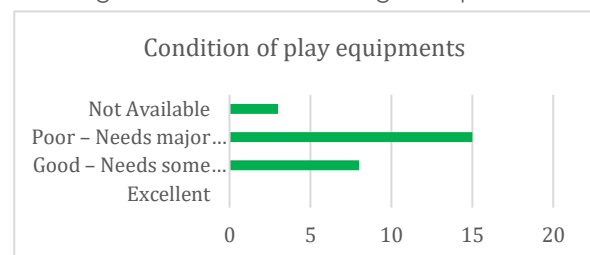


Figure 44: Reasons to visit green spaces



all the parks. Despondently, most of the broken metals have sharp edges which is cause injuries to the kids, as reported by the mothers. Hence, the non-availability or poor condition of play equipments in playground has overweight the danger of an injury than its positive impacts.



Figure 45: Existing state of broken play equipments

Similarly, respondent’s highlighted poor conditions of parks infrastructure like wrecked boundary walls and gates, damaged benches, impaired tracks, courts and fields, etc. Some of the respondents also reported missing or limited infrastructure another crucial issue.

Q: Community participation / Community engagement

Local community embody a critical resource for maintaining and improving its quality through traditional knowledge, needs and priorities. It is reported in the literature review that the local community who have been involved in managing urban green spaces / tree plantation activity are more sustainable than without participation.³¹ However, the respondents informed that no such community engagement program are offered in the past.

Q: Willingness To Pay (WTP)

Another important part of this survey was to determine a hypothetical value to measure willingness to pay or willingness to accept certain monetary value non-marketed natural and environmental resources i.e. green spaces or parks.

On inquiry about their willing to pay certain fees and charges for the provision or improvement of green space such as entrance fee, etc. majority of the

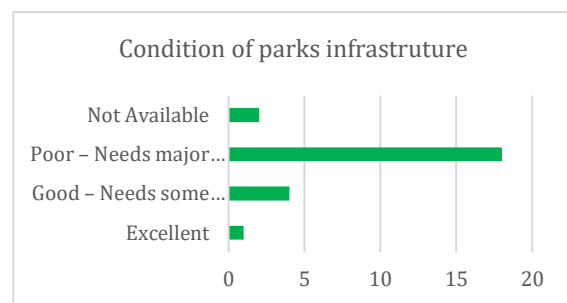


Figure 46: Condition of parks infrastructure

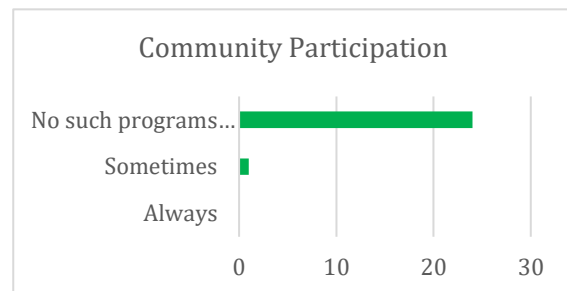


Figure 47: Community participation

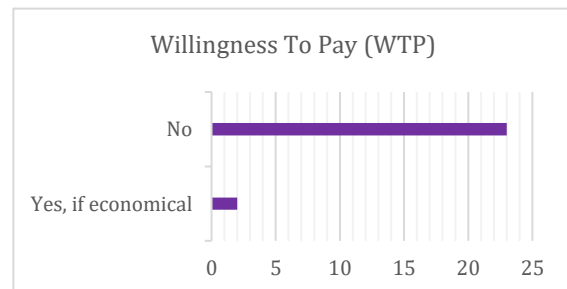


Figure 48: Willingness to pay for urban green spaces

³¹ Riaz, A., A. Younis and S. Naveed. 2012a. Impact analysis of urban and rural landscapes as perceived by respective communities: a case study of Faisalabad city, Pakistan. *Acta Hort.* 954:99-107.

respondents answered in “No”. The respondents argued that it is a government responsibility as the citizens are paying tax for urban services. Some of them affirmed it as a basic right, while some share the fear of embezzlement of public money. Those who have answered in “Yes” is willing to pay less than or equal to 10 Rupees.

Box 3: Survey Findings / Conclusion

- ▶ The perception survey provides evidence of a strong demand for urban green spaces in Bahawalpur Region. The results indicate a limited quantity and poor quality of the urban green spaces, specifically for women and children.
- ▶ Secondly, the preferences of the people are much higher for well-maintained public parks in their vicinity.
- ▶ Thirdly, the results of the analysis clearly states that the local authorities should primarily bear the costs of urban green improvement and its provision. Contrary, those who are willing to pay can contribute a small share of their income for the enhancement or provision of green spaces.
- ▶ Hence, these findings have important implications on citizen centric development approach and demands for sustainable solutions on priority basis.



5.3. Project Digest / Investment Plan

Based on the framework of regional development plan, desk review/secondary information, on-ground survey, perception and expectation survey, consultations with local community and meetings with local authorities, a Project digest is developed for Bahawalpur Region, which can also called as Investment Plan. These projects are divided based on their urgency / priority for a ten year span and divided in to short, medium and long term.

Another important consideration was to compare existing area (m²) of urban green space of Bahawalpur Region with World Health Organization - WHO guidelines³² (as no reference is available at local, provincial, or national scale in Pakistan) and determine the green space per capita.

