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Islamic Republic of Pakistan: Provincial Strategy for Inclusive and Sustainable Urban Growth

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For Planning and Development Department, Government of Khyber Pakhtunkhwa, Pakistan

Asian Development Bank

Pakistan: Khyber Pakhtunkhwa Strategy
for Inclusive and Sustainable Urban Growth

Swat
Regional Development Plan

CURRENCY EQUIVALENTS

(as of 01 December 2020)

Currency unit	–	Pakistan Rupee (PKR)
PKR1.00	=	$0.0063
$1.00	=	PKRs 159.4166

ABBREVIATIONS

ADB	-	Asian Development Bank
ADP	-	annual development program
APTMA	-	All Pakistan Textile Mills Association
CDG	-	City District Government
CDIA	-	Cities Development Initiative for Asia
CIU	-	city implementation unit
CLG	-	City Local Government
CNG	-	compressed natural gas
CPEC	-	China-Pakistan Economic Corridor
CRVA	-	climate resilience and vulnerability assessment
DDAC	-	District Development Advisory Committee
DFID	-	Department for International Development (UK)
DM	-	disaster management
DRR	-	disaster risk reduction
EA	-	executing agency
EIA	-	environmental impact assessment
EMP	-	environmental management plan
EPA	-	Environmental Protection Agency [of Khyber Pakhtunkhwa]
EPO	-	Environmental Protection Order
EPZ	-	export processing zone
ESMS	-	environmental and social management system
FATA	-	Federally Administered Tribal Area
GDA	-	Galiyat Development Authority
GIS	-	geographic information system
GIZ	-	Deutsche Gesellschaft für Internationale Zusammenarbeit (gmbh) [German international development agency]
GoKP	-	Government of Khyber Pakhtunkhwa
GoP	-	Government of Pakistan
ha	-	Hectare

HR	-	human resource
IA	-	implementing agency
ICT	-	information and communication technologies
IEE	-	initial environmental examination
IT	-	information technology
KP	-	Khyber Pakhtunkhwa
KPCIP	-	Khyber Pakhtunkhwa Cities Improvement Project
KPEC	-	Khyber Pass Economic Corridor
KPEZDMC	-	Khyber Pakhtunkhwa Economic Zones Development and Management Company
KPHA	-	Khyber Pass Highways Authority
KPPRA	-	Khyber Pakhtunkhwa Public Procurement Regulatory Authority
KPUMA	-	Khyber Pakhtunkhwa Urban Mobility Authority
LGA	-	local government act
LGE&RDD	-	Local Government, Elections and Rural Development Department [of Khyber Pakhtunkhwa]
lpd	-	liters per day
MDTF	-	Multi Donor Trust Fund
MIS	-	management information system
NCs	-	neighborhood councils
NDMA	-	National Disaster Management Authority
NER	-	net enrolment rate
NIM	-	National Institute of Management
NIUIP	-	National Institute of Urban Infrastructure Planning
NOC	-	no objection certificate
NUA	-	New Urban Agenda
NVQF	-	national vocational qualification framework
O&M	-	operation and maintenance
OHR	-	overhead reservoir
P&DD	-	Planning and Development Department [of Khyber Pakhtunkhwa]
PARD	-	Pakistan Academy for Rural Development
PCNA	-	post crisis needs assessment
PDMA	-	Provincial Disaster Management Authority [of KP]
PEFA	-	public expenditure and financial accountability
PER	-	public expenditure review
PFM	-	public financial management
PHED	-	Public Health Department [of Khyber Pakhtunkhwa]
PMU	-	project management unit
PPP	-	public-private partnership
PSISUG	-	provincial strategy for inclusive and sustainable urban growth
RDP	-	regional development plan
SAMA	-	services and assets management agreement
SDC	-	Swiss Agency for Development Cooperation
SDG	-	sustainable development goals

SPS	-	safeguards policy statement [of ADB, 2009]
STP	-	sewage treatment plant
TFR	-	total fertility rate
TLG	-	Tehsil Local Government
TMA	-	Tehsil Municipal Administration
TMO	-	Tehsil Municipal Officer
TVET	-	technical and vocational education and training
UN	-	United Nations
UNDP	-	United Nations Development Program
UPU	-	[Khyber Pakhtunkhwa] Urban Policy and Planning Unit
USAID	-	United States Agency for International Development
VCs	-	village councils
WB	-	The World Bank
WSSCM-S	-	Water and Sanitation Services Company Mingora-Swat

NOTES

(i) The fiscal year (FY) of the Government of the Islamic Republic of Pakistan and its agencies ends on 30 June. “FY” before a calendar year denotes the year in which the fiscal year ends, e.g., FY2020 ends on 30 June 2020.

(ii) In this report, “$” refers to US dollars.

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Executive Summary

⇒ This Regional Development Plan (RDP) identifies the key challenges that must be addressed to uplift the development of the region and to provide long-term sustainable and focused development. The RDP provides a 25-year strategic planning framework that aims to:

- Promote sustainable urban and regional development through integrated and coordinated planning in order to regularize the region's future physical development.
- Identify sustainable economic growth and development opportunities.
- Ensure adequate and improved levels of connectivity and municipal services through necessary and essential investments in infrastructure.

⇒ Swat is a mountainous region, located among the foothills of the Hindukush mountain range. The Swat District has lush green valleys, snow-covered glaciers, forests, meadows and plains. The topography of the District is varied but is dominated by the Swat valley; development in the region is severely constrained by the local topography and is confined, in the main, to the Swat valley (Map 11).

⇒ All main urban centers located in the Swat valley and its tributaries. Mingora City is the main urban center in the region and is the third most populated city in Khyber Pakhtunkhwa (KP), with an estimated population of 366,500 in 2020. Mingora City is home to 14.4% of the total population in the District (approximately 2.542 million, 2020); together with Kabal City across the Swat river from Mingora City, this urban agglomeration houses just under half a million people or 19.5% of the District population. The population of urban centers represent only the official urban population[1]and not the actual 'urbanized' population on the margins of the urban centers beyond the official city limits (Map 4). Such areas add significantly to the population living in urbanizing conditions and drawing on the official urban area services.

⇒ The population of the Swat District accounts for 7% and 12% respectively of the province's total and urban population. 70% of the population in Swat District is classified as rural, whilst 30% is urban; the proportion of the population classified as urban is almost double the proportion for KP as a whole, as a consequence of the constraints imposed by the topography.

⇒ The Swat Region differs considerably from KP's overall land use averages for both agriculture (KP: 24%; Swat 17%)) and built-up areas (KP: 2%; Swat 1%). Swat has 80% of its land covered by forest (23%), rangeland and grasses (46%) with snow and glaciers covering an additional 11%. This reflects the mountainous nature of the area and whilst this translates into a considerable eco-tourism economic potential, in the alternative, the density of development is comparatively high in the locations where development is feasible but because it is low-rise and sprawling, population densities are comparatively low.

[1] Within the officially-designated municipal or city limits of the urban centers.

⇒ Settlements are clustered and squeezed into the narrow Swat valley between the mountains, with extensive ribbon development along all main highways. Settlements are also located on the floodplain of the Swat river leaving them vulnerable to periodic and extensive flooding (from monsoon rains, high intensity storms and/or glacial lake outburst floods).

⇒ As a result of constrained land availability and lack of development control, the most challenging issue is uncontrolled urban sprawl which can be seen around all significant urban centers. In Mingora city, for example, there is as much settlement outside of the official boundary as there is within, while there remains a substantial amount of undeveloped, under-developed and/or agricultural land within the official city boundaries.

⇒ In the urban centers the lack of integrated planning and development control are manifest in:

- Inadequate and insufficient provision of basic services (water supply, sanitation, waste management).
- Uneconomical and poorly-maintained infrastructure.
- Encroachment on surrounding agricultural/natural land (unconstrained sprawl).
- Congestion and increased transport needs with related costs and inefficiencies.
- Environmental degradation and pollution to ground, air, surface water and groundwater.
- Lack of tax base to support services being accessed.

⇒ Swat is at its heart an agrarian community and agriculture is the main source of income for much of the rural population. The main crops of Swat include wheat, maize, vegetables, tobacco, fruits, soya bean and sunflower. However, most landowners have small tracts of land suitable only for subsistence farming. Key challenges faced in the agricultural sector are low yields, poor soil quality exacerbated by over-fertilization, and, more fundamentally, lack of local processing capacity and marketing of products.

⇒ The industrial base in Swat is limited in size compared to industrial activity in the Peshawar region. The main industries in Swat are marble and rubber and plastics, followed by cement and rice. This industrial diversity gives the Swat District some resilience against sectoral business cycles but manufacturing overall is struggling. Moreover, the export value of Swat-based industrial production is neither high nor showing positive trends.

⇒ Swat has served as a major trading hub for the Malakand Division and a historical trade route for China. The local markets provide a large variety of Chinese products. However, the Swat district is somewhat often the main track of the economic and infrastructure developments proposed under CPEC and CAREC and, accordingly, because of its relative remoteness is not anticipated to benefit significantly from investments under these programs.

⇒ Significant population growth is projected in the region over the planning horizon to 2045. The population of urban centers is expected to more than double by 2045, including the population of Mingora City. The total District population is anticipated to reach just over 5 million by 2045, of which 30.6% will be in the main urban centers (up from 30.2% in 2020).

This increase in population will place significant additional burdens and stress on available land resources, existing infrastructure and the provision of basic services, all with potential for significant impacts on the natural resources and beauty of the region.

⇒ The region has substantial domestic, regional and international tourism potential due to its dramatic scenery and eco-tourism potential of the Karakorum and Himalaya Mountains. Tourism was an economic mainstay until 2001 when insecurity in the region virtually ended visitation. The situation is stabilizing, and tourism is seeing a resurgence.

⇒ Approximately 0.5 million tourists visit Mingora and Swat Valley annually. However, unregulated touristic development has placed hotels and tourism structures within the river basin and the flood plains, increasing flood risks during times of higher flow rates. The region offers something for every type of tourist. Popular tourist attractions are Kalam, Bahrain, Miandam, Madyan, Fizagut, and the skiing resort at Malam Jabba. Swat also offers historical places like Butkara, Shingardar stupa, and Saidu stupa.

⇒ Promotion and development of the tourism sector is perceived to be a high priority and offers significant growth potential throughout the region, ranging from historical and cultural sites in the south to scenic attractions and eco-tourism in the northern parts of the region. Key recommendations for the tourism sector are made in the RDP at both Provincial level and also at regional level.

Provincial-level Recommendations

- Implement in full the KP Tourism Policy (2015)
- Establish the Tourism Development Committee
- Improve the working and accountability of the KP Tourism Department
- Strengthen the role of the Directorate of Tourist Services
- Adopt specific regulations to improve the standard of tourism facilities throughout the Province
- Encourage the role of PPP to increase investment in the sector and to meet resource gaps
- Promote conservation of the natural environment and cultural heritage
- Invoke environmental considerations in all future developments
- Focus on developing indigenized and harmonized quality tourism facilities and support infrastructure (roads, rest and roadside facilities, range of types and standards of accommodation and eating places, information centers, first aid/medical facilities etc.)
- Improve supplies and standards of basic services (power, water and sanitation, etc.)
- Focus development on new tourist sites
- Develop and implement hiking trails, footpaths, eco-tourism facilities, safe parking areas, etc.
- Prepare and implement an overall tourism development plan based on the principles and goals of sustainable development and underpinned by a detailed market assessment
- Invest in capacity building for all areas of touristic services – tour operators, hotel operators, restaurants
- Maximize the involvement and participation of the local communities in order to provide job creation and economic development

Regional-level Recommendations

- Prohibit development of unplanned constructions on riverbanks and hill slopes
- Enforce strict planning control and permitting in accordance with prevailing legislation, approved design standards, environmental considerations and adequate risk assessment
- Only permit development with appropriate services and infrastructure to manage wastes
- Permit only eco-friendly technologies for service supply and waste management
- Introduce community-managed eco-lodges
- Develop trekking and hiking trails in the mountain valleys, with support facilities such as camping sites
- Focus new development in remote tourist locations outside of the main urban centers
- Promote eco-tourism especially to the north of Kalam where there are several beautiful valleys, having thick forests, waterfalls, glaciers, lakes and meadows
- Preserve archaeological sites in lower Swat which are under serious threat due to urban sprawl
- Develop community-based heritage conservation initiatives
- Develop recreational facilities for tourists such as parks, picknick spots, fishing points, and adventure sports clubs including water sports and winter sports activities
- Provide tax holiday to provide an incentive for new investments in the region
- Facilitate development by providing basic infrastructure (power, water, etc.) to specified areas

⇒ However, to realize the true potential of the tourism sector requires careful and integrated planning since it must be supported at all levels by significant changes in the way development has proceeded to date in the Swat Valley. This will require specific interventions in the following:

- Constraints on the physical growth of urban centers, particularly Mingora City and Kabal City. The priority should be to densify the existing settlements to increase urban density rather than allowing continued uncontrolled urban sprawl.

- Provision of green buffers between urban centers to preserve the ecological and environmental quality of the region, particularly in the Swat valley. Prohibit and control ribbon development along the main highways in the region.

- Improve road transportation and connectivity – for example, improvement in road quality and width, decongestion of constrained access (for example, development of by-pass roads or clearance of obstructions on rights of way), traffic control and restrictions for tourism-related traffic, arrangements should be made to keep Kalam and Malam Jabba road open during snow fall season to attract winter tourism to these areas.

- Improve basic water supply and sanitation services throughout the region. In particular, implement water supply schemes for the main urban centers (where most of the current tourist facilities are located) and provide sewage collection and treatment facilities to avoid the discharge of untreated wastewater to surface water

courses. Similarly, enhance solid waste management systems and implement policies and facilities to manage solid waste in an environmentally-secure manner. This is a fundamental requirement since as the population increases the potential exists for increasingly severe degradation of the environment without adequate interventions in providing basic municipal services.

- Improve and expand health facilities throughout the region for both locals and visitors.
- Invest in facilities to bring more local agricultural produce to markets in the district as well as developing processing facilities to export local products to other areas of Pakistan and internationally.
- Develop local markets and production facilities for tourism-related products.

PART I:

INTRODUCTION

A. BACKGROUND TO THE REGIONAL DEVELOPMENT PLAN

1. Pakistan is the most rapidly urbanizing country in the South Asia. In 2017, 36.4 percent of the Pakistani population was living in urban areas as compared to 32.5 percent in 1998.[2] It is estimated that by 2025 nearly half the country's population will be living in cities.[3] Notwithstanding that economic activities in urban areas produce more than 75 percent of national gross domestic product (GDP), more than 15 percent of the urban population lives in poverty. Overall, the urban infrastructure is inadequate and is aging, with insufficient investments to maintain basic services or stimulate economic growth and create jobs.[4] A lack of strategic planning combined with inappropriate regulation, weak planning standards, and inefficient resource allocation, has resulted in major urban problems across Pakistan. As the government's ability to address these challenges is limited, these conditions have contributed to high levels of socio-economic deprivation and constrained productivity and economic growth in urban areas.[5] This necessitates proactive development planning for these cities to provide sustainable urban services to their populace.

A.1. KP Strategy for Integrated and Sustainable Urban Growth (KP-SISUG)

2. The Asian Development Bank's (ADB's) country partnership strategy for Pakistan (2015–2019) stated that ADB will support the government's priorities for urban renewal, with improved infrastructure and institutions for municipal services at national, provincial, and city-level. In November 2016, ADB approved the policy and advisory technical assistance on Provincial Strategy for Inclusive and Sustainable Urban Growth (PSISUG) in Khyber Pakhtunkhwa (KP) Province[6] with the following four primary outputs:

i. Development of a new road map document for the urban sector.

ii. Preparation of regional development plans (RDPs).

iii. Capacity building program for relevant stakeholders.

iv. Mainstreaming innovations in the urban sector.

3. The Regional Development Plan for the Swat Region provides a broad-brushed strategic framework for urban and regional development in the Swat District, identifying the key drivers of urban development, exploring potential for economic dividends thereof, and estimating demand for urban services in the region.

2 Many demographers believe that urban population in Pakistan is underreported as currently only people residing in metropolitan and municipal corporations, municipal committees (MCs) and cantonments are considered urbanized and these demarcations have not been updated for years. All the 'residual' are rural population.

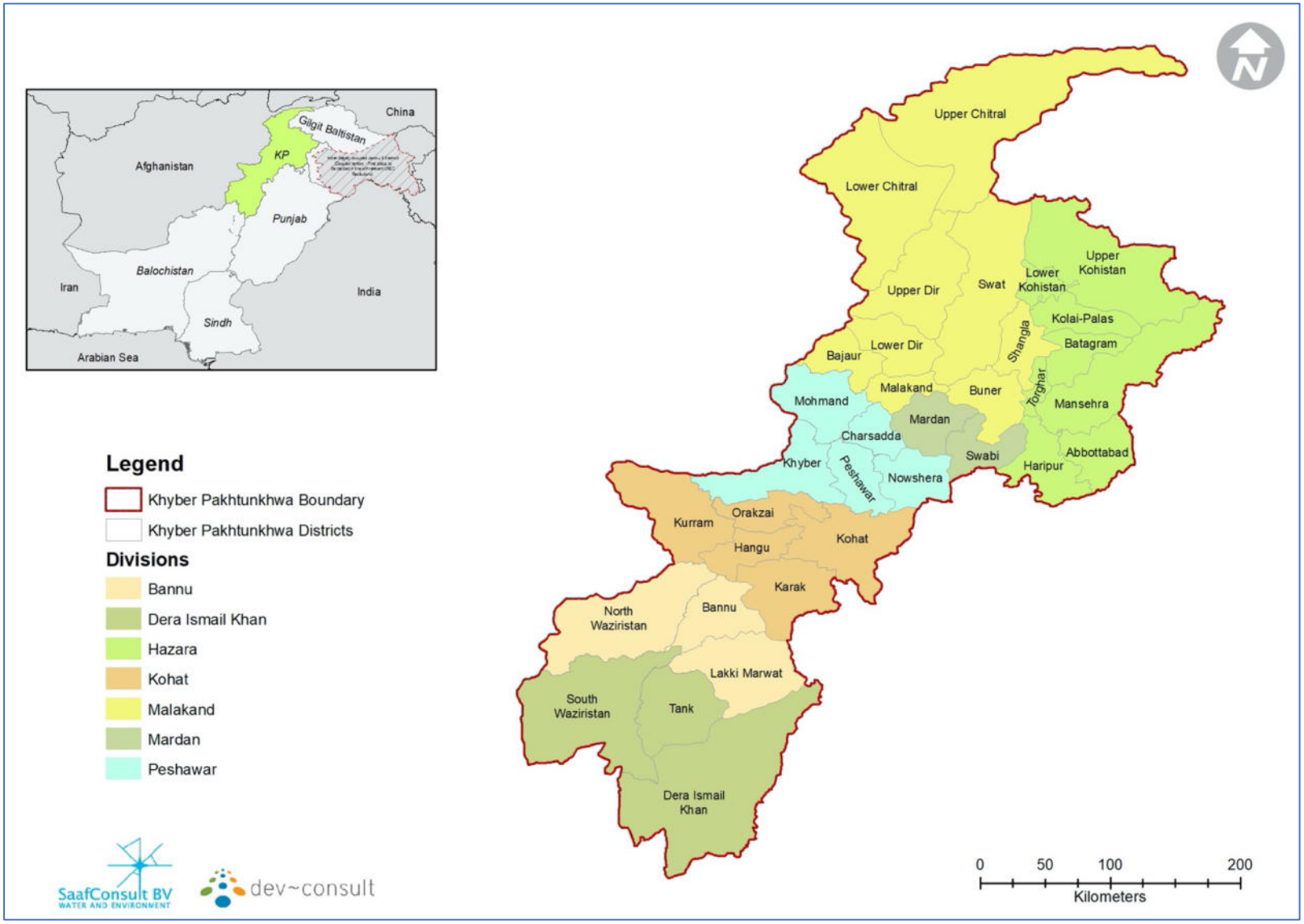
3 UNDP. 2019. *Sustainable Urbanization. Development Advocate Pakistan*. 5 (4).

4 ADB. 2015. *Country Partnership Strategy: Pakistan, 2015–2019*. Mandaluyong City: Asian Development Bank.

5 International Growth Centre. 2015. *Reclaiming Prosperity in Khyber Pakhtunkhwa: A Medium-Term Strategy for Inclusive Growth*. London: IGC. F-37109-PAK-1.

6 TA 9223-PAK: Provincial Strategy for Inclusive and Sustainable Urban Growth.

Map 1: Khyber Pakhtunkhwa – administrative units



A.2. Objectives of the RDP

A.2.1. Vision

4. The Regional Development Plan (RDP) for the Swat Region aims to promote sustainable urban and regional development through integrated and coordinated planning in order to regularize the region's future physical development, promote sustainable economic growth and opportunities and ensure adequate and improved levels of connectivity and municipal services through necessary and essential investments in infrastructure.

A.2.2. Objectives of the RDP

5. The RDP aims to achieve the following objectives:

- Provide a strategic multisectoral plan that identifies the comparative advantages of the region and a 25 year investment plan for the selected cities in the region.
- Prioritize key subsectors including water supply, environmental sanitation, solid waste management, tourism, cultural heritage, smart city, urban green spaces and amenities, other municipal services, and regional connectivity.
- Explore interventions that will benefit from economies of scale or interconnectivity.
- Prioritize crosscutting areas such as corporate or business planning, data and indicators, human resources, procurement, safeguards and budget planning and management.
- Pay special attention to the urban poor, women's participation, and measures to address income and gender inequity.
- Based on spatial and demographic land use, identify investments for urban areas within the region.
- Identify the appropriate financing modality and the nature of investments under the loan.

A.3. RDP's Structure and Outline

6. The Regional Development Plan for Swat addresses the key urban development challenges taking into consideration the regional influences and interactions of Swat in alignment with international urban planning principles. The RDP provides a 25-year planning framework to deliver a better balance between social, economic, environmental and infrastructure physical development, integrating cross-cutting issues (such as climate change and community resilience, urban-rural planning, regional connectivity, poverty, gender and social issues) with spatial planning.

7. This RDP is set out as follows:

- **Part I: Introduction** introduces the region in the backdrop of the strategic interventions being undertaken and explains the sustainable planning approach for sustainable urban development in terms of planning principles and guidance. It also defined the region in geographic and physical terms and summarizes the climate change vulnerabilities of the region. This part sets the stage for the RDP through presenting

current state of governance and stakeholders and the socio-economic settings (including demographics, energy, education and health sectors, employment, poverty, and gender and inclusiveness).

- **Part II: Urban Development: Status and the Way Forward** covers the key sectors for RDP's interventions including urban expansion, regional physical connectivity, urban economy, municipal services and tourism. The individual chapters cover the current status, service demand and recommendations with investment plans for the next 25 years.

- **Part III: Implementing the Urban Agenda** includes some innovative approaches for circular economy, smart cities and climate resilience. There is a separate chapter on institutional and legal reforms, financial management, service delivery and capacity development. The last chapter discusses various options and modalities for financing the urban development.

B. SUSTAINABLE PLANNING APPROACH

8. This RDP is based on a series of cross-cutting sustainable planning principles aimed at ensuring that both plans, and their supporting development investments remain relevant, effective and efficient for their full anticipated lifespan. To support the application of these principles in on-the-ground investment applications a series of guidance actions are also presented. Sustainable actions are discussed at the Regional, Urban and Community levels including their linkages both above to national and international levels, and below to the street and household.

9. Sustainability has two closely connected components: (1) institutional, and (2) physical. Institutional starts with the political will to prioritize long-term benefits over short-term political agendas in order to prepare, implement and institutionalize locally appropriate policies, plans, legislation, regulations along with consistent implementation and operational procedures all supported by comprehensive and inclusive stakeholder participation. Political, institutional and financial capacities must be committed to long-term operations and maintenance programs. The physical component of sustainability is simply ensuring that capital investments secure fit-for-purpose designs, materials and technologies on the basis of life-cycle costing as opposed to only short-term initial capital costs. To manage the full planning and implementation of Plan-Implement-Manage, a robust program of on-going monitoring and evaluation with related course adjustments becomes a critical part of ensuring that investments remain appropriate and sustainable.

10. Further sustainability can be achieved by incorporating a “circular economy” approach to all development components promoting the re-use, repair, recycling of all products and resources through the design, manufacturing, distribution, retailing and consumer phases of the circle.

11. Achieving sustainability also means ensuring resilience, the ability to successfully manage unexpected shocks to the system be they environmental, economic or social. Specific resilience actions are discussed below. As a Regional Development Plan, sustainability of both rural and urban contexts is essential. Key planning principles for both are presented in Section B.1.

12. The UN identifies four key pillars of sustainable urban development as illustrated in Figure 1.

Figure 1: Sustainable cities

Source: UNDESA; Development Policy and Analysis Division.

B.1. Planning Principles – General

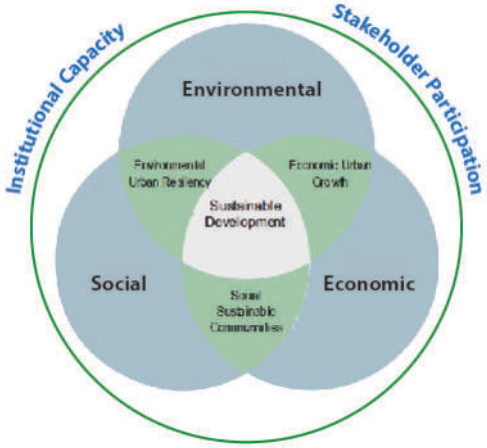
13. A number of sustainable planning principles apply equally to rural, regional and urban contexts. The RDP takes overall sustainable planning guidance from the UN's 17 Sustainable Development Goals (SDG) as illustrated in Figure 2. SDGs specifically addressed by this project are highlighted although all are integrated and mutually supportive. To achieve these goals requires the integrated consideration of three overlapping elements that encompass all the SDGs (Figure 2). The glue that holds these elements together and the key to achieving sustainability lies in the strength and commitment of the institutions responsible for the planning, implementation and management of development actions. Some of the key principles behind the goals' achievement include at the general level:

- **Inclusive**: planning must be for the full spectrum of socio-economic groups with particular attention paid to the most vulnerable elements including the poor, elderly, women, disabled and other disadvantaged groups.
- **Participatory**: opportunities must exist and be promoted for the same full socio-economic spectrum to participate in transparent decision-making processes that may affect their life, livelihoods and well-being.
- **Integrated**: all development sectors including socio-cultural, economic, physical (land, infrastructure, building), environmental, institutional and financial must be integrated to gain mutual benefits and avoid unintentional negative impacts.
- **Strategic and Flexible**: planning must accommodate changing local conditions and priorities while continuing to move forward towards an overall guiding vision.

Figure 2: Sustainable development goals

14. Included in “Integration” is the need to integrate all levels of planning from macro to micro as illustrated in Figure 3. The following sections start with a discussion of the higher, macro-level rural and regional considerations followed by the more detailed urban.

Figure 3: Sustainable development



B.2. Planning Principles – Rural and Regional Development

15. The four main general planning principles outlined above (B.1) apply directly to the rural and regional contexts.

B.2.1. Rural Development Objectives

16. The objective of sustainable developments in rural areas is to raise the quality of life and the environment in rural areas through the promotion of:

- Good quality, sustainable development that respects and, where possible, enhances local distinctiveness and the intrinsic qualities of the countryside.

- Continued protection of the open countryside for the benefit of all, with the highest level of protection for our most valued landscapes and environmental resources.

17. To promote more sustainable patterns of development planning should:

- Focusing most development in, or next to, existing towns and villages.
- Preventing urban sprawl.
- Promote a range of uses to maximize the potential benefits of the countryside fringing urban areas.
- Providing appropriate leisure opportunities to enable urban and rural dwellers to enjoy the wider countryside.
- Promote sustainable, diverse and adaptable agriculture sectors where farming achieves high environmental standards, minimizing impact on natural resources, and manages valued landscapes and biodiversity; contributes both directly and indirectly to rural economic diversity; is itself competitive and profitable. provides high quality products that the public wants.[7]

B.2.2. Rural Planning Principles

18. Rural planning should be guided by the following principles:

i. Sustainable development is the core principle and foundation of good land use planning and requires:

   a. Social inclusion, recognizing the needs of everyone.

   b. Effective protection and enhancement of the environment.

   c. Prudent use of natural resources.

   d. Maintaining high and stable levels of economic growth and employment.

ii. Good quality, carefully sited, accessible development within existing towns and villages should be allowed where it benefits the local economy and/or community (e.g., affordable housing for identified local needs); maintains or enhances the local environment. does not conflict with other planning policies.

iii. Accessibility should be a key consideration in all development decisions. Most developments which are likely to generate large numbers of trips should be located in or next to towns or other service centers that are accessible by public transport, walking and cycling. Decisions on the location of other developments in rural areas should, where possible, give people the greatest opportunity to access them by public transport, walking and cycling, consistent with achieving the primary purpose of the development.

iv. New building development in the open countryside away from existing settlements, or outside areas allocated for development in development plans, should be strictly

[7] GoKP. 2020. Abbottabad Land Use Plan (Draft). Peshawar: Urban Policy Unit, P&D Department, Government of Khyber Pakhtunkhwa.

controlled; the overall aim is to protect the countryside for the sake of its intrinsic character and beauty, the diversity of its landscapes, heritage and wildlife, the wealth of its natural resources and so it may be enjoyed by all.

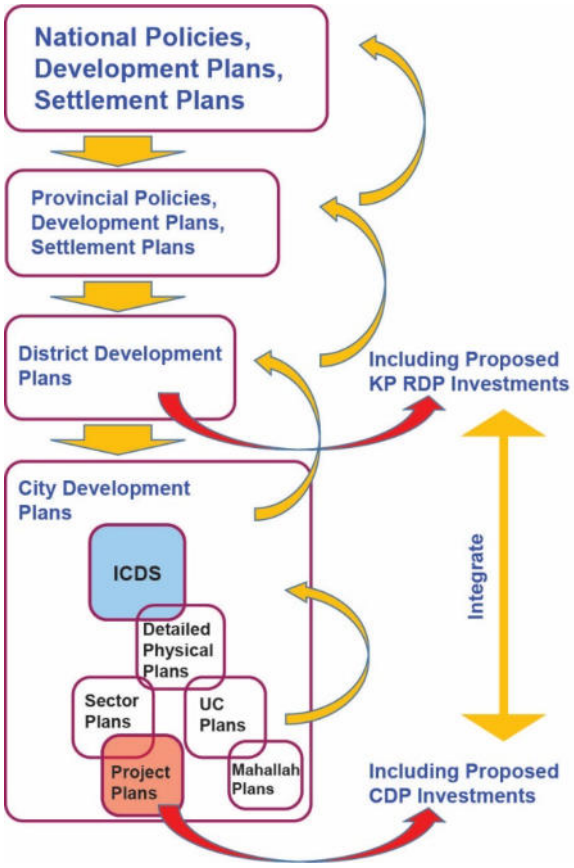
v. Priority should be given to the re-use of previously-developed ('brownfield') sites in preference to the development of greenfield sites, except in cases where there are no brownfield sites available, or these brownfield sites perform so poorly in terms of sustainability considerations (for example, in their remoteness from settlements and services) in comparison with greenfield sites.

vi. All development in rural areas should be well designed and inclusive, in keeping and scale with its location, and sensitive to the character of the countryside and local distinctiveness.[8]

B.2.3. Regional planning

19. Sustainable national and regional planning relies on integrating the full hierarchy of plans. Figure 4 illustrates how this applies in the Pakistan and KP contexts. Higher level plans guide lower level plans and lower level plans inform high level plans ensuring that a full range of inclusive needs and priorities are accommodated. This process requires on-going, comprehensive multi-stakeholder participation.

Figure 4: Sustainable planning hierarchy



[8] GoKP. 2020. Abbottabad Land Use Plan (Draft). Peshawar: Urban Policy Unit, P&D Department, Government of Khyber Pakhtunkhwa.

20. Sustainable planning at the regional and urban scales also requires the integration of a full range of both hard and soft elements pulled together through adequate institutional capacity and stakeholder participation (Figure 5).

Figure 5: Integrated urban and regional planning

Source: HABICO

B.3. The City-Region

21. Growth in all of KP's cities has extended outside the official administrative boundaries as largely unplanned and uncontrolled "urban" extensions in rural tehsils and UCs. Much of this expansion is in the form of "ribbon" developments along highways as they have evolved. The result is that expanding cities are merging with adjacent towns and villages forming urban conurbations and regional economic corridors. There are advantages and disadvantages to this pattern. The advantages are the potential synergies created as a result of the consolidated proximity to human resources, knowledge, technologies and local markets; disadvantages center around the informal, unplanned, uncontrolled and sprawling form characterizing the existing conurbations which result in inefficient and environmentally degrading land uses, and expensive and inefficient infrastructure requirements. There are two identifiable urban agglomerations that shape the whole KP regional area:

- **Greater Peshawar Region:** (Refer to Peshawar RDP) Located in the Province of Khyber Pakhtunkhwa, the Peshawar Valley is the biggest urban settlement node with one third of the total population residing in Peshawar, Mardan, Charsadda and Nowshera.