Considering the total urban population of Bahawalpur Region, **0.16 m² green space (Parks and Green Belts) per capita is available as compared to the recommended area of 9 m².**

Further analysis revealed that 6282 acre land is required for green spaces to meet the 9 m²

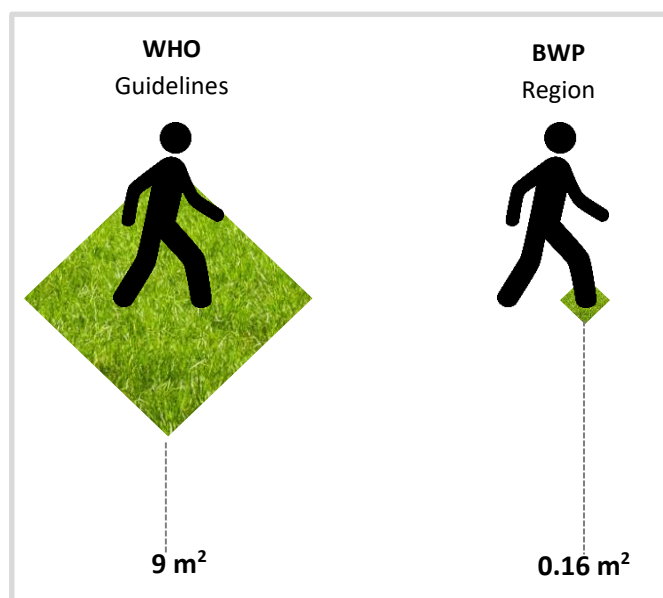


Figure 49: Green Space per Capita in Bahawalpur Region as compared to WHO guidelines

³² World Health Organization. 2021. Health Indicators of Sustainable Cities in the Context of the Rio+20 UN Conference on Sustainable Development. WHO; Geneva, Switzerland.

standard. **Currently, the region has ~110 acre for such spaces which is significantly low.**

The total cost of the environmental sector project digest for Bahawalpur Region is Rs. 2,344 million.

Bahawalpur District

The following projects and investments are proposed on short (up to 3 years), medium (3 to 6 years) and long-term (up to 10 years).

5.3.1.1. Short Term (up to 3 years) estimated

A short term plan of Bahawalpur district mainly involves rehabilitation of existing parks and green belts along with construction of PHA complex and Horticulture Academy , etc. for which rough cost estimates are Rs. 467 million. The plan is as follows;

Table 7: Short Term Plan for Bahawalpur District

Sr. No.	Proposed Projects	Government Entity	Rough Cost (PKR million)	Mode
1.	Upgradation and Provision of Missing facilities in 10 parks of Bahawalpur city i.e. (i) Jinnah Park, (ii) Shahdra Family Park, (iii) Millad Park, (iv) Trust Colony Park, (v) Tanki Wala Ground, (vi) Railway Park, (vii) Al-shams Park, (viii) Royal City Park, (ix) Madar e Millat Ladies Park (x) Gulzar -e- Sadiq Park	PHA	40	ADP
2.	Construction of PHA Complex in Bahawalpur city	PHA	120	ADP
3.	Establishment of a green building for Horticulture Academy of Bahawalpur	PHA	100	PPP
4.	Purchase of Machinery & Vehicles for PHA	PHA	32	ADP
5.	Eco-conservation/ Preservation of Lal Sohanra National Park	FW&F	120	ADP
6.	Rehabilitation of Green Belt (i) Hussaini Chowk to Baghdad Police Station Chowki (ii) Commercial Area of Satellite Town Bahawalpur (iii) One Unit Chowk to Hussaini Chowk	PHA	30	ADP
7.	Procurement of 5 Potable Air Quality Sensors	EPA	25	ADP
Total			467	

5.3.1.2. Medium Term (3 to 6 years)

A medium term plan of Bahawalpur district of Rs. 210 million is as follows;

Table 8: Medium Term Plan for Bahawalpur District

Sr. No.	Proposed Projects	Government Entity	Rough Cost (PKR million)	Mode
1.	Construction of New Parks: (i) Children Park in Model Town - C Block (ii) Ladies Park at Satellite Town - C- Block (iii) Ghazali Park Near Welcome Chowk (iv) Iqbal Park in Behari Colony (v) Al Badr Park Behari colony	PHA	50	ADP
2.	Provision of fun land with indoor gym and boating lake	PHA	10	PPP
3.	Upgradation and Provision of Missing facilities in all parks of Yazman Tehsil	MC, BWP	10	ADP
4.	Construction of Linear Park at Kanjoo Chowk and	PHA	10	PPP
5.	Replacement of Conocarpus (Trees) in different Medians of City Area (PHA) and other areas of district (MC)	MC, PHA	5	ADP
6.	Afforestation in Rahri Banglow Plantation	FW&F	10	ADP
7.	Development of Green Belts along all main roads of Bahawalpur District	PHA	70	ADP
8.	Afforestation in open spaces/improvement in green spaces of Yazman and Hasilpur Tehsils	MC, BWP	15	PPP
9.	Afforestation in open spaces of Bahawalpur city (500 acre)	MC, BWP	30	ADP
Total			210	

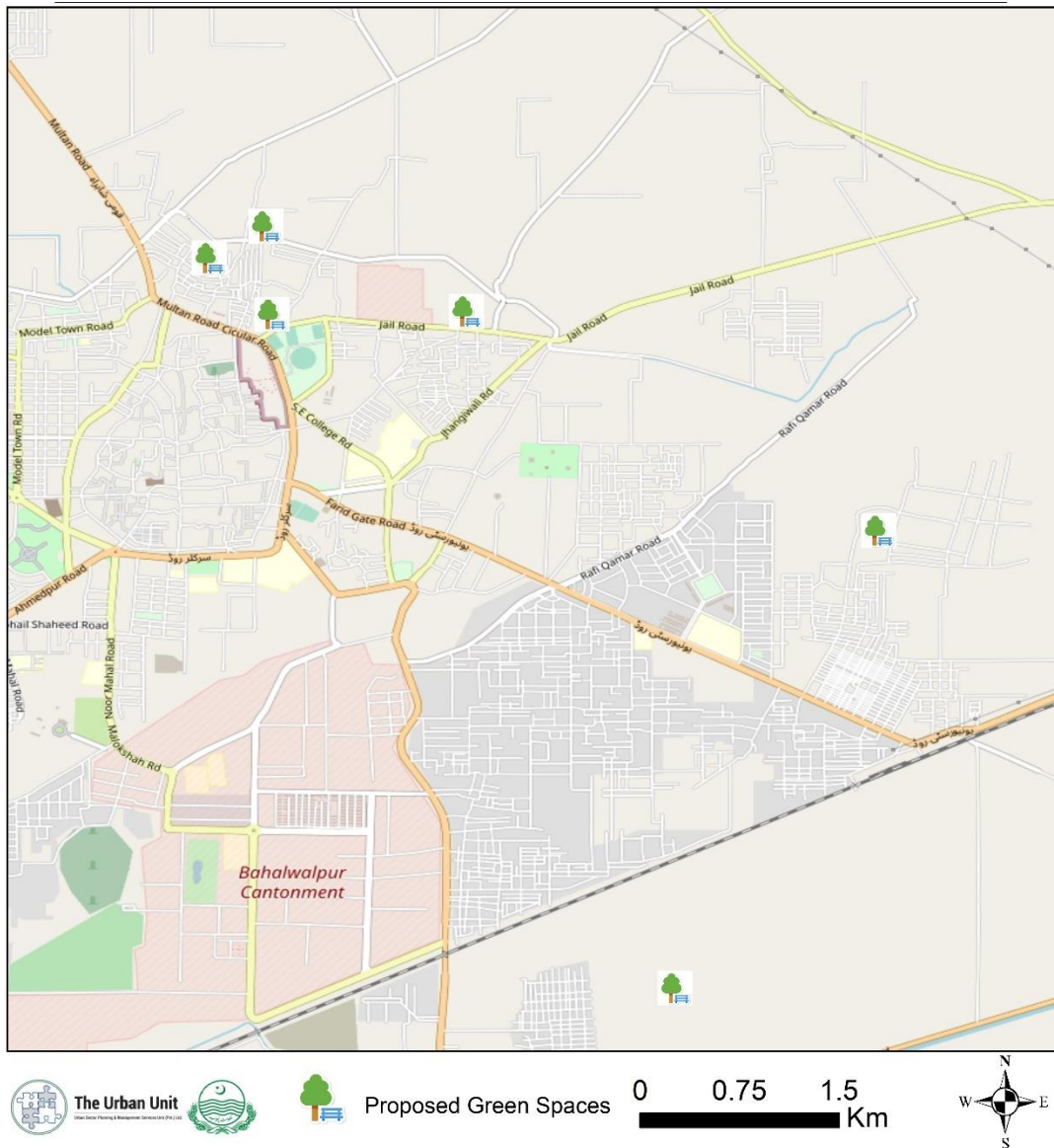


Figure 50: Proposed areas for Green Spaces in Bahawalpur District

5.3.1.3. Long Term (up to 10 years)

The long term plan includes multiple facilities and beautification work in Bahawalpur.

Table 9: Long Term Plan for Bahawalpur District

Sr. No.	Proposed Projects	Government Entity	Cost (PKR million)	Mode
1.	Provision of food courts with solar system in Satellite Town Commercial area.	PHA	60	PPP
3.	Construction of Beautification cum Advertisement Waterfall at Different Chowks Bahawalpur City	PHA	12	PPP
4.	Historical wall of Bahawalpur outside Stadium Wall	PHA	3	PPP
Total			75	

Rahim Yar Khan District

Short, medium and long term plan of RYK district is as follows;

5.3.1.4. Short Term (up to 3 years)

There are multiple parks / green spaces which needs upgradation and rehabilitation in order to improve the quality of urban environment in Rahim Yar Khan. The short term plan (upto 3 years) is as follows;

Table 10: Short Term Plan for RYK District

Sr. No	Proposed Projects	Government Entity	Rough Cost (PKR million)	Mode
1.	Development and improvement of Parks of Abbasia Town, RYK: (i) Umer Park - 10 Kanal, (ii) Usman Park - 12 Kanal, (iii) Ali Park - 8 Kanal, (iv) Saddique Park - 10 Kanal	MC, RYK	52	ADP
2.	Development and improvement of D-Block Park (12 Kanal) and Zam Zam Ground (16 Kanal) in Satellite Town.	MC, RYK	72	ADP
3.	Rehabilitation of Zam Zam Park, RYK.	MC, RYK	25	ADP
4.	Upgradation and Provision of Missing facilities in all parks of Sadiqabad city	MC, Sadiqabad	30	ADP
5.	Upgradation and Provision of Missing facilities in all parks of Khanpur city, Liaqatpur city and Uch Shareef city	MCs	60 (20 each city)	ADP
6.	Liner Plantation along with the Canal passing through RYK City	MC, RYK	10	PPP
7.	Rehabilitation of Wildlife Park/Zoo, RYK	FW&F	123	PPP
8.	Procurement of 3 Potable Air Quality Sensors	EPA	15	ADP
Total			387	