- **Greater Abbottabad (Hazara) Region:** The districts of Haripur, Abbottabad and Mansehra, with an area of 11% of the province, contain 15% of the provincial population (estimated to be 3.33 million people). Urban development in this region is confined by mountainous terrain to the narrow strip of land mostly following the Dor River valley.

22. The Islamabad-Rawalpindi area can be considered a third conurbation. The Khyber Pakhtunkhwa's growth strategy suggests that future planning should focus on the improvement of regional economic corridors and their capacity to improve linkages to surrounding service zones.

23. The Swat Region lies outside of these two major urban and economic corridors and will also be by-passed by the proposed China-Pakistan Economic Corridor. Government's current main spatial planning strategy for the province includes the development of new towns, special economic zone (SEZ) industrial estates, and transportation infrastructure. These options, and other recommendations, are discussed in Section F.3.8. As illustrated in Map 2, the Peshawar and Abbottabad development corridors, including their link to Islamabad, intersect to form the major urban and economic conglomeration in KP. The Swat Region, and Mingora, the major urban center in the Swat Region, lies in its own valley separated from the major N-35 highway to the east going north to China and the N-45 to the west going north from Peshawar to northern Pakistan. Mingora's connection to the major transport networks is by Highway N-95 to and from the Mardan-Peshawar conurbation. N-95 follows the Swat River north and terminates in northern Swat at Kalam. Just north of Mingora, N-90 connects eastward to the major N-35 which connects Pakistan via Abbottabad to China in the north.

B.4. Urban Planning Principles

24. The same over-arching principles of integration and inclusiveness apply equally to all levels of planning. Figure 5 illustrates the importance of cross-sector integration supported by the essential elements of institutional capacity and on-going stakeholder participation.

25. To focus on the city level, the United Nations New Urban Agenda (NUA)[9] asserts that city system and urban planning play a crucial role in managing and achieving the 17 Sustainable Development Goals (SDG) – these focus mainly on setting global city planning standards, and spatial urban planning and design tools. Hence, the NUA stresses the importance of adopting a Sustainable Planning Approach to deliver sustainable development (Figure 6). A Sustainable Planning Approach is a planning process whereby the development of long-term integrated urban and territorial planning and design strategies and spatial frameworks produce positive outcomes for economic development, infrastructure efficiency and the environment.

26. The Government of Pakistan adopted policy initiatives and measures with the National report of Pakistan for Habitat III[10] and the Pakistan 2025 – One Nation One Vision – on implementing the NUA. The key issues identified included land and urban planning reform, economic growth, smart design and planning, development of integrated planning, urban resiliency, and urban governance reform. The Government of Khyber Pakhtunkhwa's Comprehensive Development Strategy 2010-2017 emphasizes urban public services, including water, sanitation, drainage, streets, and the public infrastructure required to accommodate private services in transport, agriculture, and trade.

27. Key elements of the Sustainable Planning Approach as outlined in the NUA include:

[9] United Nations, 2017. New Urban Agenda: United Nations Conference on Housing and Sustainable Urban Development (Habitat III) in Quito, Ecuador. New York: United Nations.

[10] Government of Pakistan, 2015. National Report of Pakistan for Habitat III. Islamabad: Ministry of Climate Change.

- **Public Participation** – Providing safe, equal access for all to physical and social infrastructure, basic services, service delivery and decision-making.
- **Urban Economies** – Ensuring sustainable and inclusive urban economies by leveraging the clustering and agglomeration of well-planned urbanization, including competitiveness, innovation and secure land of tenure.
- **Urban Sustainability** – Promoting clean energy, sustainable use of land and resources, protecting the ecosystem, managing urban sprawl, and building city resiliency by reducing disaster risks and mitigating climate change.
- **Urban Governance** – Strengthening institutions and financial mechanism in cities that include stakeholders, as well as providing coherence in urban development plans to enable social inclusion, sustainable economic growth and environment protection.
- **Financing Framework** – Promoting effective, innovative, and sustainable financing frameworks and instruments that will enable strengthened municipal finance and local fiscal systems in order to create, sustain, and share the value generated by sustainable urban development in an inclusive manner.

Figure 6: NUA and Sustainable Development Goals

28. The NUA also stresses the links between sustainable urban development and urban physical forms that are:

- **Compact**: keeps all needs within easy proximity while minimizing negative impacts on surrounding lands including lost agricultural and climate/environmental management lands. Infrastructure costs are reduced, excessive transport needs.
- **High-Density**: supports efficient and economic infrastructure, reduces transportation distances and related costs and pollution.
- **Multi-Use**: promotes ready access to all live, work, play elements of daily life with a minimum of transport requirements.

29. These last three planning criteria will underly the proposals for Rural development investment with their regional impacts as discussed in Section B.4. At a more detailed level, urban planning and development will adhere to internationally accepted key planning principles to reduce urban sprawl, inefficient land use, high car dependency and other urban

problems. Table 1 shows the five principles promoted by UN-Habitat to help build a sustainable relationship between urban dwellers and urban space, support the provision of local services, and increase the value of urban land. It is fully recognized that principles are guides, and adaptations for the specific Khyber Pakhtunkhwa situation are required and presented in Section B of this report.

Table 1: Principles for sustainable and integrated urban planning

Principle	Explanation	Indicators
1. Adequate space for streets and an efficient street network	An adequate level of street network that works for vehicles, public transport, and pedestrians.	• 30-45% of land is allocated for roads and parking. • At least 15-20% is allocated for open public space. • In commercial centers, roads and parking should be at least 40-60%. • 18 km of street length per square kilometer. • 800-1,000 meter distance between two arterial routes
2. High density	High density has economic, social and environmental benefits, such as efficiency by having more people per area, better public open spaces, reduced public service costs, better community service, Increased energy efficiency and decreased pollution. However, good design is required to achieve these benefits.	• UN-Habitat model: At least 15,000 people per km² (150 people/ha) • European compact perimeter block model: 3,000-6,000 people per km² (30-60 persons/ha).[11]
3. Mixed land use	Mixed land use requires some combination of residential, commercial, industrial, office, or other land use. When different functions are mixed in one neighborhood, economic and residential activities should be made compatible and well balanced by careful design and management.	• 40-60% of the floor area for economic uses, 30-50% for residential use and 10% for public service use.
4. Social mix	Houses should be available in different price ranges and tenure types in any given neighborhood to accommodate different incomes	• 20-50% of the residential floor area is distributed to low cost housing. • Each tenure type should be no more than 50% of the total.
5. Limited land use specialization	Economic diversity is the aim. Zoning regulating the use to which land may be put must avoid the creation of single function neighborhoods, such as office block neighborhoods that become deserted at night. Zoning policies need to be adjusted or changed to achieve this aim.	• Single function blocks should cover less than 10% of any neighborhood.

[11] Lehmann, S. 2016. “Sustainable urbanism: towards a framework for quality and optimal density?” In *Future Cities and Environment* (2016) 2:8. DOI 10.1186/s40984-016-0021-3.

B.5. Guidance to Applying the Principles

30. To achieve the desired sustainability there are numerous micro and macro actions to be taken in the planning and development process. Some of the macro-level guiding steps include:

i. **Strategic planning rather than master planning**: planning has historically been based on preparing future image master plans. These are typically fixed images of an ideal future vision, but lack the implementation strategies to achieve them and seldom acknowledge the social and economic processes, formal and otherwise, that are inherent in every city's development. They are not flexible to accommodate changing local conditions, available resources or investment priorities over time. The result is that globally very few master plans are ever implemented, and cities move ahead in an ad hoc, unsustainable manner. Strategic planning, on the other hand, is based on a series of guiding principles, goals, objectives and iterative processes that create cities. These may be aiming to achieve the same vision, but have the built-in flexibility to respond to changes through on-going participation, robust monitoring and evaluation and regular reviews. It is achieving the results that are paramount, not filling in all the lines on a master plan.

ii. **Incremental development**: no region or city can implement all of its desired development initiatives at one time. Consequently, a planned incremental approach is essential guided by available resources and demand-driven priorities. Planning achieves through the preparation of a series of prioritized and integrated Action Plans all based on the overall Strategic Plan. Action Plans include capital and operating budgets and implementation timelines that are sustainably achievable through analysis of the city's or region's revenue streams and implementation capacities.

iii. **Resilience actions**: as discussed above, urban/regional resilience includes environmental resilience, economic resilience and social resilience: the ability to weather unforeseen shocks to the systems.

    a. **Environmental resilience** is achieved through both managing the land and resources and developing adequate basic environmental infrastructure. Managing land and resources includes proactive land use planning that identifies, and safeguards valued environmental assets including natural drainage courses, wetlands, water resources, ground cover and biodiversity habitats. Environmental infrastructure in urbanizing locations includes provision basic water and sanitation along with solid waste management and drainage to ensure human health and well-being. Environmental resilience also requires natural disaster risk reduction and climate change adaptation actions as discussed in detail elsewhere in this report. Infrastructure resilience is partly achieved through building redundancy. There should be back-up systems to all infrastructure networks such as looped water supply networks and more than one way in and out of all communities.

    b. **Economic resilience** is best achieved through diversity. Reliance on a single industry or resource places communities in a vulnerable position if that single entity is threatened through an environmental disaster, depletion of key resources or shifting market demands. Economic resilience also requires a

secure, appropriate, consistent and transparent enabling environment including reliable physical infrastructure and legal and regulatory regimes.

c. **Social resilience** is directly connected to environmental and economic resilience (employment), but also requires the existence of health, income and security safety nets beyond just what a family can provide.

iv. **Institutional capacity and self-determination**: Adequate and appropriate institutional structures and capacities including human, technical and financial resources is the foundation for any form of sustainable development. This must be the starting point for any planned investment initiatives. To help secure those institutions - urban and regional governments in the case of this project - maximum efforts can be made to ensure self-determination by maximizing own source revenues thus reducing reliance on higher-level or external funding sources. At the same time, self-determination does not eliminate the need to fully coordinate efforts with institutions both above and below.

C. THE REGION

C.1. Geophysical Definition of the Region

31. The Swat Region (Map 3) include whole of Swat District, which lies at 72°513', 35°901' (North); 72°208', 35°618' (West); 72°156', 34°576' (South) and 72°787', 35°375' (East).

32. It is important to note that focus of RDP, being an urban development plan, remains on the Mingora city factoring in the demographic and economic influences the adjacent towns and districts may have on Mingora, and vice versa.

C.2. Geostrategic Significance of the Region

33. The Khyber Pakhtunkhwa Province as a whole, has both the advantage of being at a major trading cross-roads and the disadvantage of being a land-locked province lacking fully developed connectivity. Pakistan's main north-south and east-west trade corridors both pass through Khyber Pakhtunkhwa with Peshawar being at the cross-roads. However, the main north-south route linking Pakistan's ports to China by-passes Swat travelling to the east through Abbottabad (Map 2). Pakistan is looking forward to economic growth benefits if and when the China-Pakistan Economic Corridor (CPEC), part of China's "One Road One Belt" initiative, is completed. Although the Swat Region and the major city of Mingora are not directly on the CPEC route, they may also benefit from a general increase in economic opportunities in the adjacent Abbottabad and Peshawar Regions and can also take advantage of better regional transportation connections.

34. The region has substantial domestic, regional and international tourism potential due to its dramatic scenery and eco-tourism potential of the Karakorum and Himalaya Mountains. Tourism was an economic mainstay until 2001 when insecurity in the region virtually ended visitation. The situation is stabilizing, and tourism is seeing a resurgence.

35. Mingora is the largest urban center in the Swat District, although Saidu Sharif is the District capital. Over 2.3 million people live in Swat, of which over 330,00 reside in Mingora, making Mingora the 3rd largest city in Khyber Pakhtunkhwa after Peshawar and Mardan.[12]

36. Swat has served as a major trading hub for the Malakand Division and a historical trade route for China. The local markets provide a large variety of Chinese products. The economy revolves mostly around agriculture and tourism. The manufacturing units that are currently present are small and struggling.

37. Swat is a mountainous region, located among the foothills of the Hindukush mountain range. This range runs in the general direction of North and South and has a varied elevation within the Swat area. The average elevation is 980 m, resulting in a considerably cooler and wetter climate compared to most of Pakistan.

38. The District has lush green valleys, snow-covered glaciers, forests, meadows and plains and offers something for every type of tourist. Popular tourist attractions are Kalam, Bahrain, Miandam, Madyan, Fizagut, and the skiing resort at Malam Jabba. Swat also offers historical places like Butkara, Shingardar stupa, and Saidu stupa.

[12] Government of Pakistan. 2017. *Provisional Summary Results of 6th Population and Housing Census-2017*. Islamabad: Pakistan Bureau of Statistics, GoP.

C.2.1. China-Pakistan Economic Corridor

39. CPEC is a USD 54 ban package of investments in road rail, fiber-optic cables, and oil and gas pipelines linking the ports of Gwadar and Karachi to Xinjiang Province in China. Of the total, USD 11 ban is intended for improvements to transport infrastructure.[13]

40. CPEC comprises two vertical legs that connect the ports of Gwadar and Karachi on the Arabian Gulf to China. In KP, the two vertical links of CPEC come together for the final leg to Xinjiang in a horizontal link that connects Pakistan with Afghanistan, India, and China (Map 2).

Map 2: Highway network of CPEC

Source: CPEC Maps: Highways Network of CPEC (http://cpec.gov.pk/map-single/1).

41. CPEC will provide critical infrastructure to support the economic growth of Pakistan. China and Afghanistan are, respectively, the second and fourth-largest importers of Pakistani goods and commodities. In 2018, Pakistan exported USD 1.8 billion of commodities to China and USD 1.5 billion to Afghanistan. Exports to China have been declining in past years, whereas exports to Afghanistan have been somewhat stable and appear to have resumed

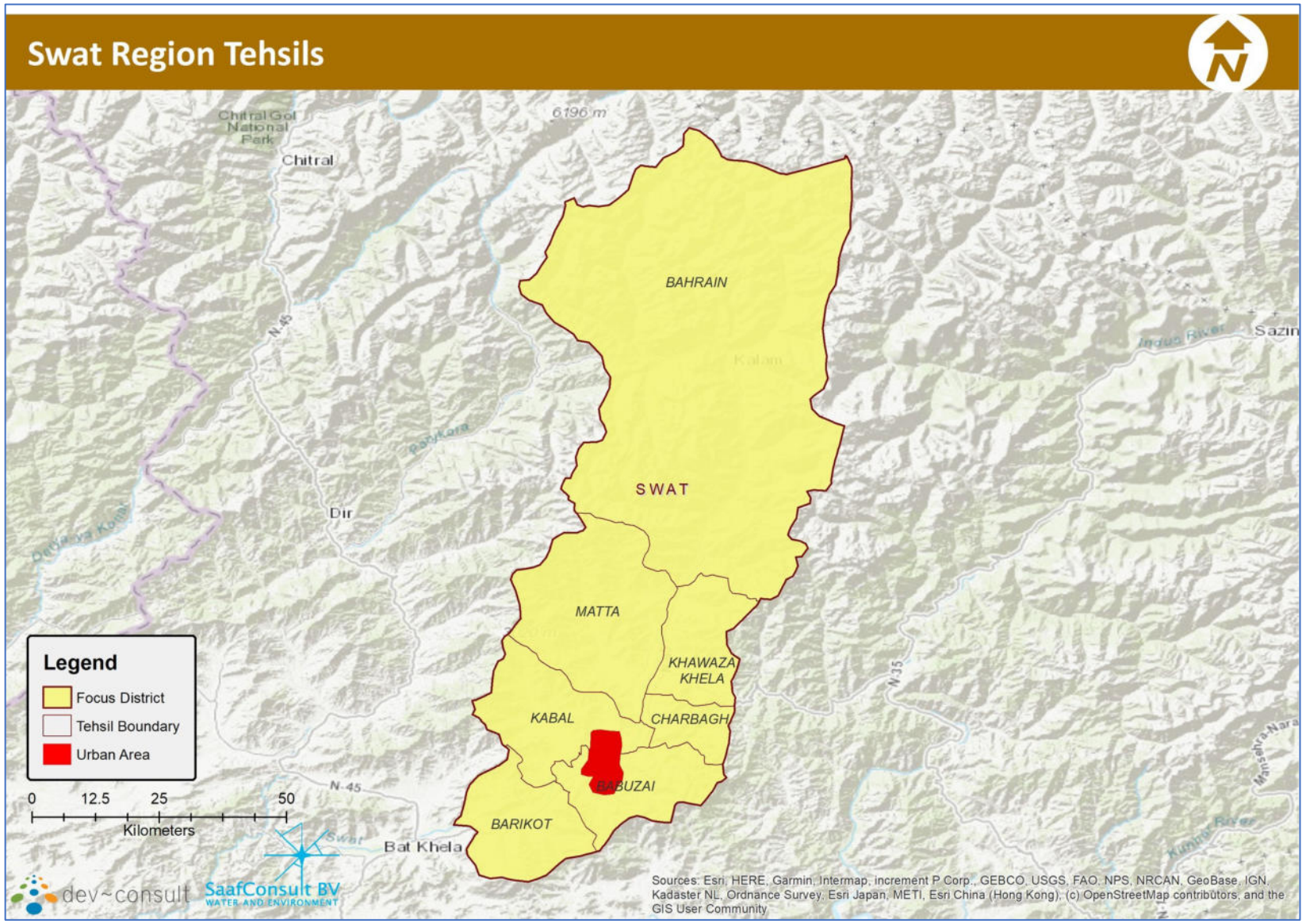
13 P&DD 2018 Khyber Pass Economic Corridor (KPEC) Project Component II IDA Loan.

growing in recent years. What impact CPEC may have on the Swat Region is not yet determined, but a further opening up of northern Pakistan in general may well have positive developmental impacts.

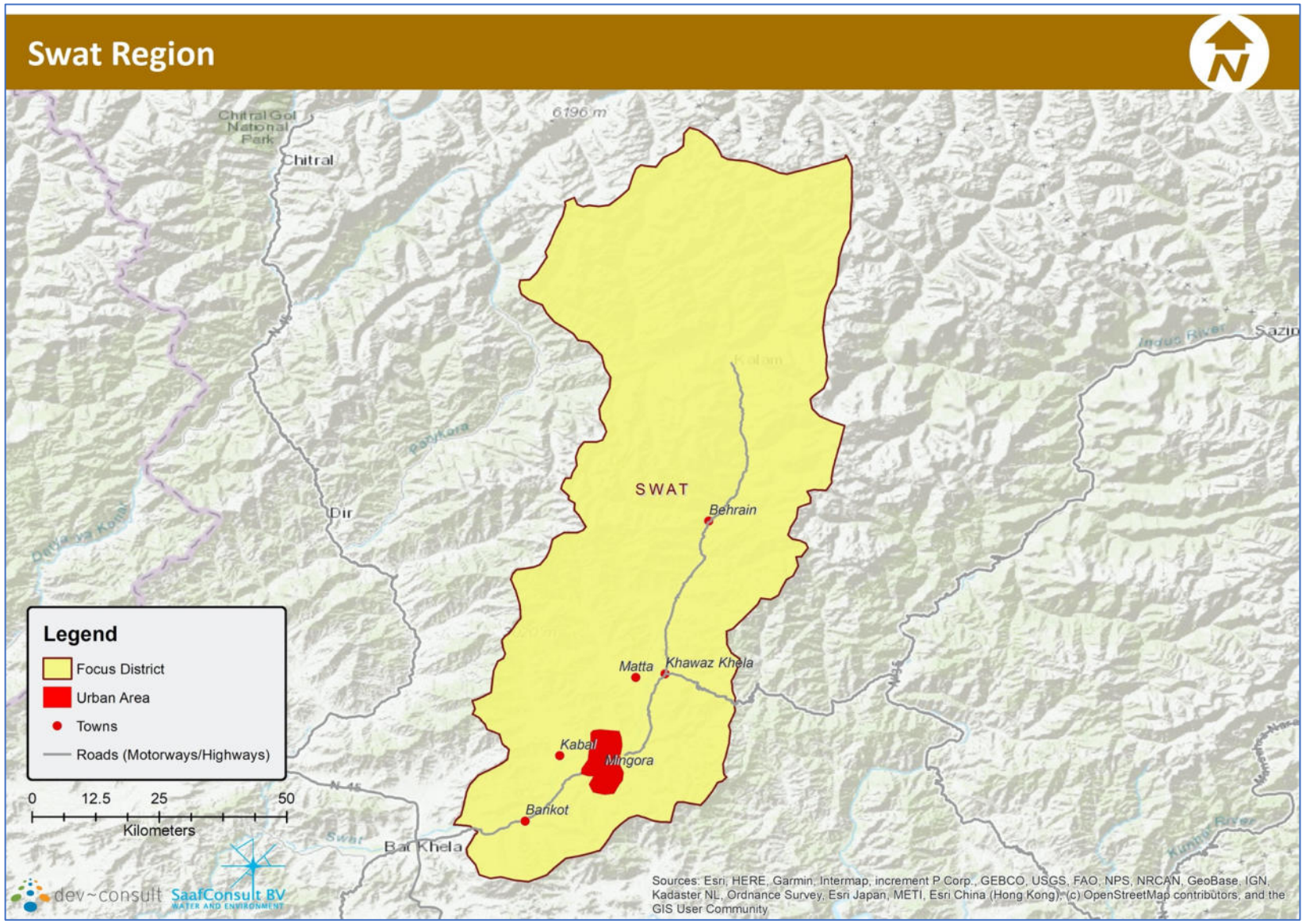
42. The urban center along the final leg of CPEC into Xianjing that is nearest to Mingora is Thakot, 3.5 hours east of Mingora. This distance implies there are meaningful transport costs getting to a market connected to CPEC and that benefiting from the CPEC project is likely to be challenging for the Swat District.

43. The Constructions of the Express way of the project is also a significant step towards the achievement of the goals fixed by the provincial government in providing roads communication facility which will lead to enhancement of the Govt; revenue through tourism, easy access of products of Swat District to different areas of the country as well as to develop the marble industry.

Map 3: Swat Region: tehsils



Map 4: Swat Region: urban areas



C.3. Land Use: Provincial and Regional

44. This section reviews existing land use patterns at two levels: provincial and Peshawar regional. Section F.2 details existing land uses at the district and major urban center levels and then goes on to discuss proposals for future sustainable land uses considering the combined influences of social and economic development, environmental and climate change impacts and adaptation, and overall contributions to regional growth and outward linkages.

C.3.1. Khyber Pakhtunkhwa Land Uses

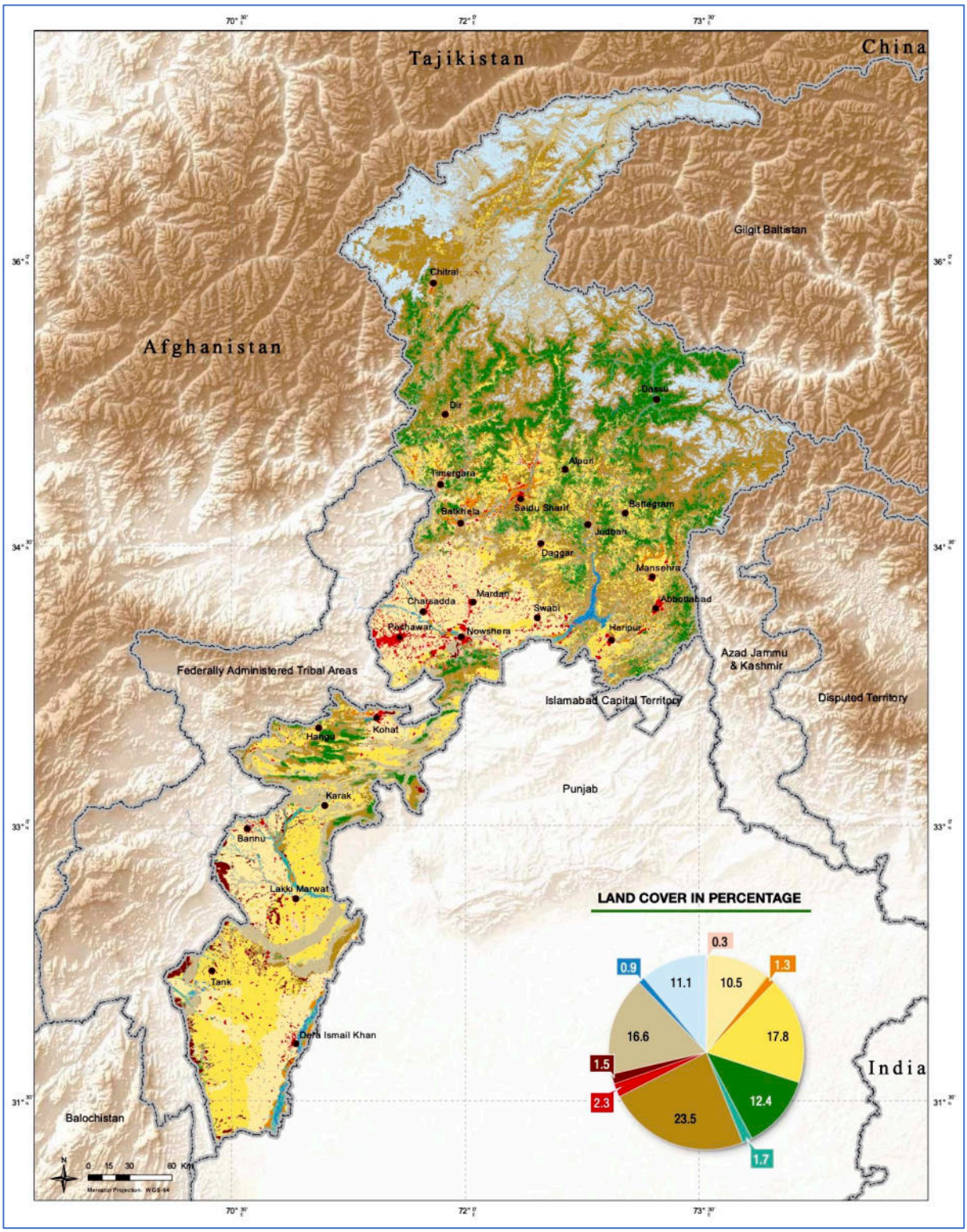
45. Khyber Pakhtunkhwa encompasses a total area of approximately 101,000 km^2. Land usage is divided into 13 categories as defined by the 2016 UNDP Land Use Atlas for KP/FATA. Map 5 and Map 6 illustrate their detailed distribution for the entire KP Province following the merger of KP and FATA. Table 2 provides a detailed breakdown of areas and percentages. For purposes of this study, it is likely sufficient to simplify this and cluster the land uses into 4 categories as presented in Figure 7**.** It is important to note that only 25.1% of KP's total land area is used for agriculture, while 72.9% is either bare land or with natural vegetation coverage or other non-agriculturally suitable conditions. Only 2% of KP is built-up settlements.

Table 2: Land use: Khyber Pakhtunkhwa; including ex-FATA (2016)

Land Use Category		Area (km^2)	Area (%)
Orc	Orchards	305.28	0.30%
Clr	Crop irrigated	8,045.79	7.90%
Cls	Crop marginal and irrigated saline	130.77	0.13%
Cfp	Crop in flood plains	1,292.14	1.27%
CRa	Crop rainfed	15,520.25	15.25%
NtM	Forest – natural trees	16,077.67	15.79%
NvM	Natural vegetation in wet areas	1,775.61	1.74%
Rsh	Rangelands – natural shrubs and herbs	22,744.31	22.34%
Bui	Built-up	2,049.41	2.01%
Bar	Bare areas	2,244.87	2.21%
Bav	Bare areas with sparse natural vegetation	22,555.05	22.16%
Wet	Wet areas	756.19	0.74%
Snw	Snow and glaciers	8,296.14	8.15%
	TOTAL	101,793.48	100.00%

Source: Land Cover Atlas of Pakistan: The Khyber Pakhtunkhwa and FATA, FAO, 2016

Map 5: Land Use: Khyber Pakhtunkhwa; excluding ex-FATA (2016)

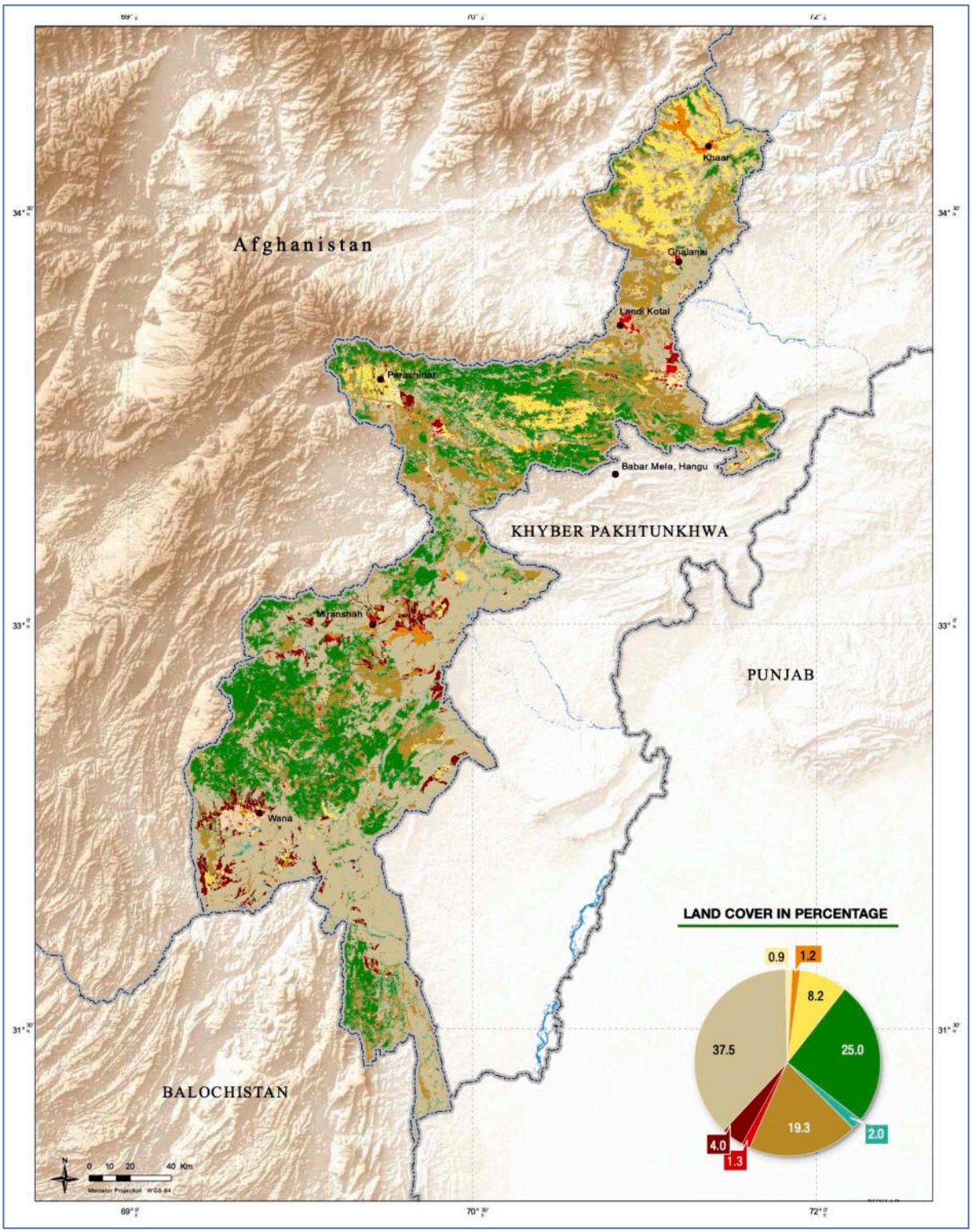


DISTRIBUTION OF LAND COVER IN THE PROVINCE OF KHYBER PAKHTUNKHWA IN KM²

	Orc	Clr	Cls	Cfp	CRa	NtM	NvW	Rsh	Bui	Bar	Bav	Wet	Snw
Total in km²	240.30	7,796.87	113.73	961.28	13,285.57	9,259.95	1,240.88	17,487.92	1.703.64	1,148.94	12,354	707.74	8,257.93
Total in %	0.3	10.5	0.2	1.3	17.8	12.4	1.7	23.5	2.3	1.5	16.6	0.9	11.1

Source: Land Cover Atlas of Pakistan: The Khyber Pakhtunkhwa and FATA, FAO, 2016.