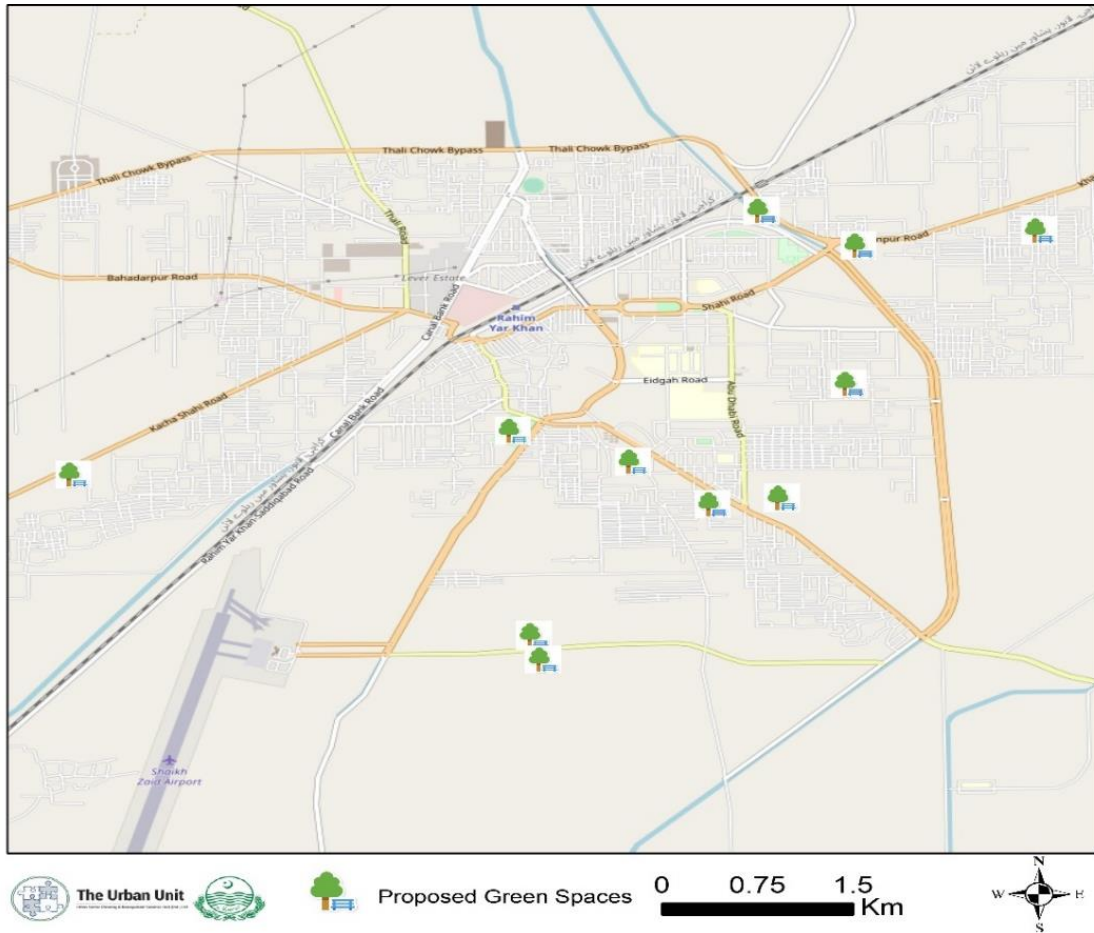


Figure 51: Proposed areas for Green Spaces in Rahim Yar Khan District

Proposed plan for Rehabilitation of Zam Zam Ladies Park, Rahim Yar Khan

Proposed plan for Rehabilitation of Zam Zam Ladies Park, Rahim Yar Khan (1.88 acre) includes multiple interventions, keeping in view the women perception, needs and on-ground survey. These includes;

- ▶ Play areas for children
- ▶ Outdoor fitness ladies gym (30'x30')
- ▶ Shaded structures
- ▶ Suspended Benches
- ▶ Drinking Water faucets / fountains
- ▶ Gazebo
- ▶ Shrubs
- ▶ Bird aviary
- ▶ BBQ entertainment points
- ▶ Water Cooler
- ▶ Tuck Shop
- ▶ Toilet Block
- ▶ Rough Cost Estimates: Rs. 25.03 millions



Figure 52: Proposed Plan for Zam Zam Ladies Park, Rahim Yar Khan

Rehabilitation and Improvement of Wildlife Park/Zoo, RYK

Similarly, rehabilitation and improvement of Wildlife Park/Zoo, RYK is a project which needs immediate attention by the relevant authorities. Proposed area of this scheme is 14.7 acres and rough cost estimates are 123.357 million. Details are as follows;

- ▶ Training academy
- ▶ Information cell
- ▶ Ticket office
- ▶ Parking area
- ▶ Mini library and reading area
- ▶ Exhibition stalls
- ▶ Shopping stalls
- ▶ Rest areas (male/female/infant)
- ▶ Jogging tracks
- ▶ Storage areas for animal food
- ▶ Waste disposal area
- ▶ Power supply room
- ▶ Food kiosks
- ▶ Family spots open eateries
- ▶ Animal themed play areas for children
- ▶ Animals information boards
- ▶ Information Kiosks
- ▶ Security guard room
- ▶ Gardening Equipment room
- ▶ Maintenance rooms
- ▶ Staff residence
- ▶ Maintenance offices
- ▶ Guest residences
- ▶ Medical dispensary (public use)
- ▶ Medical dispensary(animals)
- ▶ Drinking faucets