Map 6: Land Use: ex-FATA; excluding Khyber Pakhtunkhwa (2016)

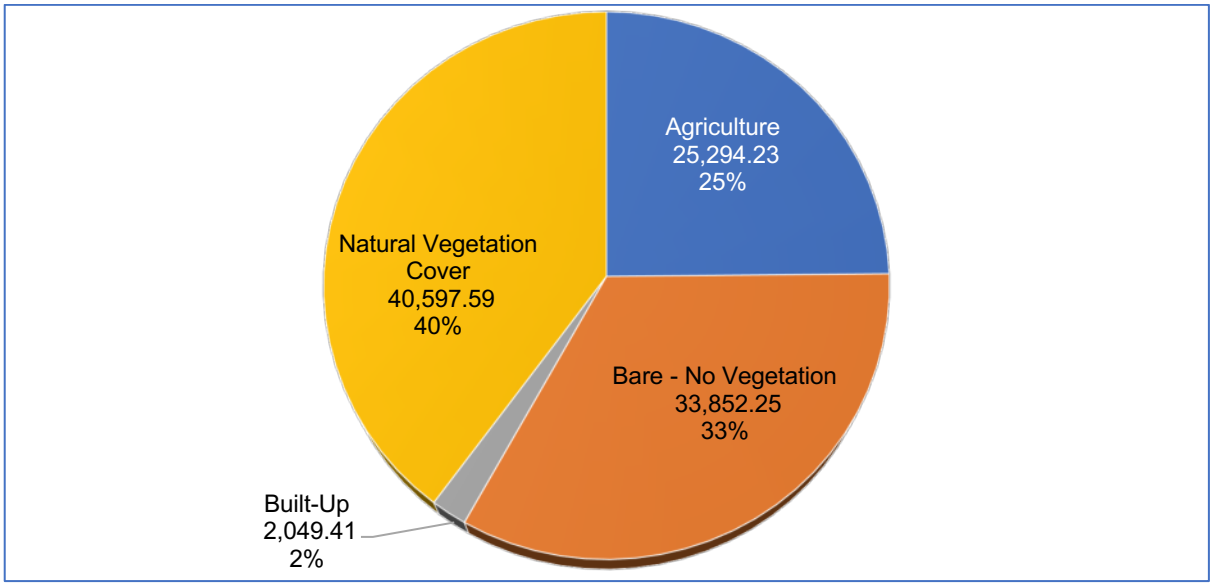


DISTRIBUTION OF LAND COVER OF FATA IN KM²

TRIBAL AREA	Orc	Clr	Cls	Cfp	CRa	NtM	NvW	Rsh	Bui	Bar	Bav	Wet	Snw
Total in km²	64.98	248.92	17.04	330.86	2,234.68	6,817.72	534.73	5,256.39	345.77	1,095.93	10,201.05	48.45	38.21
Total in %	0.2	0.9	0.1	1.2	8.2	25.0	2.0	19.3	1.3	4.0	37.5	0.2	0.1
Grand total													**27,234.74**

Source: Land Cover Atlas of Pakistan: The Khyber Pakhtunkhwa and FATA, FAO, 2016.

Figure 7: Land use summary: Khyber Pakhtunkhwa



Source: Land Cover Atlas of Pakistan: The Khyber Pakhtunkhwa and FATA, FAO, 2016

C.4. Environmental Conditions

46. Mingora lies at the beginning of the Swat Valley and directly besides the Swat River, one of the tributaries of the Indus River, at an altitude of 932 meters. Mingora and the Swat Valley lie in the northern regions of KP. The image below shows Mingora and the full extent of the Swat Valley up to Kalam.

47. Topographically, Swat is a mountainous region, located among the foothills of the Hindu Kush mountain range. Two mountainous fringes project from the Hindu Kush forming the valley. The Western mountain range forms the boundary between Swat and Upper and Lower Dir district (Swat-Dir divide). The altitudes range from peaks above 2000 meters around Kalam to 1053 at Charbagh.[14]

48. The climate in Mingora is warm and temperate. Mingora has a significant amount of rainfall during the year. This is true even for the driest month. According to Köppen and Geiger, this climate is classified as Cfa.[15] The average annual temperature in Mingora is 19.3°C. The rainfall is approximately 897 mm per year.[16]

[14] Google Earth.

[15] Under the Köppen climate classification, Cfa and Cwa climates are either described as **humid subtropical climates** or **mild temperate** climates. This climate features mean temperature in the coldest month between 0 °C (32 °F) or −3 °C (27 °F) and 18 °C (64 °F) and mean temperature in the warmest month 22 °C (72 °F) or higher.

[16] https://en.climate-data.org/asia/pakistan/khyber-pakhtunkhwa/abbottabad-1298/

Table 3: Climate data for Mingora

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature (°C)	7.5	10.3	14.2	19.1	24.5	29.2	29	27.8	25.6	20.4	14.6	9.4
Min. Temperature (°C)	2.1	4.8	8.2	12.7	17.3	21.6	22.6	21.9	18.9	12.9	7.4	3.5
Max. Temperature (°C)	13	15.8	20.2	25.6	31.7	36.8	35.4	33.7	32.3	28	21.8	15.3
Avg. Temperature (°F)	45.5	50.5	57.6	66.4	76.1	84.6	84.2	82.0	78.1	68.7	58.3	48.9
Min. Temperature (°F)	35.8	40.6	46.8	54.9	63.1	70.9	72.7	71.4	66.0	55.2	45.3	38.3
Max. Temperature (°F)	55.4	60.4	68.4	78.1	89.1	98.2	95.7	92.7	90.1	82.4	71.2	59.5
Precipitation / Rainfall (mm)	81	98	125	90	46	31	130	134	64	28	22	48

Source:

49. Approximately 2.1 million tourists visit Mingora and Swat Valley annually. Unregulated touristic development has placed hotels and tourism structures within the river basin and the flood plains, increasing flood risks during times of higher flow rates. Flooding is a common occurrence in Mingora and the Swat Valley, with some of the worst floods occurring in 2010.

50. Another flood related risk in the upper reaches of the Swat Valley, which can also affect Mingora, are Glacial Lakes Outburst Floods (GLOFs). The mitigation of risks from GLOFs was included in the National Climate Change Policy launched in 2013. Efficient monitoring of GLOF risks was made possible by creating site maps, installing observatories and automated

weather stations in the pilot sites. These were effective in reducing risks from GLOF as the Meteorological Department issued early warnings and alerted communities to potential dangers. Community based disaster risk management training equipped people with techniques to protect themselves during future flash floods and other climate change related disasters.[17]

51. Another major risk in the Swat Valley are landslides that occur due to unregulated land development, agriculture and touristic development. The Swat River carries large amounts of sediment, with average summer discharge of 4488 cusecs, while winter average discharge is 932 cusecs.[18] The combination of high discharges, high sediment deposits that can change the flow pattern of the river and unplanned structures cause flooding, cost lives and result in economic damages on a yearly basis.

C.5. Climate Change

C.5.1. Key Factors and Drivers and Potential Impacts of Climate Change – Mingora

52. In Table 4, main impacts of the climate change projections for Mingora are presented:[19] The table refers to Balakot/Abbottabad but is relevant as proxy for the Swat Valley and Mingora. Mingora and Balakot lie at approximately the same latitude in KP and are both surrounded by mountains. They are also more or less at the same altitude (Mingora 932 meters, Balakot 995 meters). In terms of climate modelling the downscaling of projected climate change scenarios to individual cities is too detailed. The models are comparable across similar regions.

Table 4: Summary of future climate indices of Balakot/Abbottabad

No	Future Climate Indices	2011-2040	2041-2070	2071-2100
1.	**Number of frost days:** Annual count of days when daily minimum temperature *less* than 0°C	Trends are not significant	Trends are not significant	Trends are not significant
2.	**Number of summer days:** Annual count of days when daily maximum temperature *greater* than 25°C	RCP 4.5 shows an increase of 16.3 days.	Trends are not significant	19.8 days are expected to be increased as per RCP 8.5.
3.	**Heat wave duration indicator:** Annual count of days with at least 6 consecutive days when maximum temperature *greater* than 90th percentile of the 30-year period.	Trends are not significant	Trends are not significant	RCP 8.5 shows a 15.9 days increase.
4.	**Cold spell duration indicator:** Annual count of days with at least 6 consecutive days when minimum temperature *less* than 10th percentile	Trends are not significant	Trends are not significant	Trends are not significant.
5.	**Diurnal temperature range:**	Trends are not significant	Trends are not significant	Trends are not significant.
6.	**Simple precipitation intensity index**: Annual total precipitation divided by the number of wet days (defined as PRCP *greater than or equal to* 1.0mm) in the year	Trends are not significant	Trends are not significant	Trends are not significant
7.	**Number of heavy precipitation days:** Annual count of days when **PRCP *greater than or equal* to 20mm**	Trends are not significant	RCP 4.5 shows a decline of 10.6 days.	Trends are not significant
8.	**Number of heavy precipitation days:** Annual count of days when **PRCP *greater than or equal* to 25mm**	Trends are not significant	Trends are not significant	Trends are not significant
9.	**Consecutive dry days:** Maximum number of consecutive days with RR *less* than 1mm	RCP 4.5 shows an increase of 16.1 days.	RCP 8.5 projects an increase of 22.2 days.	RCP 8.5 projects an increase of 18.4 days.
10.	**Consecutive wet days:** Maximum number of consecutive days with RR *greater* than 1mm	RCP 8.5 projects an increase of 12.5 days.	Trends are not significant	Trends are not significant
11.	**Annual total wet-day precipitation**: Annual total PRCP in wet days (RR *greater than or equal* to 1mm)	Overall precipitation has no significant trend, although inter-annual variability will prevail.	RCP 4.5 shows 681 mm decline.	Overall precipitation has no significant trend although, inter-annual variability will prevail

17 GLOF | UNDP in Pakistan.

18 District Disaster Management Plan (2015-2020) District Swat, Khyber Pakhtunkhwa

19 CDIA, Urban Resilience Assessment KPK, Abbottabad, 2017

Source: CDIA, Urban Resilience Assessment KPK, Abbottabad, 2017.

53. From the table it can be summarized that for Mingora there are two significant impacts of climate change projected. These are (i) a significant increase in summer days (above 25 degrees) and (ii) a significant increase in dry days (maximum number of consecutive days with RR[20] less than 1mm). So overall Mingora is likely to become hotter and drier.

54. Since Mingora lies next to the Swat river a certain amount of cooling can be expected in Mingora along the riverbank that may mitigate the temperature increases somewhat.

55. In general climate change in KP tends to accentuate the extremes. Temperatures will increase, rainfall/snowfall will become more concentrated and erratic in terms of periodicity, and extreme weather events will possibly increase, placing increasing pressure on already ailing infrastructure.

C.5.2. Risk and Vulnerability Assessment

56. In Swat Valley, flooding is a recurrently occurring phenomenon. In the upper reaches flash flood characteristics dominate, while downstream Madyan[21] river flooding dominates the scene. Downstream Madyan, Swat River enters into a wide basin and braids into numerous channels. The Swat river is a meandering river which frequently changing its course/channel. In Swat Valley, almost every year in summer, the peak discharge overflows the natural levees and in effect causes damage to scarce agricultural land, housing, and other sectors. In certain areas deep riverbank erosion is common and is engulfing the farmland and built-up areas. Primarily, the active floodplain of Swat River was formerly a vast grazing land, but with the passage of time, the increasing population has encroached on the floodplain for cultivation and other developments without taking into consideration the risks of floods. This in turn has enhanced the flood vulnerability to various developments. For centuries people lived within the valley of Swat River with the reality of flooding as a natural hazard and with the fact that it has a potential to cause damages to people and their belongings. Land use regulations have been widely used as a non-structural flood mitigation strategy in reducing exposure of people and their property. It was found from the analysis that frequent human encroachments onto the flood channel and absence of effective land use regulations have been identified as the major factors responsible for heavy flood losses.[22] On Map 7, the flood inundation areas for 2010 can be seen, also as an illustration as to which low-lying areas are vulnerable to flooding.

57. The nearly completed Swat Motorway, (also called Swat Expressway) is a high-speed route of approximately 160 km (90 Miles). Swat Motorway starts from Kernal Sher Khan Interchange on the M1 Motorway and terminates in the vicinity of the Chakdara bridge on National Highway N-45 at the far south of Swat. This motorway provides easier access to touristic sites in the Swat Valley, thereby drastically increasing tourism in the valley. Recent experience has shown that this leads to completely uncontrolled disposal of solid waste, liquid waste (sanitary waste) and haphazard development of tourism infrastructure such as hotels, boarding houses and restaurants.

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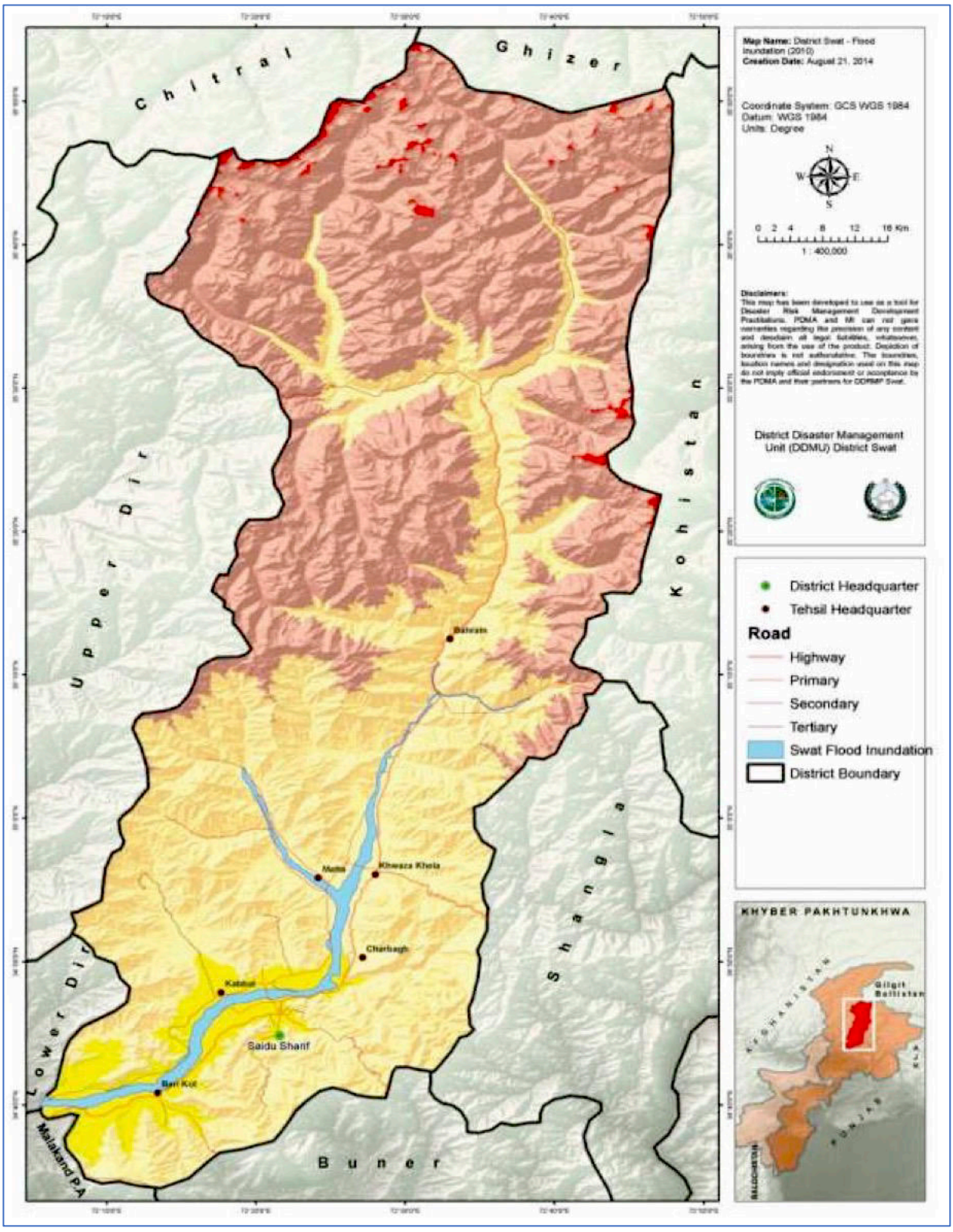
20 Rainfall – meteorological variable.

21 Approximately half-way between Mingora and Kalam on the east-bank of the river.

22 Adapted from Flood Disasters and Land Use Planning in Swat Valley, Eastern Hindu Kush, in Land Use Management in Disaster Risk Reduction (pp.179-195)Chapter: Land Use Management in Disaster Risk Reduction Publisher: Tokyo, Spinger. Editors: Michiko Banba, Rajib Shaw.

Map 7: Flood inundation in Swat District (2010)



Source: GoKP. 2015. *District Disaster Management Plan (2015-2020) District Swat, Khyber Pakhtunkhwa*. Provincial Disaster Management Authority, GoKP.

58. Prevailing hazards in Swat Valley are:

- **Floods**: Flooding has always been pervasive in the Swat Valley. But possible as a consequence of climate change the temporal distribution of rainfall has become

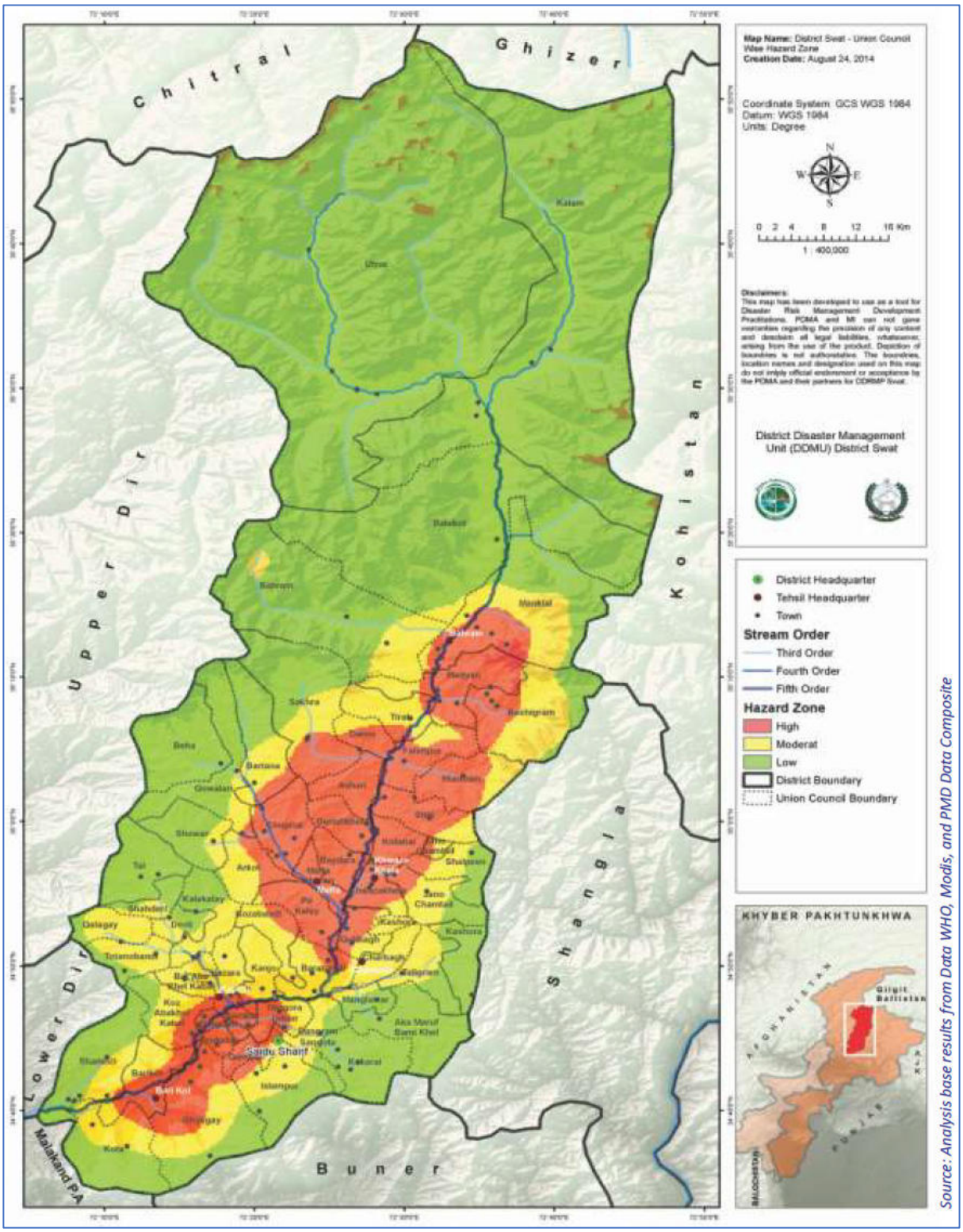
condensed into cloud bursts of heavy rainfall which contribute to increased flash floods and erosion of soils.

- **Hailstorms**: During the months of June, July and August heavy thunderstorms increasingly bring hail, which destroys fruit, vegetable and cereal crops, for which the Swat District is renown.
- **Snow Fall**: During the winter months the upper reaches of Swat District receive considerable amounts of snow. These snow periods slow down public life, and access to markets and services are severely limited.
- **Earthquakes**: Whereas climate change does not affect the frequency or intensity of earthquakes, it is important to note that in terms of natural hazards, Swat District has been at the receiving end of major earthquakes, the most recent one in 2005.
- **Landslides:** Mountain slopes in the Karakoram Hindukush mountain range are known for their steep incline, between 40% and 60%. These steep slopes enable landslides. This is compounded by soil erosion and unregulated (touristic) development, resulting in frequent landslides that block roads, destroy infrastructure and endanger lives.
- **Conflict**: Internal conflict in the KP and FATA areas, the remoteness of its upper reaches and the recent conflict between the Taliban and the Pakistan Army has made life in the Swat District insecure.
- **Dengue**: In 2013 a dengue epidemic in Swat District brought the virus to the District and has added to the hazards of living in Swat.[23]

59. In Map 8, the hazardous zones of the district are visualized, while Table 5 provides risk index for all union councils in Swat District.

[23] Adapted from District Disaster Management Plan (2015-2020) District Swat, Khyber Pakhtunkhwa

Map 8: Union Council-wise hazard zone in District Swat



Source: GoKP. 2015. *District Disaster Management Plan (2015-2020) District Swat, Khyber Pakhtunkhwa*. Provincial Disaster Management Authority, GoKP.

Table 5: Union Council wise risk indexing in the district

UC Name	Risk Indexing	UC Name	Risk Indexing
Baydara	Very High Risk	Jano Chamtail	Moderate Risk
Chuprial	Very High Risk	Kashora	Moderate Risk

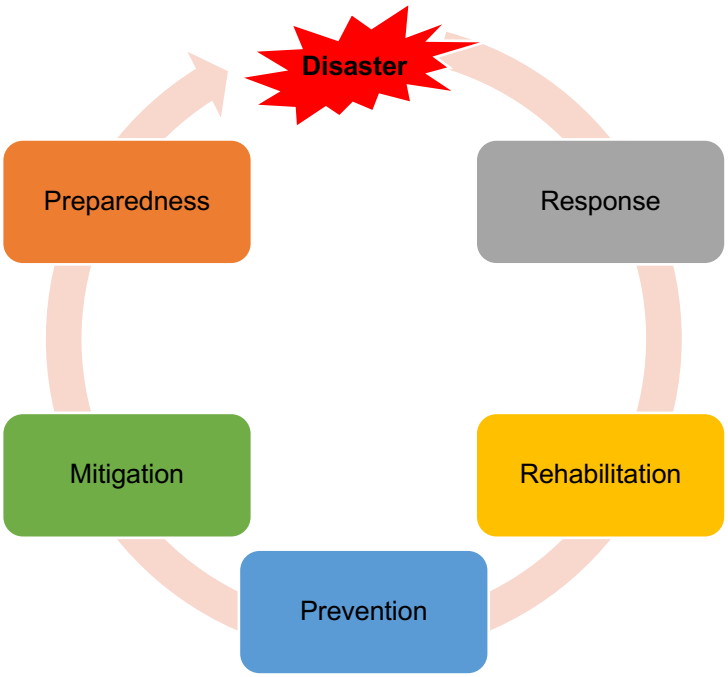
UC Name	Risk Indexing	UC Name	Risk Indexing
Dorishkhela	Very High Risk	Miandam	Moderate Risk
Kotanai	Very High Risk	Fatehpur	Moderate Risk
Khwazakhela	Very High Risk	Madyan	Moderate Risk
Devli	Very High Risk	Kashora	Moderate Risk
Gulibagh	Very High Risk	Manglawor	Moderate Risk
Charbagh	Very High Risk	Tirat	Low Risk
Mingora	Very High Risk	Bashigram	Low Risk
Odigram	Very High Risk	Mankial	Low Risk
Tindodag	Very High Risk	Islampur	Low Risk
Mattakharare	High Risk	Kota	Low Risk
Ashri	High Risk	Totanobandi	Low Risk
Shin	High Risk	Kala Kalay	Low Risk
Pir Kalay	High Risk	Aka Maruf Bami Khel	Low Risk
Sangota	High Risk	Kokari	Low Risk
Qambar	High Risk	Showar	Low Risk
Ghaligay	High Risk	Gowalari	Low Risk
Darmi	High Risk	Bartana	Very Low Risk
Kanjo	High Risk	Sakhra	Very Low Risk
Bar Aba Khel	High Risk	Bahrain	Very Low Risk
Hazara	High Risk	Balakot	Very Low Risk
Kabal	High Risk	Shamozi	Very Low Risk
Dangram	High Risk	Tal	Very Low Risk
Barikot	High Risk	Beha	Very Low Risk
Arkot	Moderate Risk	Balakot	Very Low Risk
Kozabandi	Moderate Risk	Utroor	Very Low Risk
Koz Aba Khel	Moderate Risk	Kalam	Very Low Risk
Shapleen	Moderate Risk		

Source: GoKP. 2015. *District Disaster Management Plan (2015-2020) District Swat, Khyber Pakhtunkhwa*. Provincial Disaster Management Authority, GoKP.

C.5.3. Disaster and Climate Risk Management

60. Using the disaster Risk Management Cycle, we have analyzed the disaster and climate risk management of the province of KP, and specifically how it applies to the District of Swat (Figure 8).

Figure 8: Disaster risk management cycle



C.5.3.1. Response and Rehabilitation

61. Response during times of a disaster, as well as rehabilitation efforts, are coordinated by the provincial PDMA, and is usually implemented with the assistance of the Army and the Army Core of Engineers. Other proposals and responses are proposed in Section K.2.

C.5.3.2. Prevention

62. Climate change mitigation is a particularly important element in addressing the impacts of climate change. However, on a scale of the province of KP, mitigation is not an option. The causes of climate change are broad and complex and cannot be tackled at a provincial level. However, prevention or mitigation of the impact is an especially important aspect of disaster risk management, and is something that the province is actively engaged in through maintenance of flood protection and transport infrastructure, development of preparedness plans, etc. (see also the sections below).

C.5.3.3. Mitigation

63. In the case of rises in temperatures, and the consequent impacts on the urban areas of Swat District, aggressive mitigation measures will have to be taken. In section K.3 the way forward to address mitigation measures is elaborated further.

64. Specifically, for the District of Swat, land zoning, re-design of flood protection structures on the basis of flood zone planning, development of inundation zones, and construction of stores for crops and livestock during flooding season are some of the mitigation measures that are proposed.

C.5.3.4. Preparedness

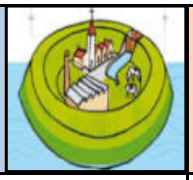
65. Pakistan has invested heavily in the establishment and capacity building of climate risk management and disaster risk reduction institutions. The former federal Ministry of

Environment was re-styled into a Ministry of Climate Change, and a federal National Disaster Management Authority (NDMA) was established. The NDMA also has its Provincial branches through which it implements its mandate. The PDMAs develop contingency plans for Monsoon and Winter periods, coordinate with federal and provincial institutions in cases of disasters and calamities, and report on damages and loss.

66. The PDMA for KP was established on 27 October 2008 on the basis of the National Disaster Management Ordinance 2006. It was subsequently ratified through the National Disaster Management Act 2010. According to the PDMA of KP the district if Swat is very vulnerable to disasters. Their analysis is similar to the analysis presented above.

67. Overall Pakistan suffers from a number of capacity issues that exacerbate the impacts of disasters. The table below provides on overview of the state of flood management in Pakistan.[24]

Figure 9: Flood management: salient features

Flood Protection (Defence, Regulation) 	**Disaster Management (Early Warning Flood Modelling)** 
• Outdated Infrastructure • Maintenance problematic • Small storage capacity	• Time-tested but outdated procedures • In some areas not implemented • Incomplete flood forecasting • Ungauged areas • Data sharing issues • Huge costs - damage & relief • Ongoing professionalisation relief
Flood-proof Spatial Planning (Mitigation and adaptation) 	**Governance (Institutional, financial, legal)**
• Frequent floods but also droughts • Uncontrolled spatial planning • Hurdles in drainage system • Hurdles in flood plain conversion	• Non-matching SOPs • Flood management plans unclear status • Little active basin management • Transboundary nature • Climate change and glacier melt

[24] Scoping Mission, Water Management And Flood Control In Pakistan, Netherlands Embassy, Netherlands Enterprise Agency, 2015.

D. GOVERNANCE AND STAKEHOLDERS

D.1. Legal and Regulatory Framework

D.1.1. Statutory Framework

68. A detailed review of legal and regulatory framework identified that more than dozen laws are directly or indirectly relevant for urban development and management of the Swat region, these include provincial and federal enactments which deal with the issues of land use planning, building control and urban development are listed in Table 6. A more detailed account of these laws, their relevant subordinate legislative frameworks, and the legal regimes which they give rise to, will be discussed in the following sub-sections.

Table 6: Legislation related to urban development

S. #	Title	Territorial Extent	Legislature
1.	The Khyber Pakhtunkhwa Local Government Act, 2013 (*as amended*)	Province-wide	Provincial
2.	The Cantonments Act, 1924	Country-wide	Federal
3.	The Cantonments Ordinance, 2002	Country wide	Federal
4.	The Khyber Pakhtunkhwa Housing Authority Act, 2005	Province-wide	Provincial
5.	The Khyber Pakhtunkhwa Urban Mass Transit Act, 2016	Province-wide	Provincial
6.	The Khyber Pakhtunkhwa Establishment of District Development Advisory Committees Act, 1989	Province-wide	Provincial
7.	The Khyber Pakhtunkhwa Antiquities Act, 2016	Province-wide	Provincial
8.	The Khyber Pakhtunkhwa Housing Facilities for Non-Proprietors in Rural Areas Act, 1987	Province-wide	Provincial
9.	The Khyber Pakhtunkhwa Forest Ordinance, 2002	Province-wide	Provincial
10.	The Khyber Pakhtunkhwa Highways Authority Ordinance, 2001	Province-wide	Provincial
11.	The Khyber Pakhtunkhwa Environmental Protection Act, 2014	Province-wide	Provincial
12.	The Land Acquisition Act, 1894	Province-Wide	Provincial
13.	The Khyber Pakhtunkhwa River Protection Ordinance, 2002	Province-wide	Provincial
14.	The Khyber Pakhtunkhwa Small Industries Development Board Act, 1972	Province-wide	Provincial
15.	The Khyber Pakhtunkhwa Investment Facilitation Agency Ordinance, 2002	Province-wide	Provincial
16.	The Khyber Pakhtunkhwa Taking Over of the Industrial Estates and Economic Zones Act, 2016	Province-wise	Provincial
17.	The Khyber Pakhtunkhwa Regional and District Health Authorities Act, 2019	Province-wide	Provincial

D.1.2. Overview of Laws

69. In the paragraphs which follow, an overview of the relevant statutes listed in Table 6 will be given, with a brief description of their land use planning, building control and urban development dimensions.

D.1.2.1. The KP Local Government Act, 2013

70. The Khyber Pakhtunkhwa Local Government Act, 2013 (the "**LGA**") is the enactment through which the local government system in the province has been re-organized and consolidated, in furtherance of the constitutional mandate contained in Article 140A of the Constitution of the Islamic Republic of Pakistan, 1973 (the "**Constitution**") which calls for the establishment of a local government system (in all provinces) and devolution of political, administrative and financial responsibility authority to the elected representatives of such local governments.

D.1.2.1.1 Scope and application

71. The LGA applies to the whole of the province except cantonment areas, or any other area excluded by the provincial Government through notification.[25] The Government by notification may also exempt any area or areas from all or any of the provisions of the Act.[26] The local governments established under the LGA function within the Provincial framework and are obligated to faithfully observe federal and provincial laws, and not impede or prejudice the exercise of executive authority by the Government.[27] As per the newly inserted Section 3(3) of the LGA, the Government is to provide a policy framework for functions devolved to the local governments which the said governments are obligated to follow, for the purposes of uniformity. Furthermore, the Government is to prescribe rules of business for local governments, notifying *inter alia* the "*structure and working of local government administration*", "*allocation of business*", and "*coordination of local council business*."[28]

72. The LGA has undergone multiple amendments since it was first enacted, the most recent and comprehensive one of which was brought about by the Khyber Pakhtunkhwa Local Government (Amendment) Act, 2019 (the "**2019 Amendment**").

D.1.2.1.2 Tiers of local government

73. Section 5 of the LGA stipulates the tiers of local government, which after the 2019 Amendment have been reduced from three (3) to two (2), with the abolishment of the previous highest tier, i.e., the district level local governments. The highest tier of local government after the 2019 Amendment is the Tehsil Local Government (TLG)[29] for tehsils, and the equivalent City Local Government (CLG)[30] for Urban Centers. The lower tier comprises of Village Councils (VC) for a Village[31] in rural areas, and Neighborhood Councils (NC) for a

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25 Section 1(2).

26 Section 1A.

27 Section 3.

28 Section 5(4).

29 Section 5(1)(c). As per its definition in section 2(gg-ii), the Tehsil Local Government consists of the directly elected Chairman (previously referred to in the LGA as Nazim) and the Tehsil Local Administration, which in turn is comprised of the Assistant Commissioners, Tehsil Municipal officers and heads of devolved offices. (section 2(gg-i)).

30 Section 5(1)(a). Though the term "Urban Center(s)" is not defined in the LGA; the Government is to notify City Local Governments for Urban Centers of the district, which are to be established at each Divisional Headquarters. There are seven (7) Divisional Headquarters in the province. The Government may also notify any other contiguous group of Neighborhoods as a City Local Government (section 21(5)), or any contiguous village and neighborhood councils in any other district to be a City Local Government (section 6(6)).

31 The basic rural unit in the LGA is the "*Village*", defined in section 2(ii) as "*an integrated and contiguous human habitation commonly identified by a name and includes a Dhok, Chak, Kalay, Goth, Gaown, Basti or any other comparable habitation.*"

Neighborhood[32] in areas with urban characteristics. Both VCs and NCs are to be notified by the Government after a delimitation exercise to be carried out by the Election Commission of Pakistan.[33]

74. At the tehsil level, there also exist tehsil councils, which function as a supervisory/legislative body, working in tandem with the TLG.[34] The functions of a tehsil council include approving taxes, fines and penalties, bye-laws, annual budgets, long and short term development plans.[35]

75. As per Section 8 of the LGA, the provisions relating to TLGs and tehsil councils shall *mutatis mutandis* apply to the CLGs, unless otherwise provided in the LGA,[36] and references in the LGA to tehsil councils are to be read as referring to City Local Councils.

D.1.2.1.3 Authority of governments

76. The executive authority of the TLG vests in its Chairman who is responsible for its business being carried out in accordance with the Act and other laws.[37] The Chairman is directly elected through party-based elections, with the whole tehsil acting as a single constituency.[38] In performance of his functions, the Chairman is to be assisted by the Tehsil Local Administration as given in Tenth Schedule.[39]

77. The VCs and NCs comprise of the members as provided in Part-II of the Eleventh Schedule,[40] who are directly elected on a non-party basis.[41] The candidate securing the most votes in election to the general seats of the VC or NC shall be its Chairman,[42] in whom the executive authority of the VC or NC vests.[43]

D.1.2.1.4 Devolution and transfer from predecessor governments

78. On commencement of the 2019 Amendment, the administrative and financial authority for management of the offices of Government specified in First Schedule in a tehsil stand devolved to the TLG of that tehsil.[44] On such commencement, the organization, functions, administration and financial management of local councils in the province were also to come under the administrative and financial control of the "successor local governments" as

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32 The basic urban unit in the LGA is the "Neighbourhood", defined in section 2(s) as: "a mohallah, a group of streets, lanes or roads, in areas with urban characteristics, designated as Neighbourhood by Department."

33 Section 26.

34 Section 24.

35 Section 25.

36 For the purposes of City Local Governments, Chairmen are referred to as Mayors, whereas the Tehsil Local Administration is the City Local Administration.

37 Section 21(3).

38 Section 21(2).

39 Section 21(4). The Tenth Schedule lists *inter alia* the government machinery corresponding to the devolved offices in Schedule 1.

40 Section 27(1).

41 Section 27(2).

42 Section 27(3).

43 Section 27(4).

44 Section 22. Through successive amendments to the LGA, the number of devolved offices has been reduced from the original 24, and now stand at 8.

provided in Section 121.[45] As per Section 121(2), the Local Government Elections and Rural Development Department, Government of KP (the "**Department**") shall retain and continue to exercise control over Local Area Development Authorities in the province.[46]

79. As per the newly inserted Section 121A of the LGA, on commencement of the 2019 Amendment, the new local governments to be established thereunder are to succeed the "*functions, rights, assets and liabilities of the local councils established before the commencement of the*" 2019 Amendment, in the following manner:

(a) City District Government to **City Local Government (CLG)**

(b) District Government (other than City District Govt) to respective **Tehsil Local Government (TLG)**

(c) Tehsil Municipal Administration or Town Municipal Administration, shall stand integrated with respective **Tehsil Local Government (TLG)**

(d) village councils in rural areas with respective **village councils**.

(e) neighborhood councils with respective **neighborhood councils**.

80. In light of the above amendments, it can be seen that the 2019 Amendment has done away with the district-level tier of local government, and has mandated the transfer of its functions to the tehsil/city level, and the division and distribution of its rights, assets etc. amongst the various TLGs and CLGs.

81. As per Section 121A(2), the Department shall, as soon as possible, designate an officer to divide the rights, assets and liabilities of the district governments as well as City District Government Peshawar, including adjustment of staff, amongst the local governments. The decision of the designated officer is to be final.

D.1.2.1.5 Land use planning, building control and urban development functions

82. Land-use planning, building control and urban and rural development would all fall under the definition of "*municipal services*" provided in **Section 2(r)**, which include:

> *"intra-city network of water supply, sanitation, conservancy, removal and disposal of sullage, refuse, garbage, sewer or storm water, solid or liquid waste, drainage, public toilets, express ways bridges, flyovers, public roads, streets, foot paths, traffic signals, pavements and lighting thereof, public parks, gardens, arboriculture, landscaping, bill boards, hoardings, firefighting, land use control, zoning, master planning, classification, declassification or reclassification of commercial or residential areas, markets, housing, urban or rural infrastructure, environment and construction, maintenance or development thereof and enforcement of any law or rule relating thereto"*
>
> **[emphasis supplied]**

[45] Section 22(2); the reference to section 121 seems to be an error, and probably ought to refer to section 121A instead.

[46] It is unclear as to which Development Authorities this is in reference to, as the term is not defined in the LGA. However, through the KP Local Government (Second Amendment) Act, 2019, it has been clarified that the Galiyat Development Authority and Kaghan Development Authority are excepted from this section.

83. Municipal services (including water and sanitation) is one of the offices devolved to local governments under the LGA.[47]

84. The primary responsibility for land use planning and building control under the LGA has been given to the Chairmen, TLG,[48] and Mayors, CLG.[49] Whereas, the tehsil councils have the power to approve long and short term development plans proposed by the Chairman, TLG.[50] In addition to this power which is available to all tehsil councils, City Local Councils have the function and power to "*approve master plans, zoning, land use plans, including classification and reclassification of land, environmental control, urban design, urban renewal and ecological balances*"[51] and "*approve development schemes for beautification of areas along rivers, canals, streams*".[52]

85. At the lower tier, VCs and NCs have been assigned the responsibility to report to the District Administration and TLG in respect *inter alia* of "*violation of land use plans, building codes, rules and bye-laws*".[53]

D.1.2.2. The Cantonments Act, 1924 and the Cantonments Ordinance, 2002

86. Presently, both the Cantonments Act, 1924 and the Cantonments Ordinance, 2002 are functional to certain extents. The election provisions of the Cantonment Ordinance are operative since 2003[54] while other provisions are still to be operationalized till such time the Cantonments Act, 1924 remains operative.

87. The Cantonments Act, 1924 provides that the Federal Government may by notification declare any place it requires for service of it forces[55] to be a cantonment. It may include within a cantonment any local area.[56] Hence, cantonments can extend and develop as per the notifications of the Federal Government. Under the Act, cantonments may be classified into three categories, Class I cantonments in which one hundred thousand or more civil population reside; Class II, where between one hundred thousand to fifty thousand reside., Class III, where less than fifty thousand civil population resides.[57]

88. The institutional structure provided under the Cantonments Act, 1924, consists of various Cantonment Boards.[58] Constitution of the Board varies according to the Class of the

47 Serial No. (vi) of the First Schedule.

48 Who under section 23A(f) have the power to "prepare spatial plans for the tehsil including plans for land use and zoning and disseminate these plans for public enquiry." It is unclear how and by whom these public enquiries are to be carried out. Furthermore, under section 23A(l), they have been given functions pertaining to "urban and housing development, including urban improvement and upgrading, and urban renewal and redevelopment, with care being taken to preserve historical and cultural monuments."

49 Who have the additional function under section 25A(a) of reviewing implementation of "*rules and bye-laws governing land use, housing, markets, zoning, roads, traffic, tax, infrastructure, under passes, and inter-town streets*".

50 Section 25(d).

51 Section 25A(2)(a).

52 Section 25A(2)(b).

53 Section 28(1)(d).

54 By SRO 686 (I)/2003, dated 3rd July 2003, published in gazette on 9th July 2003.

55 Section 3.

56 Section 4.

57 Section 13.

58 Section 10.

Cantonment.[59] The Boards are responsible for handling all development issues including provision of sufficient water, sanitation, disposal of solid waste, safety of buildings, maintenance of roads and pavements etc.[60] All development and expansion within the Cantonment area is done by the Cantonment Boards under the Act, even the extension of cantonments is done by the Federal Government and the provincial or city governments have no power to check or control the expansion.

89. Whilst the Cantonments Ordinance, 2002 provides for spatial planning, land-use, land sub-division, land development and zoning by the Cantonment Administration,[61] this provision and other related provisions are not yet operative.

90. The construction, reconstruction, alteration or extension of any building[62] is to be approved and monitored by the relevant Board under the Cantonments Act, 1924.

D.1.2.3. The KP Housing Authority Act, 2005

91. The KP Housing Authority Act, 2005 was promulgated to establish a comprehensive system of town planning at different levels in the province to ensure systematic integrated growth of urban and rural areas and to achieve the object of "Housing for All", including housing for shelter-less Government servants, and to that end to create an Authority for proper achievement of the aforesaid objects.

92. The Act applies throughout the province, and the Authority created thereunder is comprised of the Minister for Housing, or the Advisor or Special Assistant to the Chief Minister on Housing; the Secretary Housing Department; representatives of Planning and Development Department, the Finance Department, and the Local Government and Rural Development Department; Member Board of Revenue; three representatives of Builders/Construction Industry and Architects and Consultants; any two persons to be nominated by the Government from retired Engineers. the DG of the Authority.[63]

93. The powers and functions of the Authority include,[64] to: (i) implement the national housing policy, coordinate and liaise with the Federal Government, District Governments, Tehsil and Town Municipal Administrations, concerned departments and Government Agencies; (ii) identify state and other lands for developing low income and low cost housing schemes; (iii) facilitate construction of multi-story flats (low cost housing) in collaboration with the District Governments and Tehsil and Town Municipal Administrations; (iv) facilitate land availability and develop comprehensive land information for planning & development requirements for 5-10 years; (v) to prescribe mechanism for acquisition of land, on land sharing basis; (vi) deal with the issues relating to rehabilitation and settlement of landless owners in the prescribed manner; (vii) develop packages in which prime state land occupied by *katchi abadi*, shall be offered to the private developers for commercial use; provided they arrange finance or relocation of *katchi abadi*; (viii) formulate provincial land use policy, plan and prepare regional development plans (Inter District Spatial Planning-Master Plans) for an integrated, coordinated and systematic planning to ensure orderly growth and development of

59 Section 13A.

60 Chapter VIII, IX and X.

61 Section 16.

62 Section 178 A & 179.

63 Section 3(3).

64 All powers and functions listed in Section 4(2).

physical infrastructure such as highways, railways, industrial zones, conservation of forest reserves and provision of electricity, telephone, sui gas, etc.; (ix) plan a comprehensive program for the development of satellite, intermediate, secondary and industrial towns to reduce migration and drift to big settlements; (x) develop Geographic Information System for efficient land documentation and information related to housing and town planning. (xi) provide technical assistance to the District Governments and Tehsil and Town Municipal Administrations towards capacity building in all matters related to housing and town planning.

94. The Act has conferred upon the Authority the following powers in relation to the preparation of schemes:

(a) The Authority, in consultation with the Government Agency[65] concerned shall prepare and execute schemes for the purposes of this Act in various urban and rural areas, subject to Government's approval;[66]

(b) The Authority may modify a scheme so prepared in consultation with Government Agency concerned;[67] and

(c) The Authority may give directions to the Government Agency concerned to execute work, take over and maintain works and services, and provide amenities in relation to land falling under any scheme.[68]

95. Where the Authority is satisfied that any direction given by it under section 18 with regard to any scheme has not been carried out by the Government Agency concerned, it has the power under section 19 to itself undertake any work for the execution of that scheme, the cost of which shall be borne between the Authority and concerned Government Agency as agreed, or on the failure to so agree, by the Government.

96. The Authority, in the discharge of its functions, is obligated to act and be guided by directions given by the Government from time to time.[69]

97. The Authority also possesses the power under section 21 to declare, by notification in the official Gazette, *"any locality to be a Controlled Area*", for the purposes of the Act and to issue in respect of such locality "*such directions as it considers fit and appropriate and do all such things as may be necessary for the prevention of haphazard growth, encroachments and unauthorized construction in such area*."

D.1.2.4. The KP Urban Mass Transit Act, 2016

98. Though primarily concerned with planning, establishing, coordinating and regulating mass transit system and supporting systems in the province, the KP Urban Mobility Authority created thereunder has certain land use and planning functions as well. Pursuant to Section 4(2)((i) it has the power to "*examine the plans for all land use master plans, schemes and projects primarily related to infrastructure and land use but not limited to that initiated by any*

65 As per section 2(d), "*Government Agency*" includes- (i) a division, department, bureau, section, commission, board, office or unit of Government. (ii) District Government, Tehsil and Town Municipal Administration, a Development Authority or any other body, company or corporation (whether autonomous or semi-autonomous) owned or controlled by Government;".

66 Section 16.

67 Section 17.

68 Section 18.

69 Section 20.

Department or authority of Government, as to ensure their compatibility, suitability and sustainability with present and future mass transit systems, schemes and projects. In this respect, the Authority shall assist the relevant Departments of Government to the extent of mass transit systems, planning and infrastructure and issue no objection certificates for the master plans in accordance with long term plans, strategies, roadmaps and projects pertaining to mass transit systems."

D.1.2.5. The KP Establishment of District Development Advisory Committees Act, 1989

99. The KP Establishment of District Development Advisory Committees Act, 1989 and was set up to provide for proper planning and supervision of local level development activities in the province, with each district to have its own District Development Advisory Committee.

100. The Committees consist of all the members of the Provincial Assembly from that District; such other elected representatives as the Government may notify as co-opted members; such heads of Attached Departments at the district level as may be co-opted by the Committee; as well as the District Nazim, City District Nazim, Tehsil Nazim/Town Nazim,[70] as the case may be, as co-opted members.[71] Co-opted members have no right to vote.[72]

101. The Committees are to formulate and recommend:[73]

(a) proposals for Annual Development Program (ADP) of the District and communicate it to the P&D Department.

(b) the list of schemes to be implemented under the Rural Development Program, other than those of the Union Councils.

(c) locations or sites for such development projects as may be included in the local program of the ADP.

102. Additionally, the Committees may even determine the location and select sites for development schemes in primary, middle and high school education, rural health and public health engineering.

103. The Committees are also empowered to formulate and recommend location and sites for such development projects in such other sectors as may be including the ADP of any local area which may even include policies for electrification of villages in any part of a district.

D.1.2.6. The KP Antiquities Act, 2016

104. The Act repeals the KP Antiquities Act, 1997 and provides for the protection, preservation, development and maintenance of antiquities in the Province of the Khyber Pakhtunkhwa.

105. In terms of land use and building control, the Act states *inter alia* that:

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70 Note that the 2019 Amendment to the LGA has now done away with the posts of District Nazim and City District Nazim, whereas the Tehsil Nazim and Town Nazim are now referred to as the Chairman TLG, and the Mayor CLG, respectively.

71 Section 3(1).

72 Section 3(2).

73 Under Section 4.

(a) The Director of the Directorate of Archaeology and Museum, KP may cause land containing antiquities to be acquired by the Revenue Department under the Land Acquisition Act, 1894.[74]

(b) The Government may declare any immovable property as protected antiquity,[75] and notwithstanding anything contained in any other law, no development plan or scheme, or new construction may be undertaken or executed within two hundred feet of a protected immovable antiquity without the approval of the Director.[76]

(c) No mega development project for residential, commercial, industrial, dams, irrigation system, drainage system or any other activity in either the public of private sector is permissible without first obtaining clearance from the Director.[77] The Government in consultation with the Advisory Committee is to decide whether to issue a NOC in this regard.[78]

(d) The District Governments are to take all possible measures to protect, preserve and promote the culture heritage of the Province. The District Government shall be facilitated by Sports, Culture, Tourism, Archaeology, Museums & Youth Affairs Departments to undertake the management, conservation and promotion of the cultural heritage located within their jurisdiction. The District Government shall allocate sufficient funds for protection, conservation, restoration, rehabilitation and promotion of such antiquities.[79]

D.1.2.7. KP Housing Facilities for Non-Proprietors in Rural Areas Act, 1987

106. The Act was promulgated to provide for housing facilities to non-proprietors in rural areas of the province. The relevant authorities thereunder are the Government and Allotment Committees to be constituted under Section 5 of the Act, in each District for which a scheme has been prepared. The Committees are to consist of the Members of the Provincial Assembly from that District and such other members as may be prescribed. The Chairman of the District Planning and Development Advisory Committee shall be Ex-officio Chairman of the Allotment Committee.[80]

107. Under Section 3 of the Act, subject to the availability of funds, the Government may prepare schemes in rural areas for developing housing colonies for free of cost grant to non-proprietors. The Government may reserve a percentage of plots for allotment to Mustahqeen-e-Zakat.[81] Plots not exceeding seven marlas may be allotted free of cost to non-proprietors in such schemes, subject to terms and conditions, solely for the construction of houses thereon for their residence.

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74 Section 12.

75 Section 15.

76 Section 55.

77 Section 56(1).

78 Section 56(3).

79 Section 71.

80 Section 5(2).

81 Defined in section 2(f) as: “a person who is entitled to receive money from the Zakat Funds established under the Zakat and Ushr Ordinance, 1980 (Ord. No. XVIII of 1980)”.

D.1.2.8. The KP Forest Ordinance, 2002

108. The law relating to protection, conservation, management and sustainable development of forests and natural resources. The Ordinance provides for four categories of forest areas, Reserved Forest,[82] Village Forest, Protected Forest and Guzara Forest and wastelands. The government by notification may constitute any land as reserved forest and a forest settlement board would determine and deal with all rights of persons within the said area,[83] and the government may revise after five years any arrangements made with the community regarding right to pasture or forest produce etc.[84] The Government may de-notify any reserved forest[85] and it may also assign to a village community the rights of the Government; such assignment and all such land would be called village forest.[86] The Government may declare any forest or wasteland which is not reserved forest to be protected forest.[87]

109. The Conservator of Forests may, for certain purposes specified in Section 36 prohibit (i) encroachment by breaking up or clearing of land for cultivation or construction of sheds, building, road, enclosure or any other infrastructure, or its occupation as sites for sheds, buildings or enclosures; (ii) pasturing of cattle; (iii) burning or clearing of vegetation; (iv) cutting of particular types of trees listed in Schedule-I or removal of forest produce; (v) quarrying of stones, mining of minerals, burning of lime or charcoal; (vi) hunting, shooting, poisoning of water, or setting of traps and snares; or (vii) polluting of soil or water by sewerage, sewage, domestic or industrial waste or any other pollutants, or means.

110. Guzara forest is protected wasteland of the villages set aside in the areas comprising the Districts of Haripur, Abbottabad, Mansehra, Kohistan and Batagram and elsewhere in the Province.[88] While the control of Guzara forests and wasteland shall be with the Conservator of the forests, for conservation and sustainable development,[89] management shall vest in the Department.

111. The Ordinance provides for a Forest Force for enforcement of the provisions of the Ordinance. Forest officers have wide powers including the power to arrest, seize timber and other forest produce etc. The law provides for penalty and punishment for violations of the law.

112. The Department will approve provincial forest policy, strategic management plans, forest management plans, operational plans and village plans shall be managed by authorized forest officer. For adequate and timely availability of funds for implementation of forest management plan there shall be a forest development fund.

D.1.2.9. The KP Highways Authority Ordinance, 2001

113. The Ordinance was promulgated in 2001 to establish a Highways Authority in KP for the purposes of planning, promoting, organizing and implementing programs for construction,

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82 In which, as per Section 26, there can *inter alia* be no encroachments, construction, trespass or grazing, fire or damage to trees, quarrying, polluting, hunting or shooting.

83 Section 5.

84 Sections 15-16.

85 Section 27.

86 Section 28.

87 Section 29.

88 Section 2(23).

89 Section 35.

development, operations, repairs and maintenance of Provincial Highways and other roads specially entrusted to it by the Government.

114. The Ordinance set up the KP Highways Authority (KPHA) and the KP Highways Council, which is comprised of the Chief Minister KP, the Ministers of Works, Finance, and Environment, the ASC P&D, Secretary Finance, Secretary Works & Services, and the Managing Director of the Authority.

115. The KP Highways Council has been empowered[90] to review and recommend perspective plans, five years plans for highways and roads in the province, lay down policies and guidelines to be followed by the Authority, appraise review and approve projects and to recommend the annual budget of the Authority to Government for approval.

116. The KP Highway Authority has wide ranging powers over the roads and highways approved by the KP Cabinet.[91] Not only does the Authority advise the Government on matters related to provincial highways and other roads, it may also levy and collect tolls on highways and such other roads and bridges entrusted to it.

117. The Authority, *inter alia,* is also required to prepare a master plan for the development, construction operation and maintenance of highways and roads in KP for the approval of the Cabinet, and may even notify the right of way around highways, roads, and bridges around which it would be illegal to make any changes to the land use without the consent of the Authority.

D.1.2.10. The KP Environmental Protection Act, 2014

118. After devolution of the subject of environment to the Provinces post the 18th Amendment to the Constitution, in 2014, the KP Legislature passed the KP Environmental Protection Act, 2014, repealing the application of the Pakistan Environmental Protection Act, 1997 to the Province.

119. The Act provides for the protection, conservation, rehabilitation and improvement of the environment, for the prevention and control of pollution, and promotion of sustainable development.

120. The Act establishes the Environmental Protection Agency for KP as well as the Environmental Protection Council comprising relevant government officials for the purposes of setting the policy direction of the Authority.

121. The Act under Section 12 thereof empowers the Government to seek a strategic environmental assessment, of socio-economic development, industrial and agricultural development, urban and rural development, land use and water use management; economic zones or industrial parks and estates; transport and infrastructure; solid, municipal and industrial waste; tourism; or any other plan or policy likely to have an adverse impact on environment; Additionally, the Government may also require a strategic environmental assessment for the prevention of water pollution through improper sanitation and control flow of sanitation water into the rivers. specifying separate zones for poultry and cattle farming and slaughtering houses.

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90 Section 6.

91 Section 10.

122. The Government may also advise and require development authorities and local governments to include such measures and take such steps, as it deems necessary, to modify the policy or development plan according to environmental objectives.

123. The Environmental Protection Council on the other hand is, *inter alia,* empowered[92] to approve comprehensive environmental[93] policies, action plans and ensure their implementation; approve the Khyber Pakhtunkhwa Environmental Quality Standards; provide guidelines for the conservation of, renewable and non-renewable resources, solid waste management and water sanitation; co-ordinate integration of the principles and concerns of sustainable development into development plans and policies at the provincial, district and local levels by formulating/prepared district and provincial strategies; develop a comprehensive Land Zonation strategy to save the agriculture and forest land., crucially, to facilitate establishment of district level environmental councils in a prescribed manner where the District Nazim[94] of Local Government is also member in addition to the concerned government departments/ stakeholders.

124. The Environmental Protection Authority, along with the usual powers of issuing EPOs, setting the relevant standards and implementing the same, is also empowered to prepare, in co-ordination with the appropriate Government Agency or local council[95] and in consultation with the concerned sectoral Advisory Committees where established, environmental policies for the approval of the Council;[96] establish standards for the quality of the ambient air, water and land, establish different standards for discharge or emission from different sources and for different areas and conditions as may be necessary, establish a list of areas, with the approval of the Council, in which any class of activities or projects[97] shall not be carried out or shall only be carried out subject to certain specified safeguards, assist Government Agencies, local councils, local authorities and other persons to implement schemes for the proper disposal of wastes so as to ensure compliance with the Khyber Pakhtunkhwa Environmental Quality Standards, impose ban through an official notification, on commencement or operation of any activity or work or mobility or transport in a particular area or premises, by declaring it as environmentally sensitive or protected or prohibited, for a particular time period as and when required to safeguard the natural environment, prevent and control pollution with prior approval of the Government, and conduct IEEs & EIAs of projects likely to have adverse environmental impacts and suggesting mitigation measures for the same.

125. The EPA has sufficient powers to enforce the provisions of the Act and any rules, regulations or standards that may be framed thereunder. Environmental Tribunals have also been set-up in the Province to specifically deal with matters arising under the Act.

92 Section 4.

93 Environment, *inter alia,* includes land and buildings (Section 2(r)).

94 Note that the 2019 Amendment to the LGA has now done away with the post of District Nazim.

95 Local council means a body constituted under a law regulating local governments (Section 2(ii)).

96 Section 6.

97 As per Section 2(ss), “Project” includes change in land use, urban development, alteration, expansion, repair, decommissioning, etc. of buildings and works.

D.1.2.11. The Land Acquisition Act, 1894

126. The Land Acquisition Act 1894 (LAA) provides for acquisition of land and empowers the provincial government to acquire land for public purpose[98] or for a Company.[99] LAA provides a complete process how public notices and hearings to be conducted before land may be acquired.

127. Under the LAA whenever Collector of a District considers certain land in a locality is required for public purpose or for a company a notification[100] shall be published along with a public notice identifying certain area for proposed for acquisition. All persons interested in the land who would be entitled to compensation may object to the public purpose, area of land or compensation.[101] After hearing of objection the Commissioner my declare specific area for acquisition for public purpose or company.

128. After finalizing the specific area, the Collector after hearing the interested person determine the final compensation[102] and announce the Award.[103] Before taking possession of the land the Government shall pay compensation as been determined.[104] There is an absence of settlement provisions under the law.

129. However, in cases of urgency after determining public purpose, but before determining compensation land may be acquired within fifteen days of giving notices under section 9.[105] For most large scale urban and even rural public project over the years, urgency provisions were most prevalent without really determining the urgency.

D.1.2.12. The KP River Protection Ordinance, 2002

130. The Ordinance was promulgated in 2002 to “provide for the protection of the aquatic ecology, water quality, economic and environmental value of the rivers and their tributaries in KP” and extends to such length of rivers or their tributaries, or any particular river or stream or any part of a river or its tributary, as the Government may, from time to time, by notification in the Official Gazette, specify.

131. The Ordinance prohibits[106] construction, or any related physical works of any commercial building or non-commercial building, or any other developmental work, within two hundred feet to be measured along the slope (lay off land) beyond high water limit on either side of the rivers or their tributaries or on a space within the limits between the banks of a river as well as the deposit or release, directly or indirectly, of any substance into the river or their tributaries, in excess of the environmental quality standards notified from time to time and the disposal, directly or indirectly, of any solid waste or hazardous waste or other additional substances specified and notified by Government into rivers or their tributaries.

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98 Section 3 (f) Public purpose has not been adequately defined, the definition merely includes a few things

99 According to the courts even though the law does not specifically state that Companies have to be have a public purpose but that is assumed.

100 Section 4

101 Section 5A (the law requires all persons interested may object to the acquisition and may be heard in person or through written objections.)

102 Section 9

103 Section 11

104 Section 16

105 Section 17

106 Section 3.

132. Additionally, and specifically in the context of land use and zoning, the Government may prepare land use and zoning plans for the catchment area or a part thereof for a specific river or for all the rivers and their tributaries to which this Ordinance applies and require mandatory compliance with such plans. The area up to fifteen hundred feet starting from two hundred feet to be measured along the slope (lay off land) beyond the high water limits on either side of the rivers or their tributaries has been designated as the Provincial Control Area, wherein construction or other developmental activities shall be undertaken in accordance with the land use and zoning plans prepared under this Ordinance.

133. The Government may even make regulations, or apply any of the existing building control regulations, under any other law for the time being in force, to control construction of buildings in the catchment areas of any river or a part thereof and any organization or individual, who intends to construct bridge, culverts, crossing structure and flood protection works on rivers, streams, nullahs, drains and water channels has to obtain an NOC, before the commencement of works.

134. The law also specifically deals with the issue of sanitation[107] and requires owners, proprietors or managers of all existing hotel or other building, within 200 feet of both side of the river to ensure construction of proper septic tanks and a soaking pit or an alternate arrangement acceptable to the Authorized Officer, and of new buildings, houses, hotels, etc., within the Provincial Control Area to make similar arrangements. No new building, house, structure, or hotel used for commercial or non-commercial purposes, within the Provincial Control Area is allowed to be made unless the above arrangements are followed, however, a kacha house built by a local inhabitant for his agriculture purposes is exempted from the above.

D.1.2.13. The Khyber Pakhtunkhwa Small Industries Development Board Act, 1972

135. This Act establishes a Small Industries Development Board for the Province of Khyber Pakhtunkhwa for promoting development of industries in the Province with particular reference to small and cottage industries.

136. The General Manager of the Board is to be its Chief Executive and manage the day to day affairs of the Board in light of the instructions given by the Government and the Directors of the Board. There are to be at least four directors on the Board to be headed by its Chairman.

137. The Board is to render assistance in the establishment and development of cottage, small and other industries in the province and, inter alia, prepare and submit schemes to Government for the development of cottage, small and other Industries as well as to lay down policy for the promotion of small industries in the Province.

138. The Board may also establish small industrial estates and sponsor industries for that estate. The Board may also in special cases with the approve of the Government establish small industrial estates in less developed areas as well as establishing artisan colonies, design centers, workshops, institutes for promotion and development of handicrafts.

[107] Section 7.

D.1.2.14. The Khyber Pakhtunkhwa Investment Facilitation Agency Ordinance, 2002

139. The Ordinance establishes an Investment Facilitation Agency for the Province as well as an Investment Facilitation Council comprising the CM KP, Minister Industries, ASC P&D, Secretary Industries, Secretary Finance, Chairman & MD Bank of Khyber, a representative of KP Chamber of Commerce, /APTMA etc. and the MD of the Agency.

140. The Investment Facilitation Council is responsible for the general direction and administration of the Agency and is to be guided by concerned Government Policy. The Council is to advise the Board of the Authority on industrial priorities and preferences being pursued by the Federal Government.

141. The Agency is empowered to manage existing industrial estates/EPZ, establish more industrial estates where required, provide one-window investment facilities for private, public-private and foreign joint-venture investment; manage the affairs of Provincial Committee of Investment (PCOI) and to coordinate with the Federal Board of Investment (BOI); apprise the Ministry of Industries, Government of Pakistan, on impediments and problems being faced by the industrial sector in the KP; identify new investments and industries and to prepare opportunity studies and feasibility studies in various sectors. explore new markets, goods and services and to identify viable small, medium and large scale enterprises based upon indigenous raw material, cost effective with good market prospects within the country and abroad.

142. However, some of the industrial estates falling under the jurisdiction of the Ordinance have been transferred to the Khyber Pakhtunkhwa Economic Zones Development and Management Company.

D.1.2.15. The Khyber Pakhtunkhwa Taking Over of Industrial Estates or Economic Zones Act, 2016

143. The Act provides for the taking over of the Industrial Estates or Economic Zones of the Khyber Pakhtunkhwa Development Authority by the Khyber Pakhtunkhwa Economic Zones Development and Management Company and to transfer all its assets and liabilities including employees to the said Company.