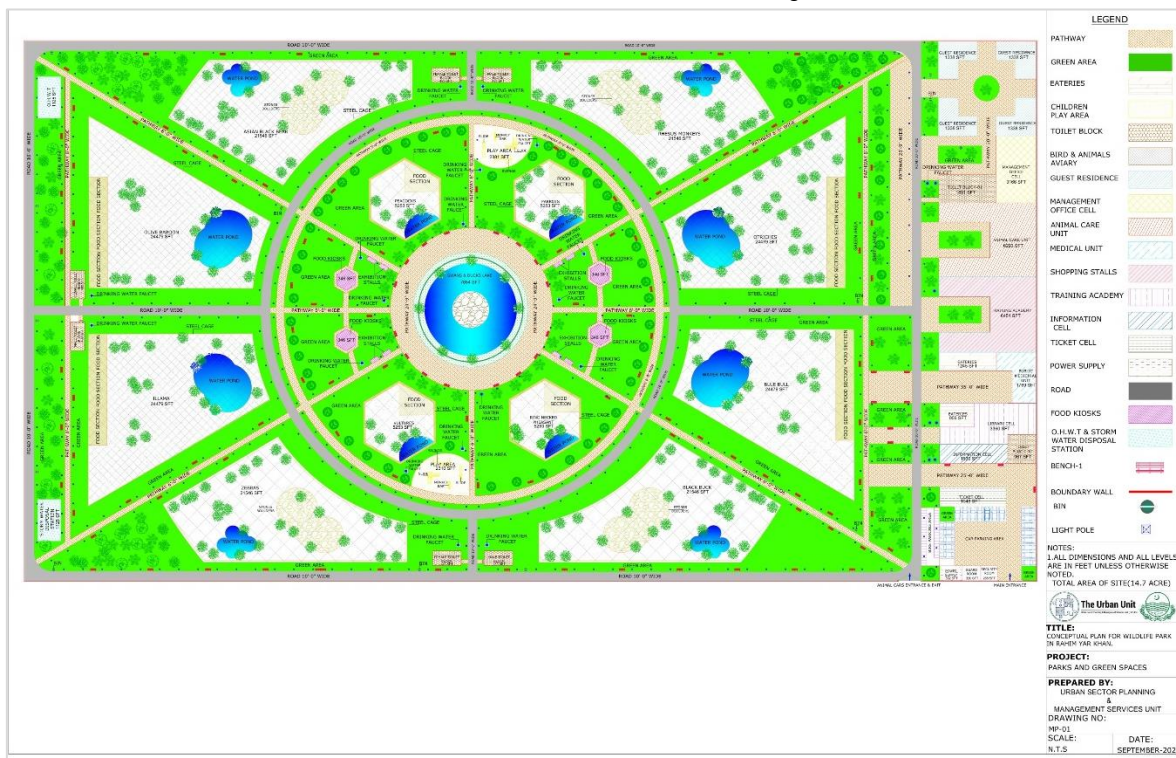
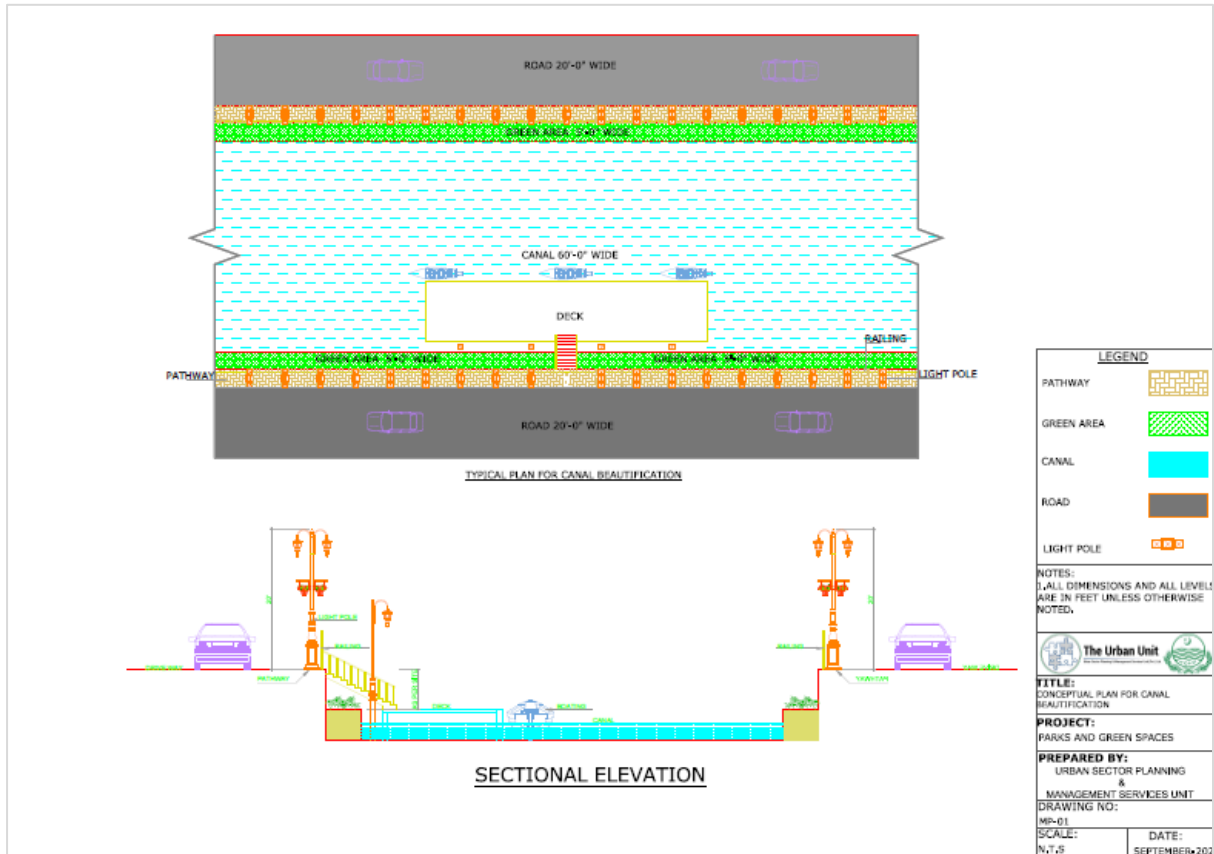