144. The KPEZDMC, being a corporate entity, may be used as a vehicle by the KP Government to execute projects which may otherwise be in the competence of the KP Government under some other law to carry out, or to implement policies or carry out such other functions as the KP Government may nominate it for under any law for the time being in force.

145. Under the Act, the Industrial Estates or Economic Zones mentioned in the Schedule thereto, along with all assets, liabilities, records, matters ancillary thereto and employees of the KP Development Authority established under the KP Development Authority Act, 1972, have been transferred to this non-statutory corporate entity, i.e., the KPEZDMC.

146. The following economic zones have been transferred to the KPEZDMC: Hattar Industrial Estate Phase VII, Rashakai/M-1 Industrial Estate, Jalozai Industrial Estate, Ghazi Industrial Estate, Dera Ismail Khan Industrial Estate, Bannu Industrial Estate, Hattar Industrial Estate, Gadoon Industrial Estate, Hayatabad Industrial Estate, Nowshera Industrial Estate, Industrial Estate Mansehra and Industrial Estate/Marble City in Chitral.

D.1.2.16. The Khyber Pakhtunkhwa Regional and District Health Authorities Act, 2019

147. The Act aims to provide for a comprehensive and efficient healthcare system in the province of the Khyber Pakhtunkhwa and to devolve authority and accountability at the regional and district level by re-organizing the health facilities in the province of the Khyber Pakhtunkhwa. The law overrides all other laws on the subject (which includes the Local Government laws).

148. It extends to the whole of KP and applies to all existing health facilities in the public sector and such other facilities as may be established.

149. The Act establishes a Policy Board consisting Minister Health KP, Secretary Health KP and Chairpersons of all Regional Health Authorities. The Policy Board is empowered to, in consultation with the Government, set standards and policies for Regional Health Authorities; recommend and approve model regulations and policies to be framed by the Regional Health Authorities; plan and implement specialized training programs; establish minimum qualifications for posts in the Regional Health Authorities; provide guidance and advice on any matter referred to by the Regional Health Authority or the Government., safeguard farmers rights & interests, review annual reports of each Regional Health Authority and give recommendations thereon and assist, aid or advise the Government on any matter relating to health facilities.

150. On the other hand, Regional Health Authorities are to be notified at each divisional level comprising two doctors, a senior nurse and two eminent persons from any of the fields of law, finance, economics or management, or retired government servants, educationalists, civil society, businessmen or renowned philanthropists. The Regional Health Authority is responsible for overseeing the effective management of, and providing strategic directions to, the health facilities in an assigned region, allocate funds to health facilities under its supervision, overseeing health service delivery within the policy framework given by the Government, implement policies and directions of Government, achieving KMIs set for healthcare programs, create, re-designate or abolish posts; framing of regulations for employees and overseeing process of appointment; approve programs and services to ensure that health facilities fulfil legal, regulatory, and accreditation requirements; ensure coordination of health related emergency response during any nature calamity or emergency and ensuring liaison with Government for technical and logistical support; establish or upgrade health facilities in the district either on its own or on the recommendation of a District Health Authority.

151. The law also mandates that District Health Authorities are to be notified at each district level and to act as the implementing arm of the concerned Regional Health Authority to be headed by a Chief Executive Officer and a doctor, a nurse, and three eminent professionals from any of the fields of law, finance, economics or management, or retired government servants, educationalists, civil society, businessmen or renowned philanthropists. It is to be headed by a Chief Executive.

152. The District Health Authority is responsible for all public health facilities for better healthcare delivery in the district; management and supervision of health facilities in the district; making plans, strategies and recommendations for the Regional Health Authority for allocation of necessary funds; developing referral and technical support linkages between health facilities and tertiary level health facilities & medical educational institutions; develop linkages between private and public health sectors; ensure timely and adequate reporting of

progress on health indicators and issues relating to disease surveillance, epidemic control and disaster management to the Regional Health Authority; implement policies and direction of the Regional Health Authority including achievement of KMIs set; ensure health service delivery standards, infrastructure standards, patient safety and hygiene standards. procurement of medications for health facilities under its control.

153. The Chief Executive of a District Health Authority is to exercise powers as executive head of the District Health Authority and implement standards and policies fixed by the Regional Health Authority and the District Health Authority; as well as to manage human resources of the District Health Authority; ensure health outcomes and enrolment in the district; ensure high quality healthcare services; rationalize existing healthcare facilities and employees; be accountable for maintaining financial discipline and transparency in the District Health Authority; monitor, implement and execute development projects of the Regional Health Authority; ensure achievement of targets against performance indicators laid down by the Regional Health Authority. manage Waste and disposal standards

D.1.3. Various Regimes and Inter-institutional jurisdiction

154. In the paragraphs which follow, the patchwork of land use, building control and urban development regimes applicable across the province (with a focus on the Greater Peshawar area) will be discussed in further detail. The institutions possessed with the legal authority to implement and manage these regimes will be listed. If there are overlaps or gaps between the regimes, these will be also be highlighted. This section will base itself and build upon the analysis of the statutes listed in the previous section.

D.1.3.1. Local Government Act, 2013

155. The most widespread provincial land use and building control regime is that which is contained in the LGA, 2013[108]. As highlighted above, the LGA is applicable throughout the province (aside from the cantonment areas and areas excluded from its remit, as notified by the Government).[109]

156. As noted above, under the recently amended LGA, the district level of local government has been abolished. One of the bigger challenges which may now be faced is the removal of the district tier of elected government whilst retaining the district as an administrative unit. It seems that planning (including land use planning) will have to be more localized as the planning and operational unit has been brought down to the tehsil level. There is a lack of clarity on how different tehsils within a district will interact. Earlier, the District Nazim was responsible for this intra-district coordination; which now seems to be the responsibility of the District Administration.[110]

157. There appears to be a blurring of lines and boundaries between the CLGs/TLGs and the District Administration in the newly amended law; which may throw up operational challenges. Whereas ostensibly under the LGA the authority of the TLGs comprises the "*operation, management and control of offices of the departments which are devolved to it*",[111] the Tehsil Local Administration assists the Chairmen TLGs,[112] whilst continuing to report to

[108] See Section D.1.2.1 above.

[109] See Section D.1.2.1.1 above.

[110] In this regard, see section 23A(1)(c), section 57(2)(b) and (d), and section 57(3).

[111] Section 23(1).

[112] Section 21(4).

the District Administration, which is also the relevant authority with respect to disciplinary action and performance evaluation of government functionaries.[113]

158. Under the LGA 2013 (prior to the 2019 Amendment) the District Commissioner was part of the elected district government (and answerable as such), and Tehsil/ Town Nazims were Chief Executives of the Tehsil Municipal Administration, with wide-ranging powers to monitor and supervise all offices and their officials, to plan the utilization of land and ensure the implementation of developmental projects and municipal laws. It is possible that with the 2019 Amendment, the elected TLGs and CLGs may practically operate under the District Commissioners.

D.1.3.1.1 Land use planning, building control and urban development

159. As stated above,[114] land use planning, building control and urban development in general, all fall within the definition of "*municipal services*" under the LGA, which office has been devolved to local governments. Under Section 112 of the LGA, the Government has the power to make rules, including for those matters stipulated in Part I of the Seventh Schedule, which include "Planning, Development, Budget and Accounts",[115] "Works and Services",[116] "Development Authorities",[117] "Regulation of Site Development Schemes",[118] "Forests and plantations"[119] and "Property Management".[120]

160. Pursuant to this section, the Government has *inter alia* issued the "*KP Tehsil and Town Municipal Administration Rules of Business, 2015*"[121] (the "**TMA Rules of Business**") which will now govern the workings of the TLGs[122] and CLGs,[123] including for matters relating to land use planning, building control and urban development. In the field of building control, the Government has also issued the "KP Model Building Bye-Laws, 2017"[124] (the "**Model Building Bye-Laws**").

161. The Government also possesses the power under Section 117(2) to "*specify general powers and standard procedures to guide local governments in the performance of their functions*".[125] Pursuant to this section, the Government issued a comprehensive document on

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113 In this regard, see Sections 23A(1)(i) and 23A(1)(o).

114 Paragraphs 2.2.13 – 2.2.14.

115 Sr. No. 4.

116 Sr. No. 6.

117 Sr. No. 7.

118 Sr. No. 8.

119 Sr. No. 21.

120 Sr. No. 22.

121 Vide Notification No. SO(Dir)ROB/LGE&RDD/2015, dated 3 November 2015.

122 As the Tehsil Municipal Administrations and Town Municipal Administrations stand integrated with the respective TLGs under the newly inserted Section 121A.

123 Though this is not clear as CLGs are meant to succeed the erstwhile City District Governments (under Section 121A(1)(a), and yet they are governed by the same provisions as TLGs (as per Section 8), with the distinction being that they function in areas with urban characteristics (as per Section 21(5)).

124 Vide Notification No. SOG/LG/8-133/Advertisement/2017, dated 24 May 2017.

125 Such procedures would in effect be binding on local governments as by way Section 3(2) they are "not to impede or prejudice the exercise of the executive authority of Government", and they are now obligated under Section 3(3) to follow the policy framework for devolved functions stipulated by the Government, for the purposes of uniformity amongst local governments.

21 December 2015 (the "**Guidance Notification**")[126] which tackles a host of matters, including land use, building control, and multiple other fields which have urban planning dimensions.

162. The TMA Rules of Business, Model Building Bye-Laws, and the Guidance Notification will be discussed in detail below.

D.1.3.1.2 Non-Urban areas

163. In non-urban areas,[127] the primary responsibility for laying down land use planning and building control policies vests with the Chairmen, TLG, who as per Section 23A(f) "*prepare spatial plans for the tehsil including plans for land use and zoning and disseminate these plans for public enquiry",* and under Section 23A(l) carry out functions pertaining to "*urban and housing development, including urban improvement and upgrading, and urban renewal and redevelopment, with care being taken to preserve historical and cultural monuments*."

164. In such areas, tehsil councils have the power to approve bye-laws for delivery of services,[128] and long and short term development plans proposed by the Chairmen, TLG,[129] but no specific powers with respect to land use and building control have been assigned to them.

165. As far as enforcement and implementation functions are concerned, these have *per se* not been given to TLGs under the LGA,[130] but they do exist at the Village Council (VC) level, with VCs being assigned the responsibility to report to the District Administration[131] and TLG in respect *inter alia* of "*violation of land use plans, building codes, rules and bye-laws*".[132]

D.1.3.1.3 Urban areas

166. Mayors of CLGs (a position analogous to that of Chairmen, TLGs, but with respect to urban areas) have been assigned the following additional functions under section 25A:

(a) review implementation of rules and bye-laws governing land use, housing, markets, zoning, roads, traffic, tax, infrastructure, under passes, and inter-town streets.

(b) approve proposals for public transport and mass transit systems, construction of express ways, fly-overs, bridges, roads, under passes, and inter-town streets.

(c) sewerage tertiary and secondary network, treatment plants, and disposal.

(d) storm water drainage network and disposal.

(e) flood control protection and rapid response contingency plans.

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126 Vide Notification No. SO(Dir)/LGRDD/G.Powers.

127 Though a strict demarcation between non-urban (rural) and urban cannot easily be made under the LGA as TLGs may exist even for urban areas. The Government has the power to notify a contiguous group of Neighborhoods as a City Local Government (under the proviso to section 21(5)), but if it does not do so, such neighborhoods may still be governed by a TLG. It is, however, clear that the "Urban Centers" which are Divisional Headquarters' are urban, and hence, will have a CLG (section 21(5)).

128 Section 25(b).

129 Section 25(d).

130 Through they do find mention in subordinate legislation. See: Section D.1.3.1.4.

131 The District Administration means the Deputy Commissioner and district heads of provincial departments. Maintenance and development of parks, playgrounds, open spaces and arboriculture.

132 Section 28(1)(d).

(f) industrial and hospital hazardous and toxic waste treatment and disposal.

(g) urban and housing development, including urban improvement and upgrading, and urban renewal and redevelopment, with care being taken to preserve historical and cultural monuments.

167. Similarly, additional powers are given (and understandably so) to City Local Councils in areas with urban characteristics, under Section 25A(2)(b). They have the function and power to "*approve master plans, zoning, land use plans, including classification and reclassification of land, environmental control, urban design, urban renewal and ecological balances*"[133] and "*approve development schemes for beautification of areas along rivers, canals, streams*".

D.1.3.1.4 Subordinate Legislation

168. The TMA Rules of Business (which apply to both rural and urban areas) contain in Schedule-I, a list of sub-offices within the TMAs (TLGs), and a detailed distribution of business amongst them. As per this list, the '*Municipal Regulation*' sub-office handles *inter alia* (i) enforcement of municipal laws, (ii) prevention of encroachments on public lands, (iii) prosecuting and proceeding against violators of municipal laws before courts, and (iv) regularization of tenure of katchi abadis, land including rights of way, and drains. Whereas, the '*Planning, Infrastructure and Services*' sub-office handles all matters pertaining to provision, management, operation, maintenance and improvement of Services of the municipal infrastructure and services.[134] The same office: (i) executes and manages development plans, (ii) prepares spatial plans for tehsil and town in collaboration with District Councils, VCs and NCs, including plans for land use, and zoning, (iii) formulates strategies for infrastructure development, improvement of service delivery and implementation of laws, (iv) exercises control over land use, land sub-division, land development and zoning by public and private sectors for any purpose,[135] (v) handles building control, (vi) develops and manages schemes including site development in collaboration with District Government, NCs and VCs, national and international development partners.

169. The TMA Rules of Business make it clear that functions assigned to a City District Government shall stand deleted from the business allocated to the TMA falling within the area of that City District Government.[136] However, given that the City Local Governments are now to succeed the City District Governments (with the district tier being abolished), it remains to be seen how the functions of the latter are to be distributed amongst the CLGs.

170. The Model Building Bye-Laws contain detailed rules and prescriptions with respect to building control, but it is unclear whether they have been adopted by Tehsil Councils and City Local Councils across the length and breadth of the province. It is these councils which have been vested with powers to make bye-laws within their ambit of responsibilities,[137] in particular

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133 Section 25A(2)(a).

134 Which includes water supply and resources, sanitation and solid waste management, roads and streets, traffic planning, street lighting, disaster and emergency management. It is clarified in Section 3(3)(i) that water and sanitation services of TMA at Divisional Districts shall lie with the concerned Water and Sanitation Services Company (WSSC), as per Government directives.

135 Including agriculture, industry, commerce, markets, shopping and other employment centers, residential, recreation, parks, entertainment, passenger and transport freight and transit stations.

136 Rule 3(2).

137 Section 113(1).

for the matters specified in Part-II of the Seventh Schedule,[138] which include "*zoning, master planning, and buildings*."[139]

171. The Guidance Notification stipulates detailed powers and standard procedures to be followed by local governments in various fields, including entire Parts of the guidance dedicated to Building and Land Use Control, Drainage and Sewerage, Encroachments, Planning, Public Health and Sanitation, Public Safety, Social Welfare and Community Development, Streets and Streets Lighting, Transport and Traffic, Water Supply, and Development Planning.

D.1.3.2. Cantonments

172. As discussed in Section D.1.2.2 above, the Cantonment Boards are responsible for handling all development issues in Cantonments, including those for provision of water, sanitation, disposal of waste, safety of buildings, maintenance of roads and pavements. All development and expansion within the Cantonment areas is done by the Cantonment Boards under the Act.

D.1.3.3. Other Stakeholders

173. As highlighted above, there are multiple institutional stakeholders – whose functions and responsibilities have aspects of land use planning, building control and urban development – which must be taken on board by local governments, building authorities and the like whilst carrying out their own planning and development roles. These include the following:

(a) The KP Housing Authority has a major role to play in land use policy.[140] **It has been tasked with the formulation of provincial land use policy, and the planning and preparation of regional development plans for an integrated, coordinated and systematic planning to ensure orderly growth and development of physical infrastructure such as highways, railways, industrial zones, conservation of forest reserves, etc**. It also has a defined role to play in the development of satellite, intermediate, secondary and industrial towns to reduce migration and drift to big settlements (which would help in addressing the issue of urban sprawl). The Authority has been tasked with developing a Geographic Information System for efficient land documentation and information related to housing and town planning. **with assisting local governments with capacity building in matters relating to housing and town planning**.

(b) The KP Urban Mobility Authority also has a role to play in reviewing land use master plans, schemes and projects as to ensure their compatibility, suitability and sustainability with present and future mass transit systems, schemes and projects.[141] In this respect, the Authority assists the relevant Departments of Government to the extent of mass transit systems, planning and **infrastructure and issue no objection**

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138 Section 113(2).

139 Sr. No. 2. And also includes *inter alia*, "*prevention of encroachments*" (Sr. No. 4), "*regulation of traffic*" (Sr. No. 10), "*parks and open places*" (Sr. No. 16), "*encroachment of any public road, public street, or public place*." (Sr. No. 18), and "*tampering with any main pipe, or any apparatus or appliance for the supply of water*." (Sr. No. 22).

140 See Section **Error! Reference source not found.**.

141 See Section D.1.2.4.

certificates for the master plans in accordance with long term plans, strategies, roadmaps and projects pertaining to mass transit systems.

(c) The KP Highway Authority, *inter alia,* is **required to prepare a master plan for the development, construction operation and maintenance of highways and roads in KP, and may even notify the right of way around highways, roads, and bridges** around which it would be illegal to make any changes to land use, without the consent of the Authority.

(d) Under the Environmental Protection Act, 2014, the Government, the Environmental Protection Agency, and the Environmental Protection Council all have meaningful functions to *inter alia,* **carry out strategic environmental assessment of all sorts of industrial, agricultural, urban and rural development projects and land use management plans; approve comprehensive environmental policies and ensure their implementation; co-ordinate the integration of the principles and concerns of sustainable development into development plans and policies at the provincial, district and local levels**. prepare environmental policies for the approval of the Council, in consultation with the appropriate Government Agency or local council.

(e) The Land Acquisition Act, 1894 is a law which has been used frequently for mega projects and with no settlement plan for all people who are dislocated which serious impediment in any urban planning and management.

(f) Under the Antiquities Act, 2016, no development plan or scheme, or new construction may be undertaken or executed within two hundred feet of a protected immovable antiquity, notwithstanding anything contained in any other law, without the approval of the Director of the Directorate of Archaeology and Museum, KP.

D.2. Development Strategies and Plans

174. Khyber Pakhtunkhwa has been at the forefront of developing strategies and plans for its development—it was the first province in Pakistan to develop a provincial conservation strategy; Sarhad Province Conservation Strategy.[142] Some of the most recent and relevant strategies and plans are discussed in the following paragraphs.

175. Consolidating three key policy documents, Post Crisis Needs Assessment (2010),[143] Comprehensive Development Strategy 2010-2017[144] and the Economic Growth Strategy (2011),[145] the **Integrated Development Strategy** (IDS)[146] was developed in 2014 with a timeframe of four years (2014-2018). The IDS consolidated the common themes identified in earlier assessments to remove overlaps and contradictions and rebalanced the priorities by

[142] GoNWFP and IUCN. 1996. *Sarhad Provincial Conservation Strategy*. Karachi: IUCN & Planning, Environment & Development Department, Government of NWFP.

[143] GoP. 2010. *Post Crisis Needs Assessment: Khyber Pakhtunkhwa & Federally Administered Tribal Areas*. Islamabad: Government of Pakistan, Government of Khyber Pakhtunkhwa, FATA Secretariat, ADB, EU, UN and WB.

[144] GoKP. 2010. *Khyber Pakhtunkhwa Comprehensive Development Strategy 2010-2017*. Peshawar: P&D Department, Government of Khyber Pakhtunkhwa.

[145] GoKP. 2011. *Economic Growth Strategy*. Peshawar: P&D Department, Government of Khyber Pakhtunkhwa.

[146] GoKP. 2014. *Integrated Development Strategy 2014-2018*. Peshawar: P&D Department, Government of Khyber Pakhtunkhwa.

the provincial government. It reflected an emphasis toward social services, justice and security, accountability, and the participation of communities. Growth was included as a gear through which to provide livelihoods and jobs for the poor. The Strategy identified three pillars of pro-poor growth: urbanization, regional trade and connectivity, and remittances. It considered access to safe drinking water and safe sanitation as most effective means of improving public health and saving lives.[147]

176. In October 2019, the provincial cabinet approved the **Sustainable Development Strategy** (SDS) as a Medium Term Development Framework 2019-23 for Khyber Pakhtunkhwa.[148] The SDS notes that despite the fact that over 3/4th of province's population still lives in rural areas but almost 2/3rd of this population lives within a travel time of one hour from a city, whereas 90% of the population of the province lives within two hours distance from an urban center.[149] Another key aspect of urbanization it points to is the emergence of urban agglomeration in (i) Central Khyber Pakhtunkhwa where districts of Peshawar, Charsadda, Mardan, Swabi and Nowshera cover almost 10% of the area of the province and contain 37% of the population concentrated in and around four cities; (ii) Hazara Region including districts of Haripur, Abbottabad and Mansehra with 11% of the provincial area containing 15% of the provincial population, and (iii) other conglomerates including Swat, Dera Ismail Khan and Kohat.[150] These ground realities, coupled with higher incidence of poverty in KP's urban areas and rural-urban migration, the SDS places greater focus on important components of urban development. It outlines the following key objectives of urban development in KP:

i. Enhanced quality, accessibility and affordability of better municipal services through improved infrastructure, secured urban centers and efficient service delivery.

ii. Balanced economic growth for jobs creation and mainstreaming services sector.

iii. Streamlined physical and spatial planning along with effective land use regulation and enforcement.

iv. Role of private sector and civil society.

177. It also puts emphasis on urban connectivity through:

i. Efficient mobility and improved mass transit, public transport, non-vehicular transport (bicycle lanes) and pedestrian facilitation.

ii. Improved regulation and enforcement regime for governing transport sector in the best interest of commuters and pedestrians.

iii. Improved transport planning and research regime for complimenting urban development reform agenda of the government.

147 GoKP. 2017. *Khyber Pakhtunkhwa Province, Pakistan: Public Financial Management Assessment Report*. Peshawar: Finance Department, Government of Khyber Pakhtunkhwa.

148 GoKP. 2019. *Sustainable Development Strategy: A Medium Term Development Framework 2019-23 for Khyber Pakhtunkhwa*. Peshawar: P&D Department, Government of Khyber Pakhtunkhwa.

149 ICG. 2015. *Reclaiming Prosperity in Khyber Pakhtunkhwa*.

150 GoP. 2018. *State of Pakistan Cities' Report*. Government of Pakistan

178. In order the implement the above reform objectives, the Strategy proposes a portfolio of PKR 80,909 million to be spent in four years (2019-23) for local governance, urban and rural development, housing and transport.

179. The provincial Chief Minister has launched an **Economic Recovery Plan 2020-23** announcing government's measures to cope with the economic impact of COVID-19 pandemic. With an intended outcome of "enabling environmentally sustainable urban planning and development," the Plan provides for formulating a new "Building Code" in line with global best practice in climate change adaptation and environment-friendly urban development.[151]

180. Additionally, the Tribal Decade Strategy 2020-2030, formulated in 2019 for the newly merged districts (erstwhile FATA) underpins the need for transforming the tribal society from rural to urban areas as engines of growth. However, it emphasizes the sustainability of urban hubs and services through appropriate planning for revenue generation. The Strategy lays a portfolio of PKR 93,775 million for providing municipal services and urban development in the newly merged districts over the next 10 years.[152]

181. It is important to note that so far only a few efforts have been made in KP, and even Pakistan, to formulate long-term plans. Most of the strategies and plans focus on investments to be made and intended result to be achieved during the ongoing regime's timeframe. There is need for policy continuity and holistic planning for a long-term sustainable future. The RDPs are one step towards this direction.

D.3. Institutional Setup – Structure, Roles and Responsibilities

D.3.1. Province Governance and Decentralization

182. The Government of Khyber Pakhtunkhwa has devolved political, fiscal and administrative authority to local governments. The 2013 Local Government Act (LGA) enables the elected representatives of local governments to approve and manage their own budget while making provisions for fiscal transfers and own-source revenue. Subsequently, the Khyber Pakhtunkhwa Local Government (Amendment) Act, 2019 (the "2019 Amendment") has abolished the district-level local government, reducing the tiers of government from three to two. The highest tier of local government after the 2019 Amendment is the Tehsil Local Government (TLG) for tehsils, and the equivalent City Local Government (CLG) for urban centers. The lower tier comprises Village Councils (VC) for a Village[153] in rural areas, and Neighborhood Councils (NC) for a Neighborhood[154] in areas with urban characteristics.[155] On the other hand, the new rules under the 2019 Amendment are not yet implemented and it remains to be seen when and how implementation will take place.

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151 GoKP. 2020. *Azm-e-Nau – The Spirit of Khyber Pakhtunkhwa: Economic Recovery Plan 2020-2023*. Peshawar: P&D Department, Government of Khyber Pakhtunkhwa.

152 GoKP. 2019. *Tribal Decade Strategy 2020-2030*. Peshawar: P&D Department, Government of Khyber Pakhtunkhwa.

153 The basic rural unit in the LGA is the "Village", defined in section 2(ii) as *"an integrated and contiguous human habitation commonly identified by a name and includes a Dhok, Chak, Kalay, Goth, Gaown, Basti or any other comparable habitation."*

154 The basic urban unit in the LGA is the "Neighbourhood", defined in section 2(s) as: *"a mohallah, a group of streets, lanes or roads, in areas with urban characteristics, designated as Neighbourhood by Department*."

155 To date, population data from the 2017 census is available only by Union Council (UC), which were the precursors of VC and NC.

183. The Local Government, Elections and Rural Development (LGE&RD) Department at provincial level retains and continues to exercise control over Local Area Development Authorities in the province. The Secretary of LGE&RD reports to the Chief Secretary of Khyber Pakhtunkhwa province.

184. The decentralization of Khyber Pakhtunkhwa incorporates in its design a number of checks and balances to promote accountability:

i. The Minister for LGE&RD heads the Local Government Commission (LGC),[156] the role of which is to support the coherent functioning of local governments. The LGC has the mandate of (i) conducting annual inspections of local governments and submitting reports in this regard to the Provincial Government; (iii) commissioning third party performance and financial audits of any or all local government bodies, where deemed necessary in the public interest; (iii) conducting inquiries into any matter concerning local governments, (iv) resolving disputes between local governments, (v) submitting annual reports on the overall performance of local governments to the Chief Minister, and (vi) taking cognizance of violations of laws and rules by a local government. On the other hand, the lack of secretarial support for the LGC makes it difficult for it to perform satisfactorily.

ii. Accountability and transparency are ensured through audit functions. Audit reports are reviewed by the Public Accounts Committee of the Provincial Assembly. Furthermore, every CLG and TLG is required to publish an annual audit report for the public.[157]

iii. The decentralization sought to empower public representatives at the bottom tiers of governance. In principle, decentralization extends down to the village and neighborhood level, where the local councils (VCs and NCs) enjoy considerable powers. The political process that laid the foundation for decentralization with elections in 2015 was an additional strength, since it led to the increased awareness and involvement of political parties in planning, development, and decisions regarding service delivery priorities. This made the political process more responsive and representative.

iv. The 2019 Amendment of the 2013 LGA has retained the mandatory allocation to local governments of not less than 30 percent of the total provincial development portfolio (the Annual Development Program (ADP)).[158] On the other hand, there is also a provision for the provincial government to withhold any amount of funds in the name of the public fund to be spent by designated government officials. The record shows that overall, withheld funds have not been significant. Notwithstanding this, the clause goes against the principle of equity and could affect some communities.

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156 The Local Government Commission comprises two provincial assembly members (one nominated by the Chief Minister, and the other by the Leader of the Opposition, two qualified individuals selected by the government experienced technocrats, and two Government Secretaries (one Secretary from the Law, Parliamentary Affairs, and Human Rights Department, and the other from the Local Government, Elections and Rural Development (LGE&RD) Department), as well as a representative from the Finance department for matters related to budget of local governments. The Director-General, LGE&RD, provides secretariat support.

157 Buzdar, F., 2016. Local Governments in Khyber Pakhtunkhwa and Punjab: Framework, Current Status, and Challenges. Islamabad: AAWAZ.

158 2013 LGA paragraph 53a states, '… *the development grants for local governments shall be so determined that it is not less than thirty percent of the total development budget of the province in the respective year*.'

v. Additionally, a new provision allows 2% of the funds of local governments' share to be retained by the provincial government to spend on third party audits of local governments and their human resource development.[159]

vi. Nonetheless, local governments still receive a significant share of the development budget. In FY 2017—2018, some PKR 28 billion was earmarked for local governments' annual development plans amounting to 22.2% of the provincial ADP (without the foreign assistance of PKR 82 billion for that year).[160] Of the funds earmarked for local governments, district, tehsil, and village/neighborhood councils accounted respectively for 29, 26 and 45 percent of this amount.

185. Many challenges remain before the potential of fiscal and administrative decentralization can be fully realized in Khyber Pakhtunkhwa:

i. Mismatch between some devolved functions and actual practice, and overlaps between levels create inefficiencies. The provincial portfolio in practice still includes functions and projects that have been devolved in principle to local governments, based on the principles of subsidiarity. Overlap of roles is seen, such as in development planning, infrastructure and land use.

ii. Political friction and increased litigation over contested development schemes are a threat. The potential for friction is high if local governments are in the party in opposition to the provincial government, and if debates over development schemes take place. Such friction diverts focus from service delivery and improved governance. Litigation has reportedly increased concerning decisions made at the local level.[161]

186. Limited capacities are the biggest challenge to realizing the full potential and benefits of decentralization. The increased decision-making powers conferred by decentralization require a different set of competencies, especially in monitoring the use of funds, conducting needs assessments systematically to identify gaps in service quality and access and to address such gaps. Transfers — based on an equalization formula — comprise most of the resource base at each level. Local governments will need to mobilize more resources locally, using innovative means of financing, developing new public-private partnerships, and using the decentralization rules that empower them to levy local taxes or undertake ventures that generate funds. Project planning, costing, and resource allocation need strengthening.

D.3.2. Local Governance

187. The LGA 2013 ensured considerable autonomy in governance and financial management at local government level. The 2019 Amendment has implemented three marked changes, among others, which will affect the delivery of services:[162]

i. The re-devolution of the Public Health Engineering (Water and Sanitation) Department (PHED), from provincial government back to the local level (Table 7). PHED is responsible for setting up and maintaining the water supply schemes in rural areas, a

[159] Syed Ata Ur Rehman. 2019. *The Khyber Pakhtunkhwa Local Government (Amendment) Act, 2019: An overview of Amendments and their Implications.* Berlin: Democracy Reporting International.

[160] Source: provincial government budget provided to project team.

[161] (i) Buzdar, F., 2016 (Footnote 3*).* (ii) Dawn, 2018. 'Policy devised to reduce govt's litigation workload'. 11 March 2018. Available from: https://www.dawn.com/news/1394469 Accessed 1 July 2020.

[162] Syed Ata Ur Rehman. 2019. *The Khyber Pakhtunkhwa Local Government (Amendment) Act, 2019: An overview of Amendments and their Implications.* Berlin: Democracy Reporting International.

function that can be performed better by local governments collaborating closely with local communities.

ii. The reversal of the health department's devolution. While the local level still retains responsibility for primary and secondary education, health has been removed, the explanation being that separate health legislation was introduced (293 on health).

iii. The abolition of the District Government tier from the elected local government structure. While this has been removed, the district remains as an administrative unit. Under this new arrangement, the elected TLGs and CLGs will maintain control over their bureaucracies which will continue to report to the district administration. In practical terms, the city/tehsil elected governments will operate under the Deputy Commissioner at district level.

D.3.2.1. District Level Governance

188. One of the bigger challenges facing local governance is the removal of the district tier of elected government while retaining the district as an administrative unit. It seems that planning (including land use planning) will have to be more localized as the planning and operational unit has been brought down to the tehsil level. There is a lack of clarity on how different tehsils within a district will interact. Earlier, the District Nazim was responsible for this intra-district coordination; which now seems to be the responsibility of the District Administration.

189. The 2019 Amendment introduces a new entity by the name of District Administration. This represents the provincial government in the district and has a coordinating and conflict resolution role vis-à-vis the local governments. District Administration is headed by the Deputy Commissioner who, under orders from the Chief Minister, exercises special powers and carries out functions that would otherwise fall under the ambit of the Tehsil Chairpersons. It is possible that with the 2019 Amendment, the elected TLGs and CLGs may operate under the District Deputy Commissioner.

190. The District Development Advisory Committee (DDAC)[163] in each district plays a determinant role in certain district development programs. The DDAC comprises members of the Provincial Assembly from the concerned district and other elected representatives, and the heads of attached Departments at the District level co-opted by the Committee for their expert opinion. The DDAC formulates and recommends (i) proposals for the annual development plan in the district, (ii) the list of schemes to be implemented under the Rural Development Plan, (iii) the location and selection of sites for schools, rural health, and public health engineering (rural drinking water and sanitation) schemes, (iv) locations or sites for other development projects as may be included in the ADP of a district including electrification of villages, and (v) allocation of Ration Depots. The DDAC is also responsible for ensuring timely implementation of the programs it approves. The Assistant Director LGE&RD has overall responsibility for implementation, monitoring, and evaluation of the activities concerned with the local government. The District Officer Finance and Planning translates province plans into district development schemes, reviews and recommends the schemes identified by different stakeholders to the respective authorities. The provincial finance department directly transfers funds to each District Government for the schemes.

[163] District Development Advisory Committees (Amendment) Act, 2015

D.3.2.2. Tehsil/City Level Governance

191. The 2019 Amendment vests executive authority in the Chairperson of the Tehsil LG (to be elected directly on party-based elections) over the devolved departments. The Tehsil LG itself comprises the Chairperson, Tehsil Local Government and the Tehsil Local Administration.[164]

192. The Provincial Government may also notify City Local Governments for urban centers of the district to be established at each Divisional Headquarters. Such City Local Governments, if so notified, would have the same powers and functions as the Tehsil Local Governments. City Local Governments would be headed by a Mayor and comprise the Mayor and City Local Administration. The Mayor will be elected through direct elections, similar to those by which a Chairperson Tehsil Local Government is elected.

193. There appears to be a blurring of lines and boundaries between the CLGs/TLGs and the District Administration in the newly amended law; which may throw up operational challenges. Whereas ostensibly under the LGA, the authority of the TLGs covers the "operation, management and control of offices of the departments which are devolved to it", in reality, the Tehsil Local Administration assists the Chairpersons TLGs , whilst continuing to report to the District Administration, which is also the relevant authority with respect to disciplinary action and performance evaluation of government functionaries. While the Chairperson and Mayor can recommend disciplinary action against tehsil and city employees, they cannot take direct action. Thus, administrative staff working under the Chairperson of local government are predominantly under the supervision of and with reporting lines to officials under the Deputy Commissioner, who represents the province. This has the potential for confusion and tension.[165]

194. The tehsil and city councils are composed of all Chairpersons of neighborhood and village councils in the tehsil and city. There are also reserved seats for women, peasants, workers and religious minorities that are indirectly elected from among the members of village councils who secure the largest number of votes.

D.3.2.3. Village/Neighborhood Governance

195. Village and neighborhood councils each have seven members, all being directly elected on a non-party basis from a single constituency. As before the Amendment, those with the highest number of votes become Chairpersons.

D.3.2.4. Roles and Functions

196. The Tehsil Local Government, or a City Local Government, as the case may be, shall be assisted in its functions by the Tehsil Local Council, or the City Local Council,[166] which are responsible for approving the actions to be taken by the Tehsil Local Government. These actions and plans include the imposition of taxes, fines & penalties; bylaws for the delivery of devolved services; the enforcement of municipal laws; the preparation of the annual budget,

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[164] That is, the Assistant Commissioners (the administrative head at Tehsil level), Tehsil Municipal Officers, and heads of the devolved offices.

[165] Syed Ata Ur Rehman. 2019. *The Khyber Pakhtunkhwa Local Government (Amendment) Act, 2019: An overview of Amendments and their Implications.* Berlin: Democracy Reporting International.

[166] The tehsil and city councils are composed of all Chairmen of neighborhood and village councils in the tehsil and city.

long and short-term plans and development schemes; the development and approval of long- and short-term development schemes for the areas under its jurisdiction (Table 8).

197. The City Local Government and Council are further empowered to oversee land-use, housing, markets, zoning, traffic, tax, infrastructure, and public utilities, as well approve proposals for public transport, construction of roads and works, environmental control, waste control, and certain other functions (Table 7, Table 8 and Table 9).

198. The primary responsibility for land use planning and building control under the LGA has been given to the Chairpersons, TLG , and Mayors, CLG . On the other hand, the (elected) tehsil councils have the power to approve long and short term development plans proposed by the Chairman, TLG. In addition to this power which is available to all tehsil councils, City Local Councils have the function and power to "approve master plans, zoning, land use plans, including classification and reclassification of land, environmental control, urban design, urban renewal and ecological balances" and "approve development schemes for beautification of areas along rivers, canals, streams."

199. Municipal services (including water and sanitation) are devolved to local governments under the LGA. The Tehsil Local Government is the main entity with a substantial role in municipal services delivery.

200. At the lower tier, VCs and NCs have been assigned the responsibility to report to the District Administration and TLG in respect inter alia of "violation of land use plans, building codes, rules and bye-laws".

201. Education for the age group five to 16 years has to be made free of cost and compulsory as it is a fundamental right for children.[167] In Khyber Pakhtunkhwa, education for this age group is a devolved function under the responsibility of the local government. The role of local governments has been traditionally to focus on infrastructure development of schools.

202. Primary and secondary health facilities are not part of the devolved functions under the 2019 Amendment but there is a clear provision that allows local governments to inspect and monitor these facilities and report on them. The main role of the local government would appear to be in promoting partnership among the different tiers of government where health services are concerned (Section E.5. covers health further).

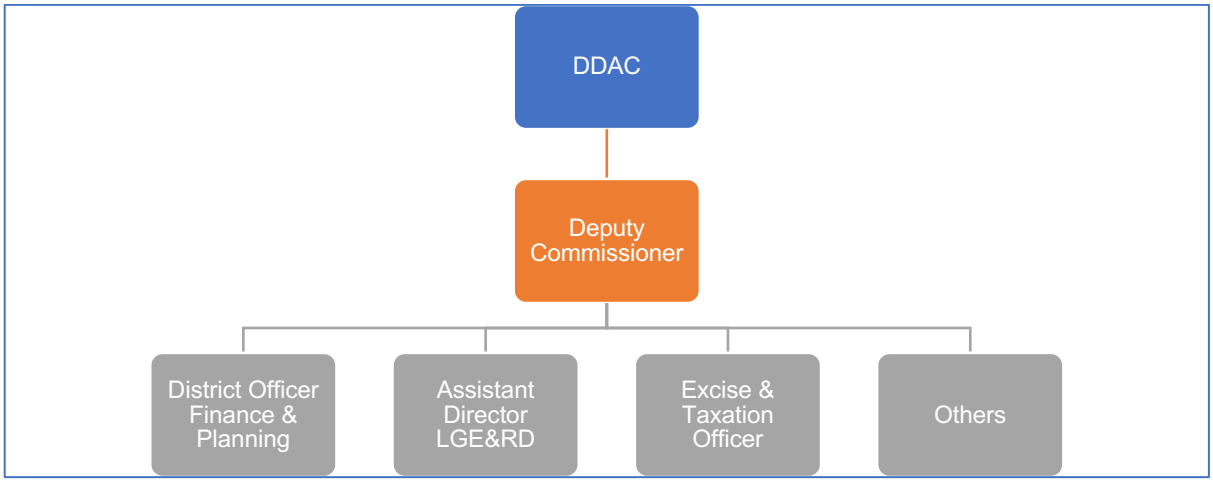
Table 7: Functions devolved to Tehsil Local Governments (TLGs)

Social services	Land Rural Development & Agriculture
• Primary and Secondary Education • Public Health Engineering (rural water and sanitation) • Municipal services, including water and sanitation • Population Welfare • Social Welfare • Sports and Culture	• Agriculture (Extension) • Livestock • On-Farm Water Management • Soil Conservation • Fisheries • Rural Development & Rural Works

Source: Local Government Act, 2013 as amended by the KP Local Government (Amendment) Act, 2019.
Note: Includes the functions of coordination, human resource management, planning, development, finance and budgeting of the devolved offices.

[167] 18th Amendment Article 25A, Eighteenth Amendment of the Constitution of Pakistan, passed by the National Assembly of Pakistan on April 8, 2010.

Figure 10: District level administration departments in Khyber Pakhtunkhwa



Notes: DDAC = District Development Advisory Committee; LGE&RD = Local Government, Elections and Rural Development.
The post of District Nazim has been abolished in the 2019 Amendment to the 2013 Local Government Act.

Table 8: Functions of Tehsil Local Government

Chairperson, Tehsil Local Government[a]	Tehsil Local Council
• Provide tehsil-wide vision, leadership and direction for efficient functioning of the Local Government. • Formulate strategies and timeframes for infrastructure development and delivery of services. • Coordinate with district administration. • Ensure implementation of devolved functions and maintain administrative and financial discipline. • Oversee formulation and execution of tehsil annual development program. • Prepare spatial plans for tehsil including plans for land use and zoning. • Present budget proposals to Tehsil Council. • Present bi-annual reports on performance to Tehsil Local Council. • Monitoring and accountability of functionaries of government offices. • Call quarterly reports from government offices other than the devolved offices. • Regulate markets and services, including cattle fairs and cattle markets, issue licenses, permits, and impose penalties in relation thereto. • Authorize officers to prosecute and oversee violations of municipal laws. • Coordinate and support village and neighborhood councils. • Issue executive orders to officers of devolved departments. • Recommend disciplinary action against functionaries of Tehsil local administration. • Represent Tehsil Local Government. • Nominate the Chairperson of Tehsil Local Council.	• Approve taxes, fines and penalties imposed by Chairperson, Tehsil Local Government. • Approve by-laws for delivery of services by devolved departments. • Approve annual budget and appropriations for Tehsil Local Government. • Approve short and long term plans proposed by Chairperson, Tehsil Local Government. • Elect Standing Committees to present findings on efficiency, responsiveness, service delivery standards, and performance of respective offices in the tehsil. • Elect Finance Committee for examination of tax and budget proposals. • Elect Tehsil Accounts Committee for audit. • Elect Committee on Conduct of Business regarding procedure and smooth conduct of Tehsil Council. • Elect Code of Conduct Committee to oversee observance of Code of Ethics. • Review reports and recommendations of Tehsil Accounts Committee • Review Performance Reports presented by Chairperson Tehsil Local Government.

Source: Local Government Act, 2013 as amended by the KP Local Government (Amendment) Act, 2019.
Note: [a] This may also be the Mayor, City Local Government, as the case may be.

Table 9: Functions of City Local Government

Mayor, City Local Government	City Local Council
• Review the implementation of by-laws related to land use, housing, markets, zoning, roads, traffic, tax, infrastructure and public utilities. • Approve proposals for public transport and mass transit systems, express-ways, fly-overs, bridges, roads, underpasses and inter-town streets. • Approve Macro Municipal Plans that have been approved by the City Local Government	• Approve master plans, zoning, land use plans, including classification and reclassification of land, environmental control, urban design, urban renewal and ecological balances. • Approve development schemes for beautification of areas along rivers, canals and streams. • Review the development of integrated systems of water reservoirs, water sources, treatment plants, drainage, liquid and solid waste disposal, sanitation and other municipal services.
As head of the City Local Government, the following functions also fall under the responsibility of the Mayor: • Sewage, tertiary and secondary network, treatment plants and disposal. • Storm water drainage network and disposal. • Flood control prevention and rapid response contingency plans. • Industrial and hospital hazardous and toxic waste treatment and disposal. • Environmental control, including air, water and soil pollution. • Parks, playgrounds, sporting and other recreational facilities • Art galleries, libraries and community centers • Landscapes, monuments, and municipal ornamentation • Urban and housing development, including urban improvement and upgrading, and urban renewal and redevelopment • Regional markets and city-wide commercial centers	

Source: Local Government Act, 2013 as amended by the KP Local Government (Amendment) Act, 2019
Note: In addition to the functions described against the corresponding office in Table 8.

D.3.3. Sector Governance: Urban Water and Sanitation

D.3.3.1. Provincial Role in the Sector

203. The Public Health Engineering Department (PHED) at provincial level is responsible for province-wide health and hygiene standards. PHED independently conducts testing of and research on health-related schemes. Previous to the 2019 Act, the Department had an official role in implementing its own water and sanitation schemes in rural areas through the district government, with the following functions across the province: (i) comprehensive planning and oversight of drinking water schemes and sewerage systems; (ii) the maintenance of pipes and machinery (with replacement by quality supplies where needed) for clean drinking water and sewerage systems; (ii) the testing and research of hygiene related schemes. (iv) continual monitoring, data collection and analysis to ensure water quality. In this set-up, the district supervised PHED through the PHED District Officer who reports to the Deputy Commissioner and the elected head of the district (under the 2013 Act, this was the District Nazim).

204. However, the role of PHED has been devolved by the 2019 Act to tehsil level (Table 7). It is still unclear how this will work out and whether Tehsil authorities will have the capacity to fully take on the PHED roles. Clearly, the province still needs to enforce province-wide health and hygiene standards and conduct independent testing of its own.

205. The Urban Policy Unit (UPU) of Khyber Pakhtunkhwa provides support to water and sanitation service companies (WSSCs) in planning and capacity building. This includes support to (i) land use planning, (ii) research and development required for the planning, implementation, monitoring, and evaluation of projects that contribute to growth strategies for

urban clusters and areas, and (iii) capacity building for effective service delivery by various stakeholders. The UPU is responsible for evidence collection and dissemination of information on the urban sector, including guidelines on operations and sustainability of urban services provision. UPU conducts due diligence for land acquisition and resettlement framework and plans. It has oversight of the environmental monitoring aspects for different projects related to urban planning.

206. The Secretary, LGE&RD at provincial level approves the operational budget for the WSSCs. The Assistant Director of LGE&RD, responsible for the concerned district, supervises the planning and monitoring of different development schemes, e.g., the Assistant Director LGE&RD in Swat. Supervision and monitoring of different schemes also take place at neighborhood/village council Level. The provincial level LGE&RD releases the budget for these schemes through the provincial finance department.

D.3.3.2. Sector Governance: Roles and Functions

207. The National Water Policy-2018 lays down a broad policy framework and set of principles for water security on the basis of which the Provincial Governments formulate their respective Master Plans and projects for water conservation, water development and water management. The Khyber Pakhtunkhwa government is encouraging private sector and development organizations to support the sector in expanding access to safe drinking water and sanitation. The Khyber Pakhtunkhwa Drinking Water Policy 2015 encourages the private sector to provide access to safe drinking water on a sustainable basis.

208. Two types of entities are engaged in the water and sanitation sector across the district. These are the water and sanitation services company of Mingora (WSSCM-S) and the tehsil local governments (TLGs) or city local governments (CLGs), the latter where the urban center is classified as a city. The related function of urban planning is undertaken by the respective town and district authorities (see below). In the rural parts of the district, PHED may also implement some schemes. Following the 2019 Amendment to the Local Government Act, their role has been relegated to local level.

Table 10. Water and sanitation service providers in Swat district

Provider	Urban/ rural	Official coverage area	Population and households in official coverage area 2020[1]
WSSC-Mingora Swat	Urban	Currently 9 urban UCs in Babuzai tehsil	370,000 population, 47,000 households
CLGs/ TLGs	Urban	All urban UCs outside Mingora city	402,000 population, 49,000 households
TLGs	Rural	Rural UCs	1.78 million population, 210,000 households

Sources: Census projections and project team interviews.
Notes: CLG = City Local Government, PHED = Public Health Engineering Department, TLG = Tehsil Local Government, UC = Union Council, WSSC = Water and Sanitation Services Company.
The COVID-19 situation prevented the collection of representative data on non-governmental organizations and development partners and on water connections and actual coverage.
[1] Population and household projections calculated by the project team from census results.

209. The WSSCs in Khyber Pakhtunkhwa are meant to be independent corporatized public corporations. The WSSCs took over the provision of water, sanitation, and solid waste management services, following a Services and Asset Management Agreement (SAMA)

signed between the province, the City or town administration and the WSSC concerned. Peshawar came first, in 2014.

210. As with other WSSCs, the WSSCM-S is registered with the Securities and Exchange Commission of Pakistan and is fully owned by the Government of Khyber Pakhtunkhwa, under Section 42 of the Companies Ordinance, 1984. It is meant to be a ring-fenced, fully autonomous, professionally managed and corporate governed utility. Following the SAMA signed between the province's Public Health Engineering, Swat Tehsil Municipal Authority and WSSCM-S, the WSSCM-S took over the water, sanitation, and solid waste management sectors from the Tehsil government in January 2017. The geographical area of WSSCM-S services covers 24 Neighborhood Councils (9 urban Union Councils[168]) of tehsil Babuzai serving some 0.3 million population (Table 10).

211. The respective functions and responsibilities of the provincial government, the TLG, and the WSSCM-S are set out in the SAMA (Appendix 7 provides excerpts from SAMA). SAMA transfers the responsibility for management and operation of drinking water, wastewater, and solid waste management to WSSCM-S. This transfer includes all relevant assets, facilities, and control over staff so transferred. The TLG retains part of its staff for the remaining municipal services. SAMA stipulates other requirements for WSSCs, including benchmarking of services, developing key performance indicators and producing a business plan and a budget.[169] SAMA provided for an assigned budget from the TLG, together with provincial contributions. Following this, a decision was made in the interests of greater efficiency, whereby the province now transfers the budget directly to all WSSCs, cutting the tehsil budget by a commensurate amount. Therefore, while WSSCM-S coordinates closely with the city government, it is now independent of the city/tehsil authorities.

212. The WSSCM-S has the mandate to provide quality water and sanitation services to the urban Union Councils of Tehsil Babuzai in Swat. The Company aims to be a consumer-oriented organization, responsible for production, transmission and distribution of potable water to citizens of the urban area, managing sewerage systems to ensure hygienic environment, development of schemes to cover short falls in services, and generation of revenues for sustained economic viability. More specifically, the WSSCM-S is responsible for:

- Planning, designing, construction, operation and maintenance of water supply, sanitation, sewerage, drainage, fluid and solid waste systems and allied services, including their enhancement and improvement.
- Management of all activities, facilities, programs, resources and spaces associated with these services previously under the control of the TLG, including machinery, tools and vehicles.
- Management and supervision of personnel who had previously been delivering such services under the auspices of the TLG.

[168] The union councils have now been changed to neighborhood councils (urban) and village councils (rural), and administrative boundaries have changed as well.

[169] Government of Khyber Pakhtunkhwa. 2017. *Pakistan – Khyber Pakhtunkhwa Inclusive Urban Growth Program: Final Report*. Peshawar: Urban Policy Unit, Planning & Development Department, GoKP and Cities Development Initiative for Asia, ADB.

- Promotion of public awareness on the importance of water conservation, waste reduction, resource recovery and the protection of the environment.

- Development of cost recovery measures such as fees and user charges, which it is responsible for implementing on its own.

213. Establishment of and compliance with performance standards. The WSSCM-S draws on various sources for its budget. For schemes, the WSSCM-S uses the budget earmarked for those schemes, such as the schemes included in the provincial ADP, or those included in the budget of the provincial Public Health Engineering Department for urban areas, or the funds for the schemes adopted by provincial and national assemblies. The operational budget of WSSCM-S is provided by the provincial Government through the provincial finance department under approval from Secretary LGE&RDD. It also collects money through consumer billing, service provision and projects from INGOs. The provincial government covers WSSCM-S' capital expenditure. The original intent was for the company to improve revenue collection, make efficiency gains, gradually legalize all illegal connections, and levy a fee for solid waste management in tandem with the improvement in services.

214. The TLGs in urban centers (or CLGs as the case may be) are responsible for the planning and provision of municipal services, except in Mingora, where WSSCM-S now has responsibility for water, sanitation, and solid waste management services. The TLG is responsible for the development of different zones and plans, and the management of municipal properties, assets, and funds. Therefore, outside Mingora city limits, in union council areas that are not under the WSSCM-S, the relevant TLG provides water, sanitation, and solid waste management services.

215. Following the 2019 amendment of the 2013 Local Government Act, the roles are shifting. It is still too early to tell how these new arrangements will work out. The COVID-19 crisis has prevented a full assessment of the governance of TLGs in the region.

216. The Swat District Development Authority (SDDA) is tasked with urban development projects. It is supervised by the Provincial Urban Development Board (PUDB). The basic concept of the Authority was to provide housing facilities at suitable locations in Malakand Division to overcome the shortage of housing in the vicinity of the city centers and to develop adjoining areas. The mandate of SDDA includes: (i) provision of housing facilities in urban areas of District Swat; (ii) execution of developmental schemes in urban areas duly financed by the provincial/Federal Government. (iii) any other objectives/functions assigned by Provincial/Federal Government.[170] Being a mountainous and scenic area, infrastructure and housing plans in Mingora require well-planned schemes.

217. An assessment by the project team found the following constraints affecting the work of WSSCM-S: (i) the need for better knowledge and awareness among communities regarding waste management, water wastage and other behavioral issues; (ii) the overlap of work with PHED; (iii) the need for WSSCM-S to have legal means of enforcing regulations with regard to their mandate and work; (iv) capacity building needs among staff. (v) inadequate coordination and cooperation with district authorities. To overcome these challenges, the WSSCM-S identified the following: organizational strengthening and systems development, capacity building of staff at all levels, a review and identification of mechanisms to strengthen

[170] Swat District Development Authority. Available from: https://sdda.gkp.pk/index.php/cms/content/4 . Accessed 15 August 2020.

the enforcement of laws, rules and regulations, and the promulgation of specific laws where needed.

218. Additionally, for the WSSCM-S to fulfil its mandate of being a corporate-governed utility with high performance standards, the following barriers have to be addressed.

- Under SAMA, government staff were assigned on deputation from the TLG to WSSCM-S. The selection of such staff was not necessarily based on criteria such as performance. This meant that from the start, with the handover in 2017, there are issues with staff capacity and underperformance. Many field workers coming from the TLG lack basic skills necessary for operations and maintenance of water and sanitation services, as well as basic safety precautions when working.

- A number of field workers had reportedly been `ghost employees' when working at the TLG, drawing salaries and not attending work. This is a common issue with civil servants in many developing countries. In many cases, this is linked to the need for better income. Consequently, employees may be working at another job to supplement their income. This calls for better supervision and other forms of attendance verification, which adds to the workload of supervisors and detracts from the effectiveness of the workforce.

- As the staff in WSSCM-S are government employees, sanctions against non-performing staff are difficult. Under the rules of the Securities and Exchange Commission of Pakistan, the Board of Directors of WSSCM-S and the Chief Executive Officer can exercise disciplinary action against WSSCM-S staff. However, under civil services rules, the punitive actions have to follow lengthy disciplinary procedures. Implementing sanctions against underperforming government employees is not easily undertaken.[171] The emerging trend of taking the matter to courts and obtaining stay orders has made it more difficult.

- Low compensation levels for key management posts is another barrier**.** WSSCM-S is constrained in hiring well-qualified executives and managers for vacant senior positions, since its pay scales are on average about half of those for similar establishments. Such pay scales are not competitive. A previous study on WSSC-Abbottabad[172] showed that for the top six senior positions, the total compensation package for Abbottabad amounted to roughly half the median figure (50th percentile) for these six positions drawn from 11 similar companies,[173] primarily public sector municipal service or utility companies.[174]

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171 The Federal Government in 2010 repealed the Removal from Service (Special Powers) Ordinance of 2000, which had provided for the dismissal, removal, compulsory retirement, or demotion of government staff for inefficiency, misconduct, corruption, and other traits

172 Asian Development Bank. Cities Development Initiative for Asia (CDIA). https://cdia.asia/who-we-are/what-is-cdia/.

173 The companies selected for comparison with WSSCA and WSSCM were TransPeshawar (The Urban Mobility Company), Urban Unit Punjab, Lahore Waste Management Company (LWMC), Gujranwala Waste Management Company (GWMC), WWF Pakistan, Pakistan Poverty Alleviation Fund (PPAF), Private Power Infrastructure Board (PPIB), and Punjab Power Development Company (PPDC).

174 Government of Khyber Pakhtunkhwa. 2017. *Pakistan – Khyber Pakhtunkhwa Inclusive Urban Growth Program: Final Report*. Peshawar: Urban Policy Unit, Planning & Development Department, GoKP and Cities Development Initiative for Asia, ADB.

219. For TLGs, limited capacities are the biggest challenge. The increased decision-making powers conferred by decentralization require a different set of competencies. The sheer numbers of jurisdictions make it difficult to adequately monitor the use of funds and the implementation at Village and neighborhood council Level.[175] Budgeting and the development of plans at the district level are affected by inadequate capacities from provincial level down to district and local council levels. Local governments also need to have sufficient capacity for implementing needs assessments systematically to identify gaps in service quality and access. Sound planning is then required to address such gaps and meet community needs, especially in far-flung and rural districts.

220. Local resource mobilization is still unfamiliar ground for local governments. Local governments will need to mobilize resources locally, using innovative means of financing, developing new public-private partnerships, and using the decentralization rules that empower them to levy local taxes or undertake ventures that generate funds.

221. Focus group discussions held with TLGs in other districts and interviews in Swat showed that the strength of TLGs lay in (i) being able to provide a range of comprehensive services such as water, sanitation, waste management, addressing encroachment and settlement issues, and tree plantation; (ii) regularity of service provision; (iii) having the potential of increased resources and voice with the implementation of the 2019 Amendment to the 2013 Local Government Act, whereby the chairpersons of village/neighborhood councils will also be members of the Tehsil Council (iv) being equipped with staff who are more acceptable to the concerned communities,, as well as staff who have longer institutional memory, compared to other entities and government departments such as PHED, local development authorities and irrigation, and (v) having flexibility in adjusting different projects to the situation and changing needs on the ground.

222. Constraints faced by the TLGs include the following points. Roles and responsibilities need review: the staff at village or neighborhood council level were not answerable to the TLG for planning and other matters, and this inevitably led to duplication and inefficiencies. TLGs also underscored that coordination was not optimal and that they were not kept informed of relevant work or issues by the different government departments. There was no regulation for information sharing by other departments. For example, PHED was working on roads and drains but without coordinating with TLGs. Other constraints include a shortage of vehicles, the inadequate annual budget allocations for development work, the difficulty to collect fees from households (less than 10% of households paid water services fees), the lack of control on leakages, the many illegal water connections, water contamination and leakage from deteriorating pipes, lack of awareness among communities on water wastage, and the lack of focus on performance indicators and lack of staff dedicated to monitoring.

223. As a government body, the TLG has no proper performance monitoring at individual or entity level. Staff appraisal is done through the annual confidential report by the supervisors. The annual confidential report reportedly does not rely on objective performance indicators and is perceived as being subject to the personal opinion of the supervisor. Such a system would discourage employees from taking initiative to improve performance.

[175] Buzdar, F. 2016. *Local Governments in Khyber Pakhtunkhwa and Punjab: Framework, Current Status, and Challenges*. Islamabad: AAWAZ.

224. Performance indicators cited by TLGs are presented in Appendix 5. It is unknown to what extent data is regularly collected on these indicators.[176] Appendix 5 also provides an overview of staffing structures, salary ranges, and organigrams of the WSSCs and TLGs in the region.

D.4. Governance and Stakeholders: The Way Forward

D.4.1. Legal and Regulatory Framework

225. As the analysis given in the Legal and Regulatory Framework Review shows, there are several overlaps of jurisdiction between the various provincial and local institutions established in KP. The widest institutional regime is given in the LGA, 2013, which applies all over KP except for cantonment areas and areas specifically excluded from its ambit by the Provincial Government. The powers vested with local governments under the LGA, 2013, before the 2019 Amendments thereto, were wide and covered a vast array of urban and rural sector subjects including land use and building control, urban planning and design, works and services, including sanitation and water use, and several others. Regulation under the local government system was divided into district level governance and tehsil level governance. However, subsequent to the 2019 Amendments, the LGA 2013 has been significantly watered down and only a handful of municipal functions have been left within the jurisdiction of local governments.

226. It may be noted that, for Swat in particular, the local government regime was not in place. The Swat District Development Authority as a provincial entity overwhelmingly coordinates the municipal functions in the Swat region. However, ever since the repeal of the Provincial Urban Development Board, where under the Swat District Development Authority had been notified, there is a potential legal lacuna regarding the urban regime in the Swat region. There is a dire need for an independent development authority for the region.

227. Before moving on to any particular recommendations, it is necessary to highlight the constitutional regime in vogue in Pakistan. Subsequent to the 18th Amendment to the Constitution of Pakistan, 1973, the constitutional dispensation has shifted from a centralized federalist system to a devolved provincial and local tier governance system (commonly referred to as "devolution"). Article 140-A(1) to the Constitution added vide the 18th Amendment reads:

> *Each Province **shall**, by law, **establish a local government system** and devolve political, **administrative** and **financial** responsibility and authority to the elected representatives of the local governments.*
>
> *[Emphasis Supplied]*

228. A bare perusal of the above reflects that post devolution, the constitutional regime in vogue in Pakistan requires that local governments not only be empowered, but, *inter alia,* devolved administrative and financial authorities and responsibilities as well. It appears that the LGA 2013, as originally enacted, was done to meet the requirements of Article 140-A. However, as a consequence of the 2019 Amendments, the powers of the local governments as given under LGA 2013, in line with constitutional requirements, were watered down. The 2019 Amendments have still not come into force since no elections thereunder have yet been

[176] The COVID-19 situation has constrained a proper assessment of performance indicators and management information systems used by WSSCs and TLGs.

conducted. Regardless of the above, any recommendations for institutional and regulatory reforms in the KP region will have to factor in the constitutional dispensation post devolution, meaning thereby that the local governments, having authority and responsibility over administrative and financial matters, have to be given a central role.

229. Based on the above, our recommendations are as follows:

- **Disassociating planning, coordination and monitoring from implementation and development:**
    - The current legal and regulatory framework, in Swat is inadequate. Under the LGA 2013, one entity creates master plans, strategizes, coordinates, trains, builds capacity, implements, executes and conducts any manner of affairs, including land use planning and water & sanitation. This leads to a situation where the same entity which is carrying on planning and coordination functions (such as master plans, regional policy and strategy, training etc.) is also responsible for then implementing, monitoring and certifying the same.
    - Under such a regime, monitoring and effective enforcement is compromised due to a conflict of interest within the entity. Therefore, the first key recommendations which stands out from a review of the current legal and regulatory framework is that planning, coordination and capacity building have to be disassociated from implementation and development. This would mean that there is a two-tier set up with a “Planning, Coordination and Monitoring” entity on the one hand and an “Implementation and Development” entity on the other.
    - Under such a set-up, the Planning, Coordination and Monitoring entity would be responsible for:
        - Formulating master-plans and development strategies for the Swat region in consultation with all stakeholders.
        - Liaison and coordination between the various provincial entities operating in KP, such as the KPHA, the Housing Authority and the Environmental Protection Authority. Such a responsibility to liaise would enable this entity to factor the concerns of these provincial stakeholders into any master-plan or strategy that is to be proposed by this entity, as well as share any concerns of such provincial level authorities with the Implementation and Development entity.
        - Ensure that the plans and strategies that have been proposed/formulated are effectively, efficiently, and correctly implemented and provide any assistance that may be required by the Implementation and Development entity during this process.
    - The second entity which would exist under this set-up is the Implementation and Development entity which would be responsible for practically carrying out the development or organizational or administrative work required to be conducted in light of a plan or strategy formulated or proposed by the Planning, Coordination and Monitoring entity, either itself, or through special purpose

vehicles or through third party arrangements such as PPP, outsourcing or tendering.

- **Empowering local governments administratively and financially:**
    - Post devolution, it is inevitable for the Provincial Government in KP to empower its local governments to assume administrative and financial authority and responsibility. Since this would require that the funds to actually carry out any proposed work would be available primarily with the local governments, the local governments will take up the role of the Implementation and Development entity.
    - Not only would the local governments thus retain their constitutional authority and responsibility over administrative and financial matters, they would also be better placed to ensure that there are no political hurdles or reservations/objections raised from local residents of any particular region since the elected representatives of the local governments are well placed to address any concerns that the local population would have against any planned work. The local governments would also be better placed to receive the fees and charges for any works that are undertaken in their jurisdiction.
    - Most of the implementation and development work being carried out by the local governments would be on advice of a second entity which is coordinating with: regional and provincial stakeholders. other local governments operating in the province; this model will ensure coherent development throughout the KP, factoring in macro level concerns as well.
    - This model would leave discretion to the local government of Swat to decide, whether at a district or tehsil level, to implement the recommendations, plans and suggestions of the Planning, Coordination and Monitoring entity, either itself, or through special purpose vehicles set up for implementing sectoral or technical plans and strategies, or through public-private partnership projects. Any institutional capacity building, or technical training required by the local governments to achieve these objectives may also be provided to it by the Planning, Coordination and Monitoring entity.
- **Provincial and executive authorities to be planning, coordination and monitoring entities:**
    - Under the proposed two-tier set up, provincial and executive authorities would assume the role of planning, coordination and monitoring.
    - For the Swat region, there is a dire need for a development authority. Such an authority will require sufficient powers to direct local governments in whose jurisdictions its schemes may fall, to execute schemes on its behalf, take over and maintain works and services, provide amenities, and enforce regulations.
    - Such a development authority for Swat can also take on board the KP Housing Authority and factor in its input regarding preparation of regional development plans for an integrated, coordinated and systematic planning to ensure orderly growth and development of physical infrastructure such as highways, railways, industrial zones, conservation of forest reserves, etc. as well as make their

plans for development of satellite, intermediate, secondary and industrial towns to reduce migration and drift to big settlements (which would help in addressing the issue of urban sprawl) as part of the overall master plan it would propose to the local government of Swat. Any mass transit plans to be undertaken by the local government may also be proposed in light of the suggestions of the KP Urban Mobility Authority. Any urban or rural plans to be proposed by such a development authority would also account for the master plans to be developed by the KP Highways Authority.