Figure 53: Proposed Plan for Rehabilitation and Improvement of Wildlife Park/Zoo, Rahim Yar Khan

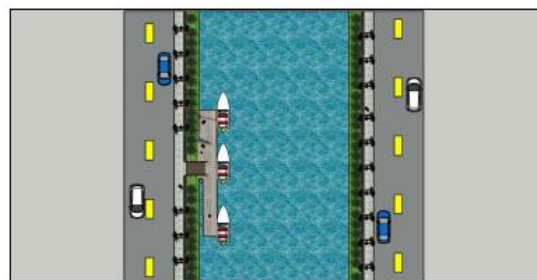
The proposed animals include Deer, Black buck, Rhesus monkeys. Blue bull, Zebras, Asian black bear, Olive baboon, Ostrich and Lama. Whereas, Vultures, Peacocks, Green parrots, Swans, Ducks and Ring necked pheasant are the proposed birds.

Linear Plantation along Dari Sangi Canal of Rahim Yar Khan

Provision of green space include another important element of linear or compact plantation around the roads and canals. In order to increase green spaces per capita, linear plantation can play a positive role. Considering recreational activities importance and their need in the region, **Dari Sangi Canal of Rahim Yar Khan** can be used for linear plantation and boating. Total proposed (rough) cost of this project is Rs. 22 million.



3DVIEW 02



3DVIEW 01



3DVIEW 04



3DVIEW 03

Figure 54: Conceptual Plan for Linear Plantation and Boating facility at Dar Sangi Canal, RYK

5.3.1.5. Medium Term (3 to 6 years)

Table 11: Medium Term Plan for RYK District

Sr. No.	Proposed Projects	Government Entity	Cost (PKR million)	Mode
1.	Afforestation in Abbasia Plantation & Wolhar Plantation	FW&F	30	ADP
2.	Afforestation for open spaces in Rahim Yar Khan City (250 acre)	MCs	15	PPP
3.	Development and Improvement of small Parks in RYK: (i) Aziz Abad Park – 06 Kanal, (ii) Bano Market Park – 03 Kanal	MC, RYK	12	ADP
4.	Development and improvement of Park Khawaja Banglows – 08 Kanal	MC, RYK	10	ADP
5.	Combined Effluent Treatment Plant in Rahim Yar Khan	Industries	1,000	PPP
Total			1,067	

Combined Effluent Treatment Plant for Industrial Clusters of RYK

Cost: 1000 PKR Million

Scope:

Successful implementation of the Proposed WWTPs Project will lead to improved water quality in the Rahim Yar Khan City, improved ecological health and reduced public health risk. Moreover, this effort will also enhance the recreational cultural value of the area adding onto the direct benefit of communities.

The city of Rahim Yar Khan has several commercial and industrial centers which require a Combined Effluent Treatment Plant (CETP) based on the type of effluent discharge. However, a generic representation of CETP is shown below:

- Should be located at a lower elevation in comparison to target area to permit gravity flow
- Should be fairly isolated from developed areas
- Flood zones should be avoided unless appropriate flood protection is provided
- Year round/easy road access for material transport. Preexisting road access is ideal.
- Clear of historical and ecologically sensitive regions.
- Availability of water bodies or flow streams capable of accepting plant effluent.
- Situated near the zones to be served – allows economic regrouping of water sewers etc.

The decision of technology will be done after detailed feasibility study.

5.3.1.6. Long Term (up to 10 years)

Table 12: Long Term Plan for RYK District

Sr. No.	Proposed Projects	Government Entity	Cost (PKR million)	Mode
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1.	Provision of food courts Satellite Town Commercial area.	PHA	23	PPP
2.	Afforestation in open spaces/improvement in green spaces of Yazman and Hasilpur Cities	MC, BWP	15	ADP
3.	Construction of Beautification cum Advertisement Waterfall at Different Chowks Bahawalpur City	PHA	12	PPP
Total			50	

5.3.2. Bahawalnagar District

Short, Medium and Long Term Plans for Bahawalnagar Districts are as follows;

5.3.2.1. Short Term (up to 3 years)

Table 13: Short Term Plan for Bahawalpur District

Sr. No.	Proposed Projects	Government Entity	Cost (PKR million)	Mode
1.	Rehabilitation and improvement of existing parks (07) including interventions of amenity in Bahawalnagar city.	MC, BWG	35	ADP
2.	Rehabilitation and improvement of Wildlife Park/Zoo, Bahawalnagar	FW&F	15	PPP
3.	Afforestation in Chaupali Plantation Game Reserve and Head Islam Game Reserve	FW&F	10	PPP
4.	Procurement of 3 Potable Air Quality Sensors	EPA	15	ADP
Total			75	