- **Provincial level Advisory bodies**
    - Additionally, certain provincial level authorities have an overarching responsibility over the state of affairs in the province. The Environmental Protection Agency is a prime example of one such agency which is tasked with ensuring that the province as whole proceeds in a manner which provides for the protection, conservation, rehabilitation and improvement of the environment, for the prevention and control of pollution, and promotion of sustainable development.
    - The EPA may also provide strategic environmental assessment, of socio-economic development, industrial and agricultural development, urban and rural development, land use and water use management; economic zones or industrial parks and estates; transport and infrastructure; solid, municipal and industrial waste; tourism; or any other plan or policy likely to have an adverse impact on environment. Additionally, the Government may also require a strategic environmental assessment for the prevention of water pollution through improper sanitation and control flow of sanitation water into the rivers. specifying separate zones for poultry and cattle farming and slaughtering houses.
    - The Government could also then require the Planning, Coordinating and Monitoring entity to seek advice of the EPA and to include such measures and take such steps, as it deems necessary, to modify the policy or development plan according to environmental objectives.
    - However, to enable the EPA to effectively contribute to the development matrix, significant capacity building has to take place in the EPA to ensure its efficacy. KP is perhaps the most environmentally sensitive province in Pakistan and any planning and development related activity that is to be conducted in the province has to meet the requirements of sustainability. Therefore, significant budgetary allocation has to be made to empower the EPA and build it to a capacity which can handle its responsibilities.
    - Furthermore, the policing powers of the EPA have to be upgraded to ensure that it can prevent any activity causing any loss to the environment by the Implementation and Development entities as well as any plans being formulated by the Planning, Coordination and Monitoring wing.
    - Additionally, a provincial level transport authority is required as a coordinating and consulting arm between the KP Highways Authority and the Khyber Pakhtunkhwa Urban Mobility Authority (KPUMA). The KPUMA is legally empowered to examine the plans for all land use master plans, schemes and

projects primarily related to infrastructure and land use but not limited to that initiated by any Department or authority of Government, as to ensure their compatibility, suitability and sustainability with present and future mass transit systems, schemes and projects, and to this end, an assistive role is assigned to it under the Urban Mass Transit Authority Act. However, greater role has to be ascribed to KPUMA to ensure that it has a say in any road network development projects being undertaken anywhere in the KP province and liaison with the KPHA to create a holistic transport and road network in KP.

D.4.2. Institutional Reforms

D.4.2.1. Policy Recommendations

230. Policy decisions are required for a sustainable solution to address the inadequate human resource capacity and non-performance of WSSCM-S staff. This is a basic condition for all WSSCs to become autonomous, corporate-governed utilities providing high quality services. The policy measures could include components such as financial and non-financial incentives for performance, contract employment, release of non-performing government staff, and capacity development for staff with potential. Policy measures should also require: (i) effective management information systems for WSSCs, including periodic household surveys to back up the administrative data (ii) staff performance feedback systems; (ii) transparent complaint response mechanisms for the public.

231. Greater financial predictability and efficiency need to be assured for the WSSCM-S. A combination of efficiency measures needs to be employed with measures to protect the poor. Policies should identify funding sources and financing strategies to assure adequate, predictable and timely funds for the WSSCM-S each year.

232. Following the 2019 Amendment of the 2013 LGA, and the abolition of district-level government, there is now a lack of clarity on reporting, functions and roles in a number of sectors. To avoid potential tension in relationships between the government bureaucracy and elected representatives, policies for each sector and subsector need to be reviewed and regulations issued to clearly define the role of each official.

D.4.2.2. Institutional Recommendations

233. The respective mandates and envisaged roles of WSSCM-S, Swat district development authorities, and tehsil/city local governments should be further reviewed, clarified and defined. The normative role of the province — especially that of the Public Health Engineering Department — also needs to be defined, especially following the 2019 revision to the 2013 Local Government Act. The province needs to lead this exercise with the participation of policy- and decision makers.

234. Capacity strengthening of the institutions responsible for planning, delivering, and management of urban services is a top priority. Training and professional development could be used as incentives for good performance. Efforts need to be made to broaden the scope of training beyond a narrow specific area in order to develop an agile adaptable workforce with transferable skills, such as planning and management.

E. SOCIO-ECONOMIC SETTING

E.1. Demographics

235. Khyber Pakhtunkhwa is the 3rd most populous province of Pakistan but it is a predominantly rural province, especially after the merger. Some 83% of Khyber Pakhtunkhwa's population is rural. Although only 16.83 percent of the provincial population, residing in 23 out of 35 districts is designated as urban in 2017 as compared to 14.72 percent in 1998, around 65 percent of the total provincial urban population lives in just 10 cities of 9 districts (Figure 11).

236. In recent years, Pakistan has not been able to conduct population censuses regularly. After censuses in 1951, 1961, 1972, 1981, 1998, the next was conducted in early 2017 and provisional results were released in August 2017. Even so, detailed demographic census data have not yet been released due to complaints of undercount by some smaller provinces. So far, only the basic data (population and households) have been released, down to Population Circle level.

237. This section briefly sets out the key factors in population patterns and population change in Swat district and identifies potential growth scenarios to be considered in making projections into the future. Such projections are necessary not only for medium- to long term planning for urban infrastructure and services.

238. For Swat district, population data from the 2017 census was available down to union council level (Appendix 1). In 2020, Swat district, with a population of some 2.55 million accounts for 7% and 12% respectively of the province's total and urban population.[177] Table 15 provides an overview of key demographic data for the region. Section E.1.1 summarizes the population distribution in the region, while Sections E.1.2 and E.1.3 analyzes the population patterns, their drivers, and growth trends.

E.1.1. Population Distribution

239. Khyber Pakhtunkhwa's provincial population represents 16.5% of Pakistan's total with a density of 349 per/km^2 which is well below the country's average of 244 per/km^2 (Table 11).

Table 11: Pakistan's population

Province	Area (km^2)	Population 2017	Population Density
Balochistan	347,190	12,344,408	36
Islamabad Capital Territory	906	2,006,572	2,215
Khyber Pakhtunkhwa	101,741	35,525,047	349
Punjab	205,345	110,012,442	536
Sindh	140,914	47,886,051	340
Total	796,096	207,774,520	261
Sub-National Autonomous Region	**Area (km^2)**	**Population 2017**	**Population Density**
Azad Jammu and Kashmir	13,297	4,045,366	304

[177] All population estimations and projections – including those related to the 1998 census – have been adjusted for the incorporation of FATA into Khyber Pakhtunkhwa in 2018; i.e., FATA's population has been added on to the totals for the province, as well as at each district level, where applicable. Greater Abbottabad Region does not have districts that include any of the former FATA population within their official boundaries.

Gilgit-Baltistan	72,971	3,500,000	48
Total	86,268	7,545,366	87
Grand Total	882,364	215,319,886	244

Source: Government of Pakistan. 2017. Provisional Summary Results of 6th Population and Housing Census 2017. Islamabad: Pakistan Bureau of Statistics.

Table 12: Pakistan urbanization levels

	1951		1961		1972		1981		1998		2017	
	Pop. million	Percent	Pop. million	Percent	Pop. million	Percent	Pop. million	Percent	Pop. million	Percent	Pop. million	Percent
Punjab												
Urban	3.57	17.4	5.48	21.5	9.18	24.4	13.05	27.6	23.02	31.3	40.39	36.7
Rural	16.97	82.6	19.99	78.5	28.42	75.6	34.24	72.4	50.60	68.7	69.63	63.3
Sindh												
Urban	1.77	29.2	3.17	37.9	5.73	40.4	8.24	43.3	14.84	48.8	24.91	52.0
Rural	4.28	70.8	5.20	62.1	8.43	59.6	10.79	56.7	15.60	51.2	22.98	48.0
KP												
Urban	0.50	11.1	1.76	13.2	1.20	14.3	1.67	15.1	2.99	16.9	5.73	18.8
Rural	4.05	88.9	4.97	86.8	7.19	85.7	9.40	84.9	14.75	83.1	24.79	81.2
Balochistan												
Urban	0.14	12.4	0.23	16.9	0.40	16.5	0.68	15.6	1.57	23.9	3.40	27.5
Rural	1.02	87.6	1.13	83.1	2.03	83.5	3.66	84.4	5.00	76.1	8.94	72.5
Pakistan*												
Urban	5.99	17.7	9.65	23.1	16.59	25.4	23.84	28.3	43.04	32.5	75.58	36.4
Rural	27.75	82.3	32.23	76.9	48.72	74.6	60.41	71.7	89.32	67.5	132.19	63.6

Source: UNDP. 2019. Development Advocate: Pakistan – Sustainable Urbanization.
Note: * Includes the population of erstwhile FATA and Islamabad

240. Khyber Pakhtunkhwa also has the lowest level of urbanization in the country at only 16.5% compared to the national level of 36.4% (2017).[178] Table 12 compares KP's urban-rural population split with other provinces. At the same time, KP is second only to Balochistan in terms of population growth rate, both urban and rural (Table 12).

241. It is critical to note that although only 16.5% of the population is considered urban, over 67%[179] of the population lives within a 1-hour drive of a significant urban center. This is indicative of the high levels of urban sprawl in which residents are still officially considered rural.

242. Urban population growth in Pakistan's major cities is, on average, attributed to 70% natural growth and 20% rural-urban migration.[180] This compares to Bangladesh, for example, where 40% of urban growth is due to rural-urban migration. However, the relatively low rural-urban migration contribution may again be the result of how "urban" is defined and measured in Pakistan where it is limited to populations within official urban boundaries rather than by actual settlement characteristics. Satellite image analysis illustrates how more than half of the "urbanized" area of Peshawar city, as an example, is actually counted as rural with the result that statistics can be misleading. This situation places undue stress on the local government as unofficial "urban" residences draw upon official urban services, impact the environment, utilize the transport infrastructure, but do not necessarily pay their share of taxes and user

178 Peshawar City Development Plan (Draft), 2019.
179 Integrated Development Strategy, 2014-2018 Government of Khyber Pakhtunkhwa.
180 Sustainable Urbanisation, UNDP, May 2019.

fees. At the same time provincial and national government transfer payments are often per capita based in which case receive far less funding allocations than they are actually providing services for.

Table 13: Pakistan urban-rural growth rates

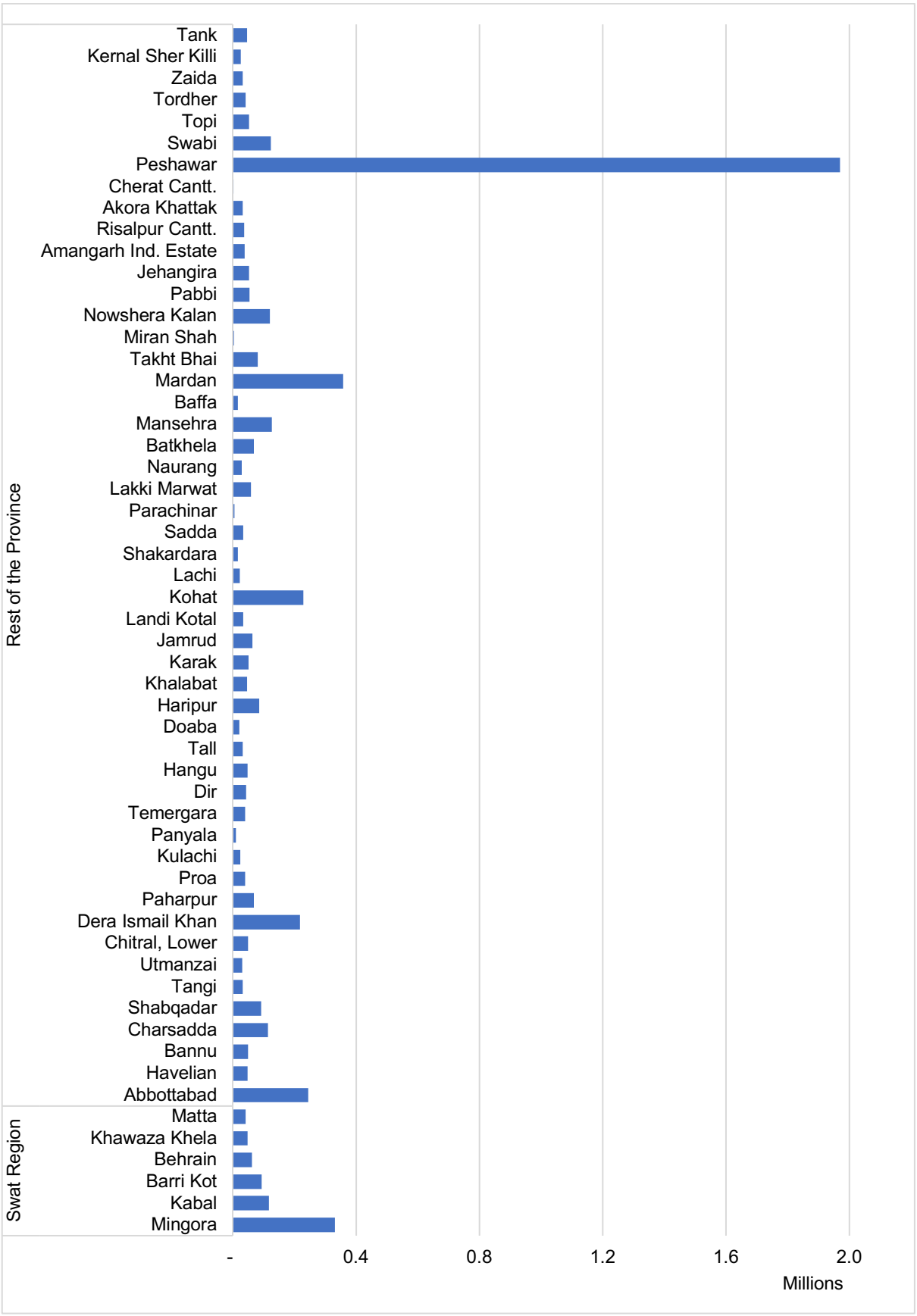
Province	Percentage increase in population during:				
	1951-1961	1961-1972	1972-1981	1981-1998	1998-2017
Punjab					
Urban	53.5	67.5	42.2	76.4	75.5
Rural	17.8	42.2	20.5	47.8	37.6
Sindh					
Urban	79.1	80.8	43.8	80.1	67.9
Rural	21.5	62.1	28.0	44.6	47.3
KP					
Urban	52.0	57.9	39.2	79.0	91.6
Rural	22.7	44.7	30.7	56.9	68.1
Balochistan					
Urban	64.3	73.9	70.0	130.9	116.6
Rural	10.8	79.6	80.3	36.6	78.8
Pakistan*					
Urban	61.1	71.9	43.7	80.5	75.6
Rural	16.1	51.2	24.0	47.9	48.0

Source: UNDP. 2019. Development Advocate: Pakistan – Sustainable Urbanization.

243. The reason for the low overall rate of urbanization in KP as a whole is illustrated in Table 15 and Map 9 which shows that KP's population is concentrated in the Peshawar Region and 3 or 4 adjacent Districts. By contrast, the Swat Region/District has an estimated total population of 2,548,862 (2020) which is almost 6.6% of KP's total 38,623,451.[181] The Region averages 70% rural population and almost 30% urban compared to the KP overall urban level of only 16.5%. The average population density in the district is 473 persons/km^2.

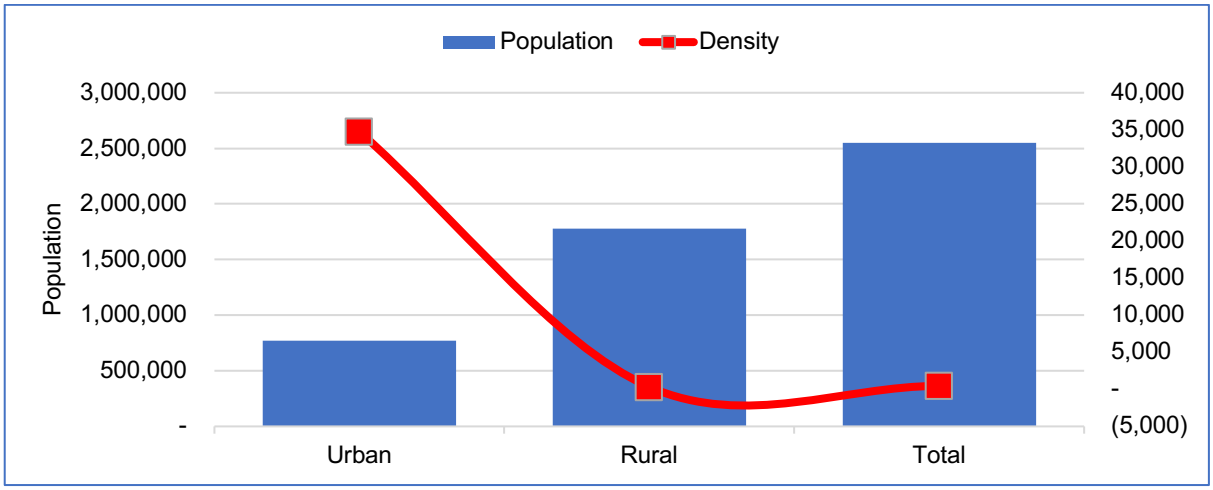
[181] Population Census Organisation, Pakistan.

Figure 11: Cities' population in Khyber Pakhtunkhwa (2017)



Source: Computed from 2017 census data of the Pakistan Bureau of Statistics.
Note: * Includes the population of erstwhile FATA and Islamabad

Figure 12: Urban-rural population distribution, and density of Swat District (2020)



Source: Government of Pakistan. 2017. Provisional Summary Results of 6th Population and Housing Census 2017. Islamabad: Pakistan Bureau of Statistics.

E.1.2. Urban Population Distribution – Swat Region

244. The urban population in the Swat Region totals 771,565 (Table 14) and is concentrated in the Mingora metropolitan area with ribbon development along parts of the N-95 highway. Map 10 illustrates the relative size of the largest distinct urban centers in the region and their respective populations as of 2020. Mingora contains 48% of that total. Again, it must be noted that these numbers represent only the official urban population, not the actual urbanized population which, as illustrated in several maps in Section F, adds significantly to the population living in urbanizing conditions and drawing on the official urban area services.

Table 14: Urban Population Distribution (2020) - Swat Region

Tehsil	Urban Centre	Population 2020
Babuzai	Mingora MC	369,622
Barikot	Barikot MC	104,066
Behrain	Behrain MC	66,635
Kabal	Kabal MC	129,438
Khawaza Khela	Khawaza Khela MC	53,406
Matta	Matta MC	48,398
Total Urban		**771,565**

Source: Government of Pakistan, 2017, Provision Summary of 6th Population and Housing Census, 2017. Bureau of Statistics.

Table 15: Overview of key demographic data

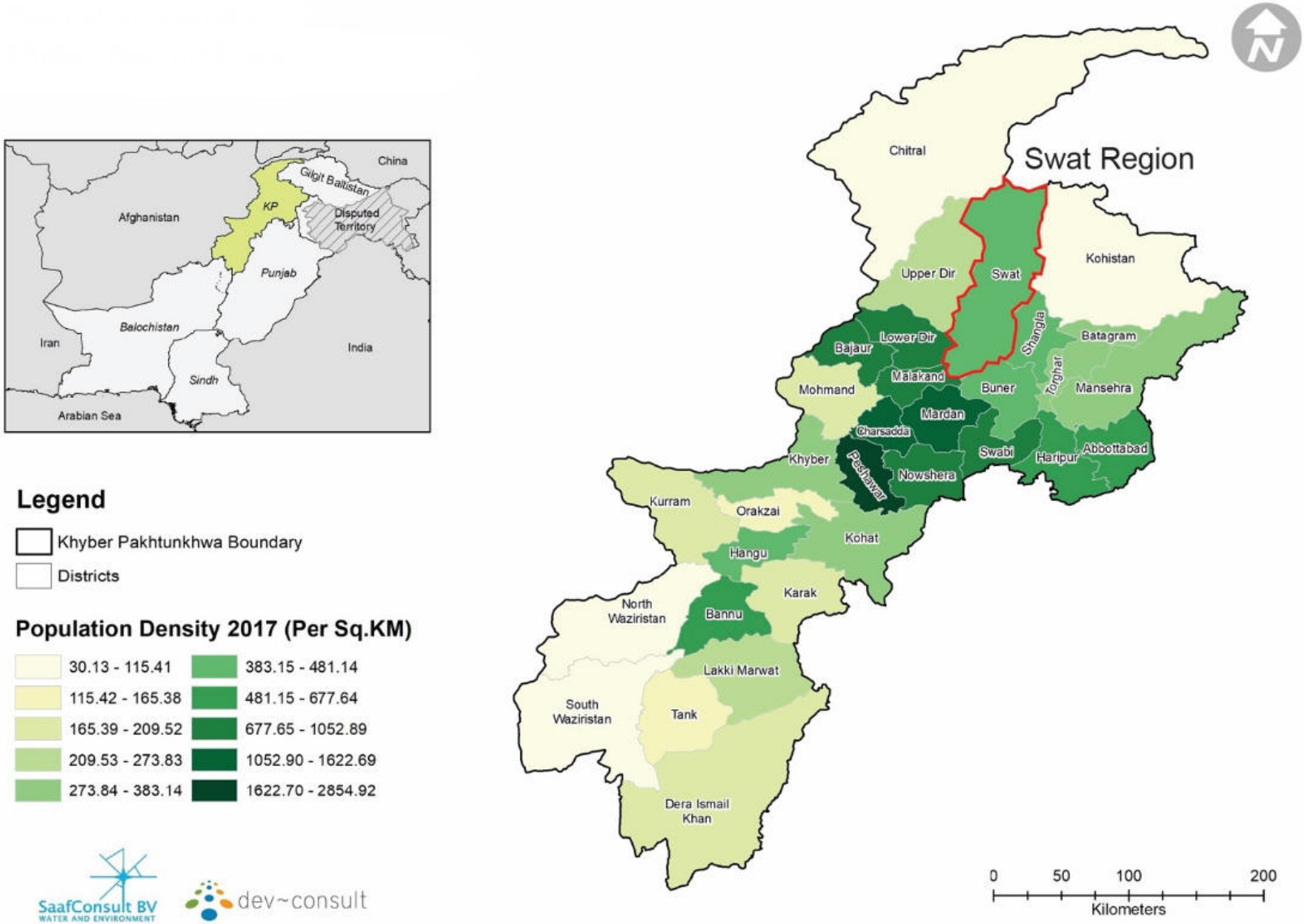
Tehsils	1998 census		2017 census		1998-2017 growth rate	2020 projections		% of Swat's urban pop.
	Total pop.	%	Total pop.	%		Total pop.	%	
Babuzai Tehsil	321,995	100%	599,040	100%	3.321%	664,053	100%	
urban	*173,868*	*54%*	*331,091*	*55%*	3.448%	*369,662*	*56%*	*48%*
rural	*148,127*	*46%*	*267,949*	*45%*	3.169%	*294,390*	*44%*	
Barikot Tehsil	99,975	100%	184,000	100%	3.263%	202,636	100%	
urban	*50,378*	*50%*	*94,245*	*51%*	3.351%	*104,066*	*51%*	*13%*
rural	*49,597*	*50%*	*89,755*	*49%*	3.171%	*98,570*	*49%*	
Behrain Tehsil	125,247	100%	248,474	100%	3.671%	278,721	100%	
urban	*38,456*	*31%*	*61,787*	*25%*	2.527%	*66,635*	*24%*	*9%*
rural	*86,791*	*69%*	*186,687*	*75%*	4.114%	*212,087*	*76%*	
Charbagh Tehsil	73,682	100%	126,115	100%	2.869%	137,310	100%	
urban	*0*	*0%*	*0*	*0%*		*0*	*0%*	*0%*
rural	*73,682*	*100%*	*126,115*	*100%*	2.869%	*137,310*	*100%*	
Kabal Tehsil	244,142	100%	420,374	100%	2.901%	458,672	100%	
urban	*67,893*	*28%*	*118,103*	*28%*	2.957%	*129,438*	*28%*	*17%*
rural	*176,249*	*72%*	*302,271*	*72%*	2.880%	*329,234*	*72%*	
Khawaza Khela Tehsil	141,193	100%	265,571	100%	3.381%	293,553	100%	
urban	*24,517*	*17%*	*48,027*	*18%*	3.602%	*53,406*	*18%*	*7%*
rural	*116,676*	*83%*	*217,544*	*82%*	3.333%	*240,146*	*82%*	
Matta Tehsil	251,368	100%	465,996	100%	3.302%	513,917	100%	
urban	*19,140*	*8%*	*42,647*	*9%*	4.307%	*48,398*	*9%*	*6%*
rural	*232,228*	*92%*	*423,349*	*91%*	3.211%	*465,519*	*91%*	
Swat District	**1,257,602**	**100%**	**2,309,570**	**100%**	**3.251%**	**2,548,862**	**100%**	**100%**
urban	*374,252*	*29.8%*	*695,900*	*30.1%*	*3.318%*	*771,605*	*30.3%*	
rural	*883,350*	*70.2%*	*1,613,670*	*69.9%*	*3.222%*	*1,777,256*	*69.7%*	

Tehsils	1998 census		2017 census		1998-2017 growth rate	2020 projections		% of Swat's urban pop.
	Total pop.	%	Total pop.	%		Total pop.	%	
Khyber Pakhtunkhwa	**20,919,976**	**100%**	**35,525,047**	**100%**	**2.826%**	**38,623,451**	**100%**	
urban	*3,372,683*	*16.1%*	*5,871,532*	*16.5%*	*2.961%*	*6,408,681*	*16.6%*	
rural	*17,547,293*	*83.9%*	*29,653,515*	*83.5%*	*2.800%*	*32,214,770*	*83.4%*	

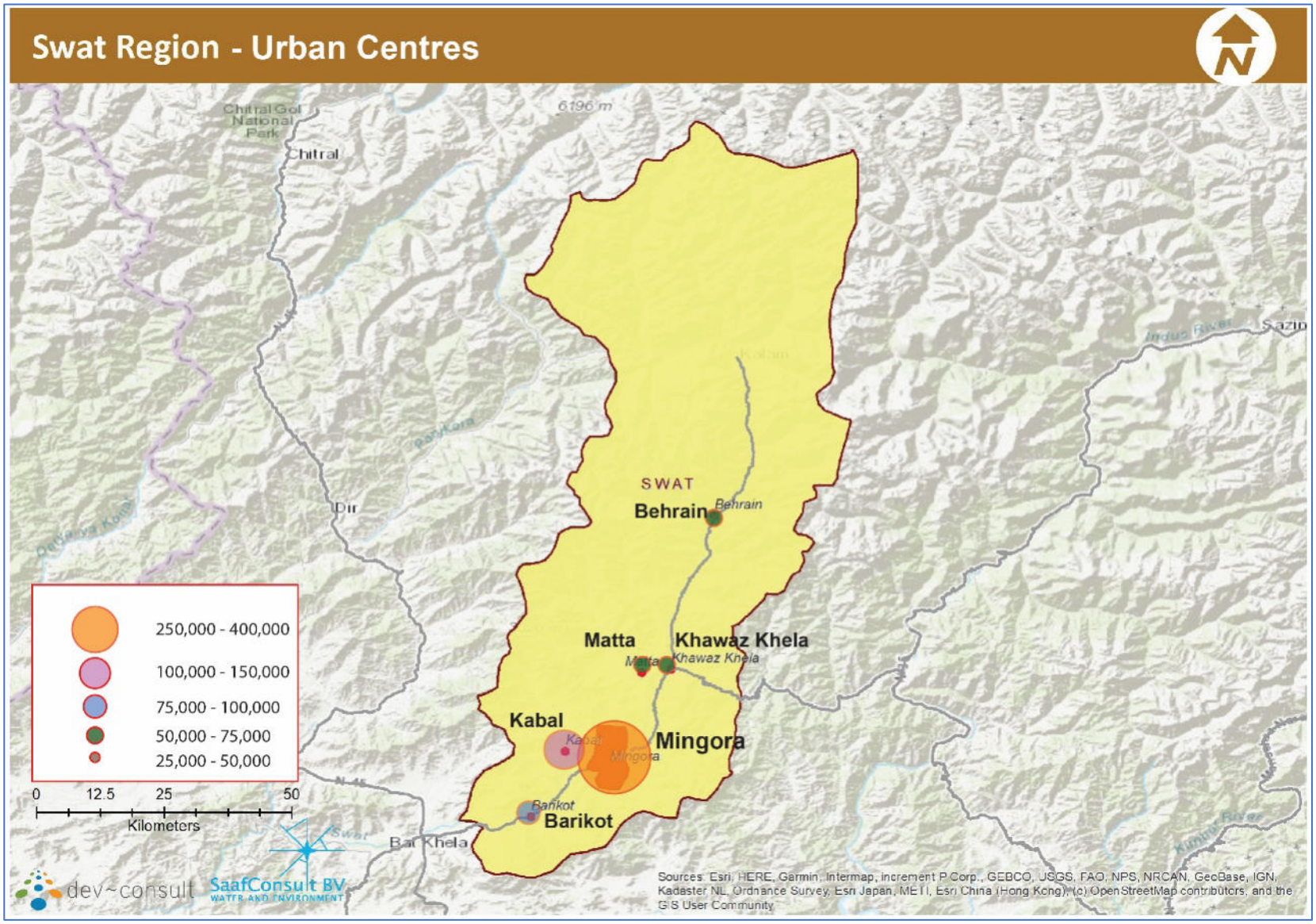
Notes: For all three districts, population projections for 2020 are made on the basis of Union Council level population results from each census, and therefore, are more precise than those for Khyber Pakhtunkhwa, which are made on average growth rate.

Source: Pakistan Bureau of Statistics. Census (Population & Housing), 1998 and 2017.

Map 9: Khyber Pakhtunkhwa Population Distribution



Map 10: Swat urban population distribution



E.1.3. Population growth patterns, migration, and driving factors

245. The population has been growing at a rapid rate, largely attributed to high total fertility rate.[182] The total fertility rate (TFR) of Khyber Pakhtunkhwa before the 2018 merger was estimated at 4.0 children per woman (3.1 in urban and 4.2 in rural),[183] which is substantially higher than the national total fertility rate (3.6). In the former FATA, the total fertility rate was estimated to be even higher in the former FATA, at 4.8 births per woman, meaning that the fertility rate in post-merger Khyber Pakhtunkhwa is likely to be higher than that estimated by the 2017–18 Pakistan Demographic and Health Survey (PDHS). The TFR for Swat is higher than both the provincial and national TFRs (Table 16).[184] Pakistan has the highest TFR in the South Asia region.[185]

Table 16: Fertility and child marriage in the region

	Women age 20–49 years who were:		Total fertility rate 2018 (Children/woman)	Women 20—24 who have had a live birth before age 18 (%)
	married before age 15 (%)	married before age 18 (%)		
Swat District	16.9	45.4	4.4	22
Khyber Pakhtunkhwa	8.9	29.6	4.0	18
urban	8.4	26.7	3.6	18.6
rural	9	30.2	4.1	17.9
Pakistan	4	18	3.6	-

Sources: Data for Khyber Pakhtunkhwa: Bureau of Statistics Khyber Pakhtunkhwa, Planning and Development Department, Government of Khyber Pakhtunkhwa and UNICEF- Pakistan, 2018. Multiple Indicator Cluster Survey 2016-17 Final Report, Bureau of Statistics, Peshawar, June 2018. (MICS 2016–2017). Data for Pakistan: National Institute of Population Studies (NIPS) [Pakistan] and ICF. 2019. *Pakistan Demographic and Health Survey 2017–2018.* Islamabad, Pakistan, and Rockville, Maryland, USA: NIPS and ICF. (PDHS, 2017–2018).