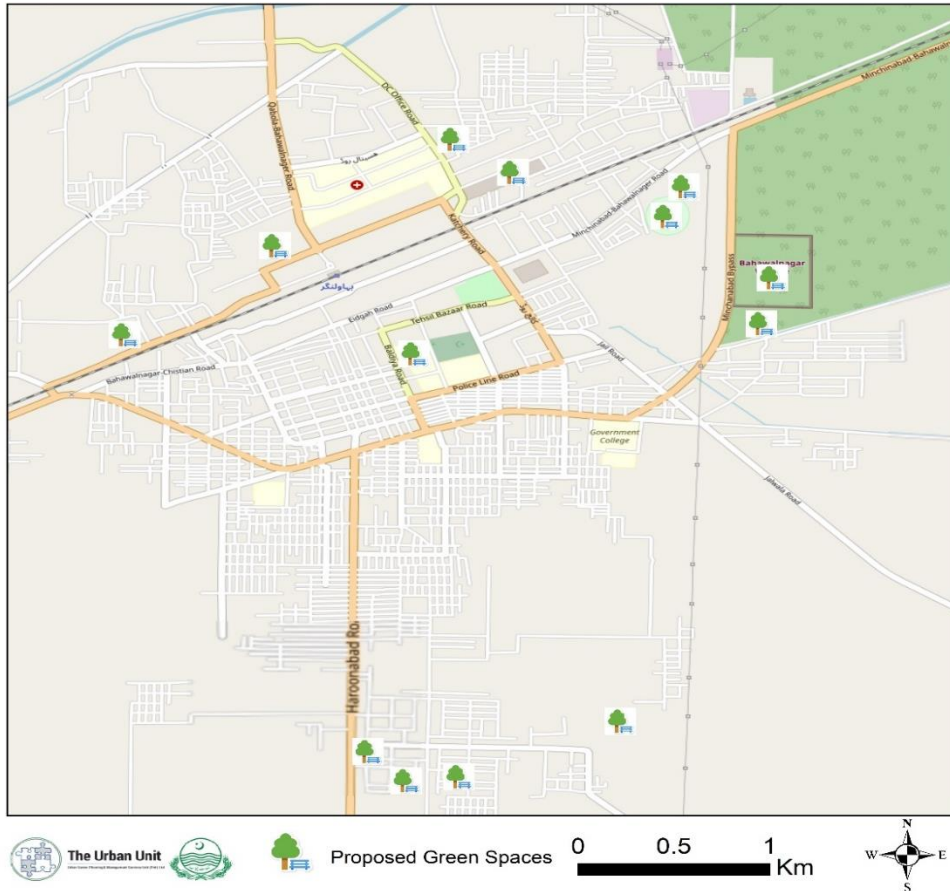


Figure 55: Proposed areas for Green Spaces in Bahawalnagar District
 Proposed Plan for Green Spaces in Family Park in Bahawalnagar is given in the subsequent figure. This plan includes multiple activities for the families such as trekking trails, camping sites, play area, etc. with a total (rough) cost of Rs. 55 million.



Figure 56: Conceptual Plan for Family Park, in Bahawalnagar

5.3.2.2. Medium Term (3 to 6 years)

Table 14: Medium Term Plan for Bahawalpur District

Sr. No.	Proposed Projects	Government Entity	Cost (PKR million)	Mode
1.	Afforestation for open spaces in Bahawalnagar district (100 acre)	MC, BWG	10	PPP
2.	Afforestation for open spaces in Minchinabad (30 acre)	MC	3	PPP
Total			13	

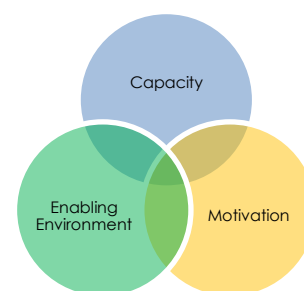
5.4. Governance and Capacity Building

Pakistan ranks within the bottom third percentile of all countries included in the Worldwide Governance Indicators in 2019.³³ For any government entity to perform well, a key factor is the quality of its human resource. Governance is correlated with the investments in social service delivery like provision of green services and good quality environment. Therefore, investments in government officials training are crucial to build the region's capacity to deliver well.

Transforming cities into engines of economic growth and a hub of higher productivity, all government entities linked with municipal services must need improvement in their performance which can only be done through effective capacity building / training program.

In a holistic perspective, the 'capacity' indicates the 'ability to perform'. However, ability is not just a single factor that can lead to improve in the capacities of human resource unless it is complemented by willingness to perform and the availability of enabling environment. In short,

- ▶ A function of ability to perform – Capacity
- ▶ Willingness of government officials to perform – Motivation
- ▶ Regulations, policies, strategies, programs which foster trainings; incentives and rewards for trainees; political interference; posting and transfers; foreign training opportunities – Enabling Environment



A fully functional and capable Environment sector in a region demands for increased institutional capacities and enhanced human (technical) capacities in order to fulfil international/national/regional/local commitments and city-centric service delivery.

Parks and green spaces in Bahawalpur Region is dealt by Parks and Horticulture Authority (PHAs) in Bahawalpur metropolitan. PHA works for development and maintenance of new parks, green belts, green verges, open spaces and beautification of cities. Rest is the responsibilities of MCs (and TCs, UCs). Whereas, DO/AD Environment with limited staff is present in each district for environmental inspections and enforcement.

Out of almost 50 training institutes under 18 government departments, following training institutes are present in the Bahawalpur region.

Table 15: Training Institutes in Bahawalpur Region

S.	Department	Training Institution
1.	Agriculture Department	1. In-Service Agricultural Training Institute, Gulmerg Road, Rahim Yar Khan, Bahawalpur Division.
2.	Cooperative Department	2. Regional Cooperative Training Institute Bahawalpur
3.	Forestry, Wildlife & Fisheries Department	3. Fisheries Training Sub-center, Bahawalpur
4.	Industries Commerce & Investment Department	4. Govt. Staff Training College, Bahawalpur

9.3.1 Key Gaps and Challenges

Management and Professional Development Department and Punjab Local Government Academy are the apex training departments which are responsible for imparting quality training to the officers and

³³ Muhula, R. 2019. Pakistan @ 100 Governance and Institution. World Bank Group.

officials of different departments of Government of the Punjab, in order to inculcate requisite attitudes, skills and behaviors, which would enable them to deliver public service efficiently and effectively. Moreover, these courses are designed to enhance professional development and personal growth for the attainment of LGA's organizational goals and objectives. However, there are no specialized training institutes in Punjab which impart technical trainings with reference to environment and green spaces.

Following gaps were identified during field visits and consultation meetings;

- ▶ **Limited awareness among the public officers** about the issues related to environmental and social safeguards as well as about green spaces.
- ▶ **Traditional focus of trainings remains on content that is general** and that aims to develop broad leadership and management skills, seldom designed to improve the capacity to deliver 'specific and technical' services. Even though, constructive amendments have been made in the recent years in updation of training courses of government offices, however, a robust lookback is still needed to improve the training curricula based on Training Needs Assessment Exercise.
- ▶ **Trainings which are presently being conducted are mostly supply driven.** Demand driven trainings can fulfil the gap which is hindering in the service delivery of government officers.
- ▶ **No training institute is present in Punjab which is catering the subjects like Environment, Climate Change, Technology Transfer, Urban Green Spaces, and Afforestation and so forth.** Moreover, the existing training institutes have limited capacity in terms of staff, infrastructure & budget.
- ▶ **Adhocism is present** as training is imparted through various projects without proper needs assessment and consulting the concerned departments. Such trainings are conducted in an adhoc manner as a donor driven activity or conditionality.
- ▶ **Limited use of ICT tools is another constraint.** Computer and computer based technology is only used by the majority of employees as a typing tool and its benefits are not being capitalized for service delivery.
- ▶ **Shortage of Funds** for Trainings in PHA and MCs of Bhawalpur Region.

Environment Protection Department has recently got approval of their Restructuring Plan which includes an independent training institute, called as Institute of Environment Technology and Training (IETT) which will provide trainings to the government officers of EPA, its related agencies and other departments. This initiative will play a positive role in promoting environment suitability as a hindrance to development along with ensuring continuous development. However, an ADP scheme on IETT is yet to be added.

Others gaps/challenges include;

- ▶ Absence of office building for PHA
- ▶ Shortage of machinery, equipment and vehicles in PHA and MCs of Bhawalpur Region
- ▶ Shortage of funds for salaries, contingencies, O&M in PHA and MCs of Bhawalpur Region
- ▶ HR Crunch as per standard yard stick in PHA and MCs of Bhawalpur Region

Proposals:

An extensive capacity building plan is needed for PHAs and MCs and district / field staff of EPA for enhancement of urban green spaces and effective monitoring and enforcement of environmental standards in the Bahawalpur Region.

- ▶ Establishment of Horticulture Academy is a cornerstone of capacity building initiative for Bahawalpur region as well as for South Punjab.
- ▶ Proposed training modules, but not limited to the following, needs to be included in the capacity building plan of PHAs and MCs;
 - Planning and maintaining planting of private and public gardens, parks and streetscapes

- Plant care, selection and maintenance
- Construction of garden beds and planted areas
- Integrated pest, weed, soil and plant health management
- Tree/ Plant Identification and disease diagnosis
- Urban Tree Plantation
- Recreation Management
- Nursery – Production and Retail
- Landscape, Sports Turf , Production Horticulture
- Conservation and Land Management
- Occupational Health and Safety
- Environmental Monitoring and Assessment

As per Rules of Business 2011³⁴, Management and Professional Development Department (MPDD) Lahore can conduct customized / demand driven training courses according to training needs and requirements of Departments, field formations and special institutions. Similarly, customized courses can be arranged at Local Government Lala Musa Academy for the PHA and MC staff. It is recommended to arrange bi-annual/annual trainings for relevant staff members (basic to advance level courses) under such departments unless a separate and subject-related training academy is established. Similarly training of EPA Field/District Staff should be mandatory.

³⁴ Letter No.MPDD (Admn)1-4/2018) Pg 2

Conclusion

Hence, this report gives an overview of existing state of environment and green spaces (public parks, specifically) and highlights some of the key challenges being faced by different entities at various scale in Bahawalpur Region. Further the report suggests a number of important practical measures needed to improve the existing gaps and challenges which can promote green economy, environmental suitability in the region. The recommendations in this sectoral plan covers the observations, concerns suggestions and feedback on the existing services, people perceptions on the subject and some analytical work based on international standards which will help to prioritize the future schemes in short, medium and long term basis. Overall, the prioritization of schemes will have a synergistic effect on the other sectors of the region and will improve the livability and other social and economic indicators positively.