246. The high fertility rate (Table 16) is driven by several interlinked factors. These include low education levels (especially among women), child marriage (defined as marriage before the age of 18), lack of access to or inability to use modern contraceptives, all of which are influenced by culture and tradition. Poverty is another factor, especially since poor women are generally less well-educated and are less likely to use modern contraceptives than women who are not poor. Nationally, women in the lowest wealth quintile have 2.1 more births than women in the highest wealth quintile (4.9 versus 2.8).[186] The driving factors for high fertility include the following:

[182] The total fertility rate is the average number of children a hypothetical cohort of women would have at the end of their reproductive period if they were subject during their whole lives to the fertility rates of a given period and if they were not subject to mortality. It is expressed as children per woman. Source: World Health Organization. https://www.who.int/data/gho/indicator-metadata-registry/imr-details/3344 Accessed 15 August 2020.

[183] National Institute of Population Studies (NIPS) [Pakistan] and ICF. 2019. *Pakistan Demographic and Health Survey 2017–2018.* Islamabad, Pakistan, and Rockville, Maryland, USA: NIPS and ICF. (PDHS, 2017–2018)

[184] Total Fertility rate of about 2.1 children per woman is called replacement-level fertility (United Nations Population Division).

[185] For comparison, the United Nations Population Division data estimated TFRs for 2018 as follows: South Asia 2.385, Pakistan 3.51, Bangladesh 2.036, India 2.222, Nepal 1.917, and Sri Lanka 2.199. The only country in the region with a higher TFR than Pakistan's was Tajikistan (3.585) in Central Asia.

[186] PDHS, 2017–2018. Poverty factors are discussed further in Section E.7.

- *A high child marriage rate especially in Swat*. In Khyber Pakhtunkhwa, about 30% of women age 20-49 years were married before age 18, including 9% who married before age 15.[187] The child marriage rate below 18 years is much higher in Swat at 45% (Table 16). This prevents girls from completing their education and is detrimental to both the health of the mother and the child (Section 293 on health).

- *A low rate of modern contraceptive use.* About one in four women of reproductive age (15–49 years) who are married are able to use modern contraception in Khyber Pakhtunkhwa (before the merger). In Swat, the rate of modern Contraceptive use is higher (36%). While 43% of married women in Khyber Pakhtunkhwa want to limit childbearing, only 35% of married men wish to do so,[188] an indication that a married woman may not always have permission from the husband to use contraception. The low rate of contraceptive use may be due to a lack of access or an inability to use contraceptives due, for example, to tradition or behavioral factors. About 21% of married women of reproductive age in Khyber Pakhtunkhwa wish to limit the number of children or space their births, but are unable to do so. Such an "unmet need for contraception" is lower in Swat (16%) (Table 17).[189] Traditional means of contraception are not always effective.

- *Poorly educated household heads and women.* The 2016–2017 MICS survey[190] shows that the prevalence of child marriage in Khyber Pakhtunkhwa is higher in communities where education levels are lower. Among women with no education, 36% were married before age 18.

Table 17: Contraceptive use by province and district

	Khyber Pakhtunkhwa			Swat District
	Total	Urban	Rural	
Modern contraceptive use	26%	34%	25%	36%
Traditional methods of contraception	6%	10%	5%	4%
Unmet need: contraception	21%	17%	22%	16%

Source: Bureau of Statistics Khyber Pakhtunkhwa, Planning and Development Department, Government of Khyber Pakhtunkhwa and UNICEF- Pakistan, 2018. Multiple Indicator Cluster Survey 2016-17 Final Report, Bureau of Statistics, Peshawar, June 2018. (MICS 2016–2017).

247. Migration is a significant factor in the observed population trends. Economic expansion of certain areas is a reason for migration to that area and subsequent population growth. Rural to urban migration takes place among families and young people in search of better livelihood opportunities or improved education options for their children. Another reason is the modernization of farms, when rural livelihoods may become less viable for those who are unable to adapt. An additional factor fueling rural to urban or peri-urban migration is that provincial capitals in Pakistan and district capitals receive a larger share of budget allocation for social and physical infrastructure development than do other areas, since the federal government considers infrastructure development essential for attracting and retaining new investments. Table 15 shows that of the six tehsils in Swat district with both urban and rural

187 Bureau of Statistics Khyber Pakhtunkhwa, Planning and Development Department, Government of Khyber Pakhtunkhwa and UNICEF- Pakistan, 2018. Multiple Indicator Cluster Survey 2016-17 Key Findings Report, Bureau of Statistics, Peshawar, March 2018. (MICS 2016–2017)

188 PDHS, 2017–2018

189 MICS, 2016–2017

190 MICS, 2016–2017.

areas, growth rates were higher in urban areas than in rural areas between the 1998 and 2017 censuses. The exception is Behrain tehsil, where rural areas have a high annual growth rate exceeding 4%. Among all the urban centers in Swat, Matta town has the highest growth rate (4.31%), where the growth rate well exceeds that in Mingora (3.45%).

248. **The interaction between migration, education and social norms shape the population growth patterns.** The various push-and-pull factors in migration (economic and educational opportunities) interact with the factors linked to fertility (education and social norms). Social norms in cities, which generally have a more educated population than that in rural areas, encourage lower fertility trends. On the other hand, inward migration from rural areas leads to higher growth rates in urban and some of the peri-urban areas. Over time, however, the social norms of new urban arrivals may change, and they may wish to have less children. The rural areas have higher fertility due to lower education levels, lower contraceptive use, and a higher proportion of child marriages. Counterbalancing these higher fertility rates (a general characteristic of rural populations), the population growth in rural areas may fall if enough of the rural population migrate to urban or urbanizing centers. Some of the urban population may also move out to peri-urban areas, where accommodation and land are cheaper, yet the distance to work is still close enough. Moreover, rural to urban migration is not always the case. Within Pakistan, 39% of urban migrants came from another urban area, while 31% of people who migrated into rural areas came originally from urban areas.[191] Depending on this mix of factors, different municipalities have different population growth patterns.

249. The overall pattern shows migration superimposed upon fertility patterns, with outward migration from rural areas to urban centers. In these rural areas, the outbound migration and higher child mortality rates appear to have outweighed the higher fertility rates.

250. For Khyber Pakhtunkhwa, the main impact of high population growth would be a delay in the onset of benefits from a potential demographic dividend. Pakistan is undergoing a rapid demographic transition with young adults entering the labor market, presenting the country with an opportunity to benefit from a potential demographic dividend. The age dependency ratio for Pakistan has been decreasing over the past two decades (from 85 in 2000 to 64 per 100 working age population in 2020).[192] Khyber Pakhtunkhwa has a younger population and its age dependency ratio is estimated to be much higher, at around 79 per 100 working age population.[193] In Khyber Pakhtunkhwa, children below age 18 constitute nearly half the population (46.7%).[194] Even if fertility rate declines over time with socio-economic progress, the population will continue to have high growth for some time, due to demographic inertia after birth rates have fallen. The high growth requires a rapid expansion of services and infrastructure and increases the age-dependency ratio at the young end (birth to 14 years). It also makes it much harder to achieve education targets and goals, as the school-aged population grows, and parents struggle to find the resources for their children's education.

191 PDHS, 2017–2018.

192 United Nations Population Division estimates. Available from: https://population.un.org/wpp/ Accessed 15 August 2020.

193 Estimated from household survey data (MICS, 2016–2017).

194 Estimated from household survey data (MICS, 2016–2017).

E.1.4. Population Growth Trends

251. To be aligned with the government's planning, short- to medium-term planning should use the 1998–2017 intercensal growth rate. The PBS and the Khyber Pakhtunkhwa government use intercensal growth rates (a linear trend between two census points) for all population projections.

252. However, since a broad range of factors contribute to population growth trends, the growth trend may deviate from the intercensal projection in the longer term. Given the various cultural, economic, and social factors influencing population growth rates, long-term planning should realistically consider more than one population growth scenario. The scenarios would differ according to the factors influencing growth trends (section E.1.2.), such as fertility, mortality, migration, contraceptive use, age of marriage, livelihood and economic opportunities.

253. The United Nations Population Division (UNPD) has worked out long-term population growth scenarios for Pakistan and other countries.[195] Using informed estimates of the core components of population growth or decline — fertility, mortality, and migration — drawn from studies and reviews of national reports, surveys and studies, UNPD provides three growth scenarios up to the end of the century (2100). The high growth variant predicts Pakistan's population to exceed half a billion by then, while the low growth variant sees a levelling off of population growth around 2065 (Figure 13). Although growth rates had started decreasing in Pakistan after 1985 (Figure 14), the UNPD predicts that from 2020 to 2045, strong growth will continue (due to demographic inertia) with levelling off in the low growth model by about 2050.

254. Using parameters proportional to the national model calculated by the UN, the project team calculated two trajectories for the region, which were then applied to the Swat Region. The starting premise was the 2017 population data for each area, together with the intercensal growth rates calculated by the PBS for that area. One of the main factors to consider is that Khyber Pakhtunkhwa province has a higher fertility rate (4.0) than the national rate (3.6). Figure 15 shows the fit of this model with previous census data and with the linear 1998–2017 intercensal projection. The variants constructed for this report for Khyber Pakhtunkhwa fall below the 1998–2017 intercensal projection, forming two lower-growth trajectories. Thus, for the period 2017–2045, using these three trajectories, this report provides three estimates of future populations for the urban tehsils, rural parts of each districts and overall district population in Swat (Appendix 1):

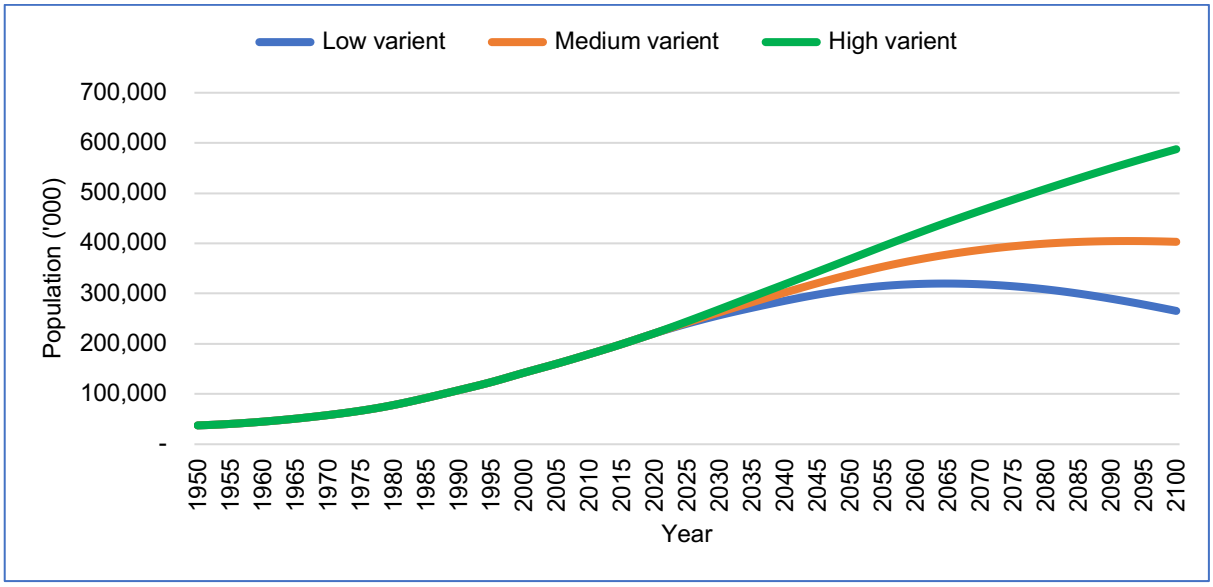
i. The 1998–2017 **intercensal projection,** which can be considered the high variant of the population growth trajectory.

ii. The "**medium variant**," constructed with growth rates proportional to the high to medium variant of the national model constructed by the UN.

iii. A "**low variant**" model, proportional to the medium variant of the UN, and with a sharper decline in growth than the previous two variants.

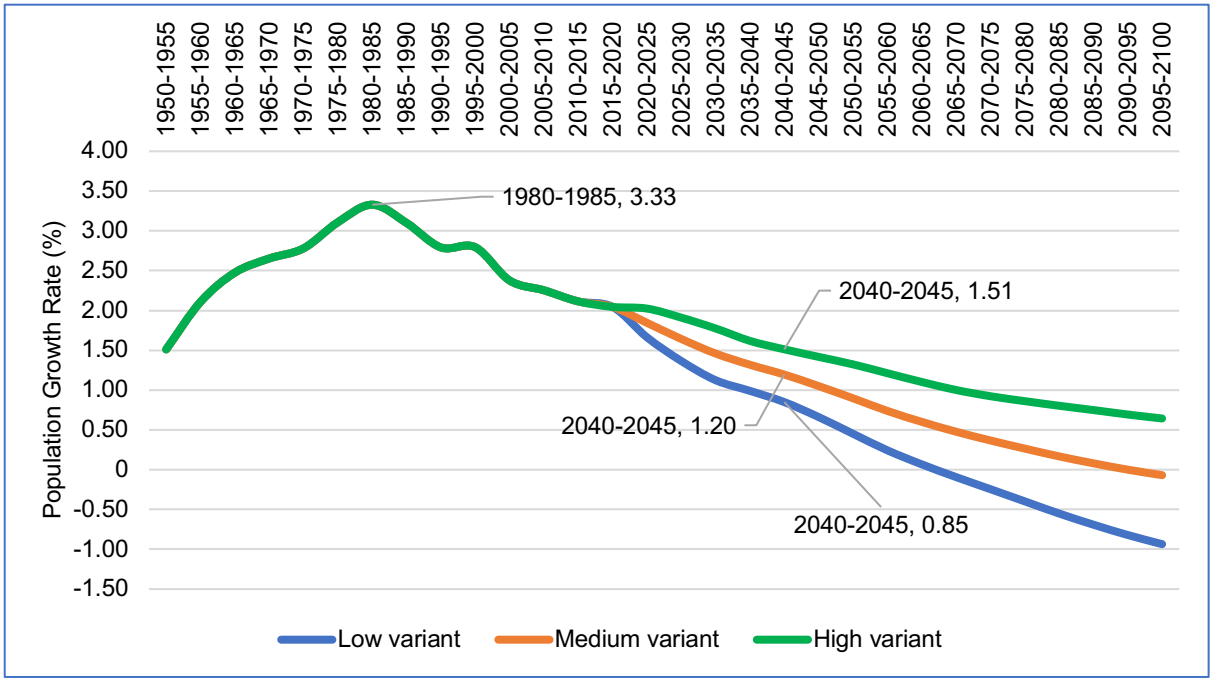
[195] United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, Online Edition. Rev. 1.

Figure 13: Pakistan: population projections by the UN Population Division



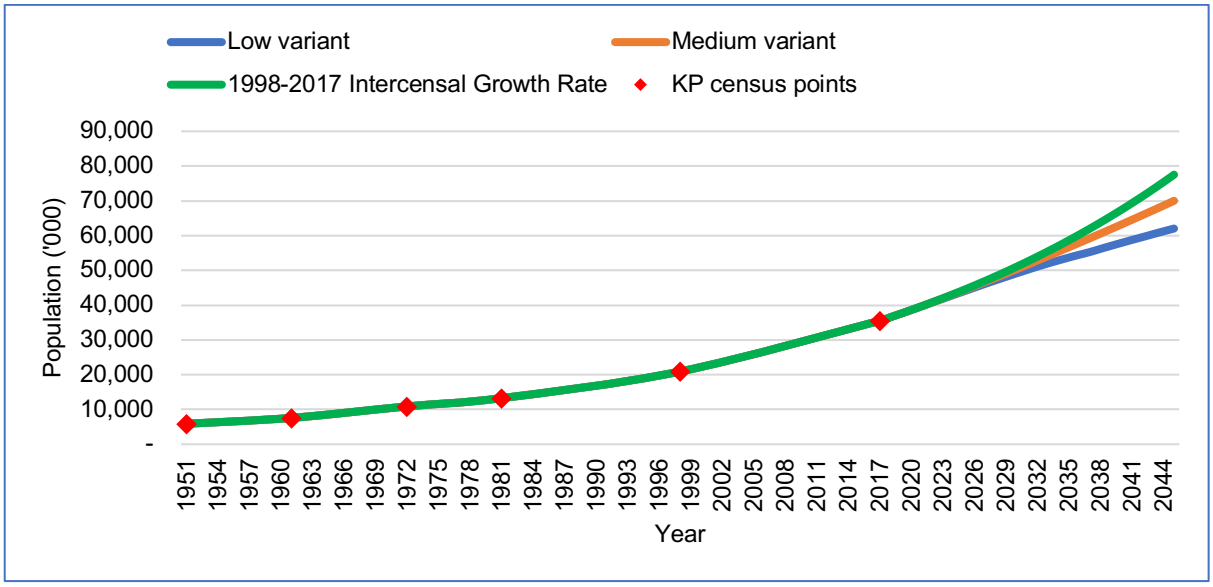
Source: United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, Online Edition. Rev. 1.

Figure 14: Pakistan actual growth rates and projections by the United Nations



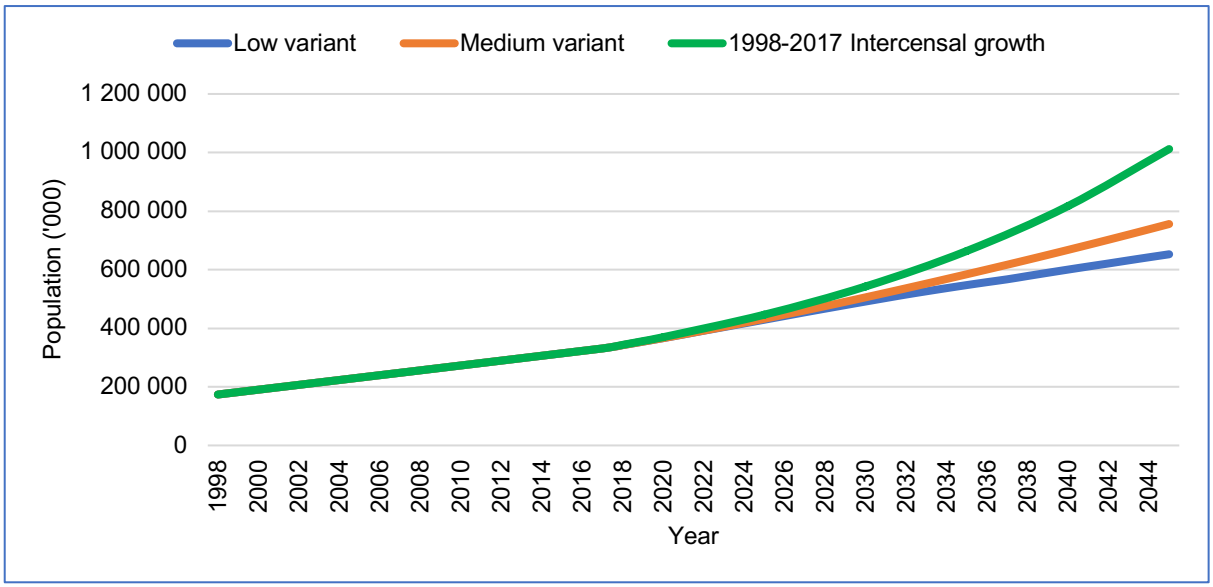
Source: United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, Online Edition. Rev. 1.

Figure 15: Khyber Pakhtunkhwa population growth projections



Sources: Computed from 1998 and 2017 census data of the Pakistan Bureau of Statistics.
United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, Online Edition. Rev. 1. (See text)

Figure 16: Mingora city: population projections to 2045



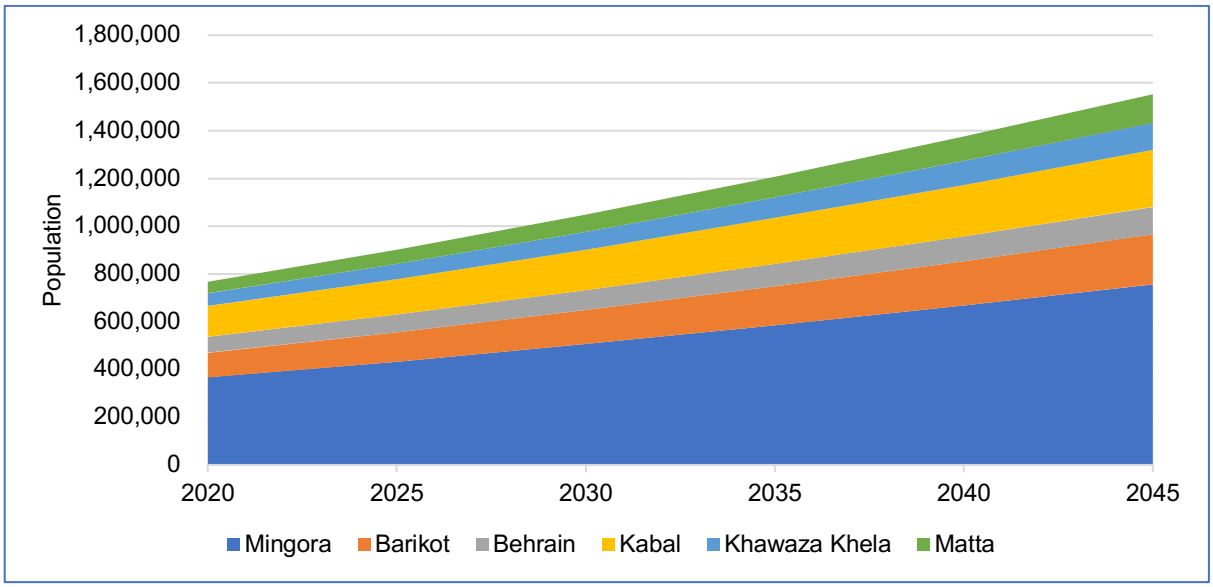
Sources: Computed from 1998 and 2017 census data of the Pakistan Bureau of Statistics.
United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, Online Edition. Rev. 1. (See text)

255. Figure 16 presents the population variants calculated for Mingora according to these three trajectories. This shows that the current population will increase 2.7 times by 2045 in the high growth scenario (from 369,662 to 1,011,894). Even in the low growth scenario, the population within the present city limits will be nearly double, calling attention to the need for improved planning.

256. Figure 17 shows the combined population of the six urban centers in Swat to 2045, with a medium variant growth scenario. By that year, the 2020 urban population of approximately 374,000 will have grown to some 1.55 million in 2045. In the high growth

scenario, this would be 1.94 million in 2045. By the same year Mingora city is projected to account for about half the urban population.

Figure 17: Urban centers of Swat district: combined population projections to 2045, medium variant



Sources: Computed from 1998 and 2017 census data of the Pakistan Bureau of Statistics.
United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, Online Edition. Rev. 1. (See text)

257. Household sizes have declined noticeably between 1998 and 2017, marking a lifestyle shift as well as a slight drop in fertility (Table 18). However, the average household size in Swat is still high: 8.1 in cities and 8.5 in rural areas, which are projected to 7.1 and 8.2 respectively by 2045.

Table 18: Average household sizes in Swat Region, 1998–2045

Tehsil		1998	2017	2045
Babuzai Tehsil	urban	9.12	8.02	6.73
	rural	8.76	8.19	7.36
Barikot Tehsil	urban	8.89	7.89	6.62
	rural	9.46	8.29	6.82
Behrain Tehsil	urban	8.14	7.87	7.48
	rural	8.23	8.44	8.61
Charbagh Tehsil	urban	-	-	-
	rural	8.48	8.23	7.83
Kabal Tehsil	urban	10.04	8.50	7.26
	rural	9.47	8.88	8.10
Khawaza Khela Tehsil	urban	7.92	8.85	10.42
	rural	8.04	8.20	8.47
Matta Tehsil	urban	9.16	8.48	7.56
	rural	8.80	8.89	8.98
Swat District	Urban	9.04	8.14	7.06
	Rural	8.75	8.53	8.20

Source: Computed from 1998 and 2017 census data of the Pakistan Bureau of Statistics.

E.2. Housing, Water and Sanitation

258. Khyber Pakhtunkhwa is characterized by a large household size and crowded sleeping rooms with an average of 4 per room used for sleeping. The average household size in Khyber Pakhtunkhwa is around 8.07 persons (7.75 in urban areas and 8.13 in rural areas). Household sizes in Swat district as a whole are slightly larger (8.3%), reflecting the largely rural nature of the district. In Mingora, the household sizes are comparable with those of urban Khyber Pakhtunkhwa.[196]

259. Well over 90% of houses in Khyber Pakhtunkhwa have electricity supply, even in rural areas. Most have roofs of durable materials but flooring less so: less than half the residential dwellings have "finished floors," meaning over half the houses have unfinished rudimentary or "katcha" flooring, including earth and bricks. Table 19 shows the characteristics of average housing in Khyber Pakhtunkhwa. and Malakand. In general, houses in Malakand on average have slightly poorer infrastructure, will less access to electricity and of less durable material than the regional average.[197]

Table 19: Average housing for the population in the region

Average House (2017)	Khyber Pakhtunkhwa			Malakand Division
	Total	Urban	Rural	
Houses with electricity supply	94.4%	99.4%	93.3%	88.1%
Houses with finished floors	45.3%	82.6%	37.4%	44.2%
Houses with roofing of durable or semi-permanent materials (wood, cement, etc.)	72%	89.4%	68.3	64.7%
Houses with only 1 room for sleeping	32.5%	31.1	32.8	29.6%
Houses with only 2 rooms for sleeping	39.7%	38.6	39.9	39.9%
Houses with only 3 rooms for sleeping	27.6%	30.0	27.1	30.4%
Average number of persons per room for sleeping	4.02	3.63	4.1	4.0
Khyber Pakhtunkhwa (includes FATA), 2017	8.1	7.8	8.1	
Malakand Division, 2017	8.5	8.0	8.5	
Babuzai Tehsil including Mingora, 2020	8	7.9	8.1	
Swat district, average household size, 2020	8.3	8	8.5	

Sources: For average house: Bureau of Statistics Khyber Pakhtunkhwa, Planning and Development Department, Government of Khyber Pakhtunkhwa and UNICEF- Pakistan, 2018. Multiple Indicator Cluster Survey 2016-17 Final Report, Bureau of Statistics, Peshawar, June 2018. (MICS 2016–2017). For average household size: computations based on Pakistan Bureau of Statistics. Pakistan census 2017.

260. Housing for the poor is less durable. The poor live in katchi (or kacha ["ramshackle"]) houses, constructed of less durable material (such as mud, bamboo, reeds, or thatch). The middle-class tend to live in what is known as pukka houses, built of substantial material such as stone, brick, cement, concrete, or timber. Semi-pukka houses are a mix between the two. Information is unavailable on the proportion of each type of dwellings in the housing stock of

196 2017 census

197 20167 MICS Report

the Swat Region. Some 22% of the provincial population do not have improved sanitation facilities, meaning that these poor households do not have sanitary toilets, toilets may be shared, and excreta is not disposed of safely.[198]

261. Household assets are prioritized by the poor. Nearly all (96%) households have a mobile phone, although 11% of households in the province do not have soap or other cleansing agents to maintain their hygiene, meaning that there are some households who do not think hygiene is sufficiently important, although they can afford mobile phones. Some 41% of households in Khyber Pakhtunkhwa own television, 56% own a refrigerator, 35% own agricultural land and 54% own livestock or farm animals. Some 10% have a vehicle (car, van, jeep) and 29% have a bank account.[199]

262. In Pakistan, unplanned settlements are known as *katchi abadis* (non-permanent settlements). Such settlements are poorly built and building codes are often not enforced. Mingora has its share of poorly built areas that highly vulnerable to seismic shocks. This was seen in the 7.5-magnitude earthquake that affected Pakistan in October 2015.[200] While the area had already been through the devastating experience of the earthquake in 2005, the poorer residents still lived in housing still vulnerable to earthquake.

263. For Khyber Pakhtunkhwa as a whole, household survey data show that piped water and underground water are the most common sources. One third of rural households and nearly half the urban households use piped water. Pumped water from shallow to artesian wells is also widely used (42.9% of urban households). These are mainly handpumps or motorized pumps. Pumped water from tube wells account for only 4.9% of sources in urban and 2.4% in rural areas. Less than 10% of the population use sources defined as “unsafe” by WHO and UNICEF, which mean surface water, unprotected springs or wells, and water purchased from tanker trucks[201] (Figure 18).[202]

264. In Swat district, 46% of the households have access to piped water, although about 70% of the district is rural. This is a relatively high coverage by piped water, and close to the provincial average for urban areas (48%). On the other hand, a 2014 assessment showed that old water schemes have rusted pipelines, some of those more than 50 years old and connections may be illegally made from others’ pipelines or from water points in the street, and therefore, prone to leaking and contamination. The same assessment reports that a new water supply scheme is usually approved on the basis of population expansion, but by the time a new scheme is approved and funds are released, the drains and septic tanks have been constructed in the area, making it difficult to maintain distance between water supply and sewage conveyance systems.[203] The second most used source is protected wells or springs. One tenth of the population uses unsafe sources (Figure 18). Around 21% of households do

198 20167 MICS Report

199 20167 MICS Report

200 The Express Tribune. 2015. ‘Massive quake hits Pakistan.’ October 26, 2015. Available from: https://r.tribune.com.pk/story/979739/horror-in-october-massive-quake-hits-pakistan/ Accessed 15 September 2020.

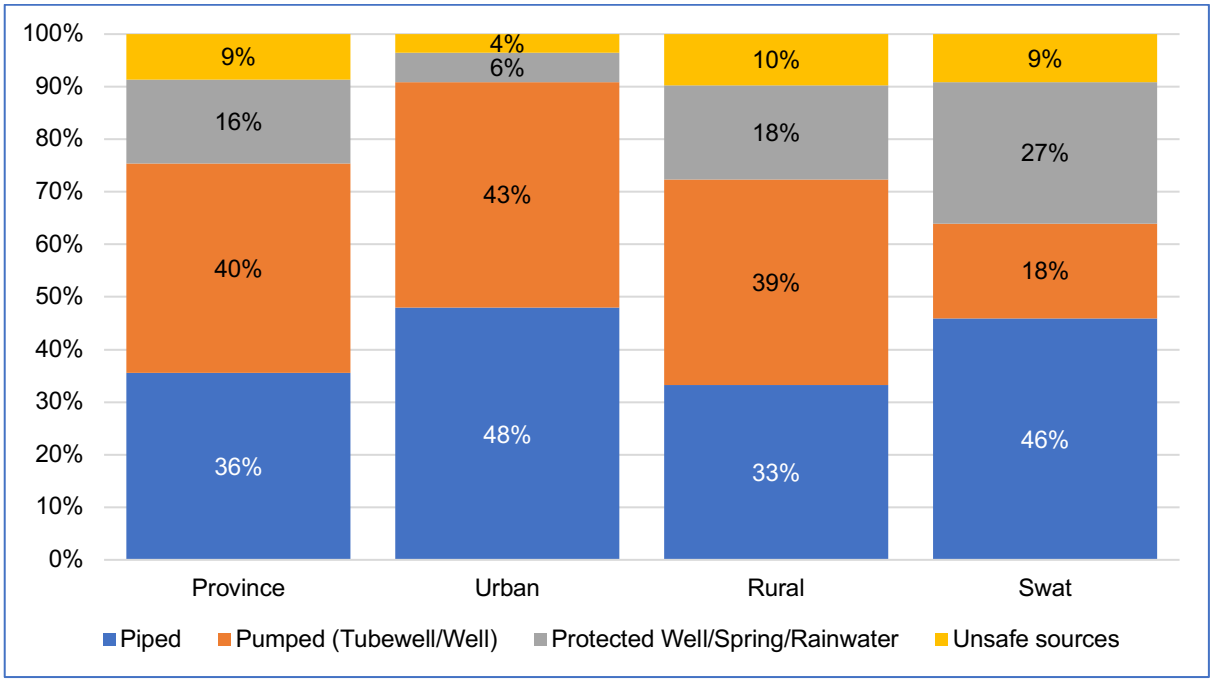
201 These are defined as unsafe because the primary source is unknown.

202 20167 MICS Report

203 Imran S., L. N. Bukhari. and Gul S. 2018. *Water Quality Assessment Report: Mingora City, District Swat, Khyber Pakhtunkhwa.* March 2018. Pakistan Council of Research in Water Resources, pp. 40.

not have water facilities on the premises and in these households, women and girls collect the water in 53% of these households. [204]

Figure 18: Sources of household water in Khyber Pakhtunkhwa and Swat District



Source: Bureau of Statistics Khyber Pakhtunkhwa, Planning and Development Department, Government of Khyber Pakhtunkhwa and UNICEF- Pakistan, 2018. Multiple Indicator Cluster Survey 2016-17 Final Report, Bureau of Statistics, Peshawar, June 2018. (MICS 2016–2017).

265. Given that piped water may not necessarily be safe if the quality is not good, water treatment at household level is an important issue. Some 95% of provincial household population (90.3% in urban areas and 96.1% in rural areas) and 96% in Swat do not treat their water. The most common method of treatment is boiling; others are using a water filter, and adding bleach.[205]

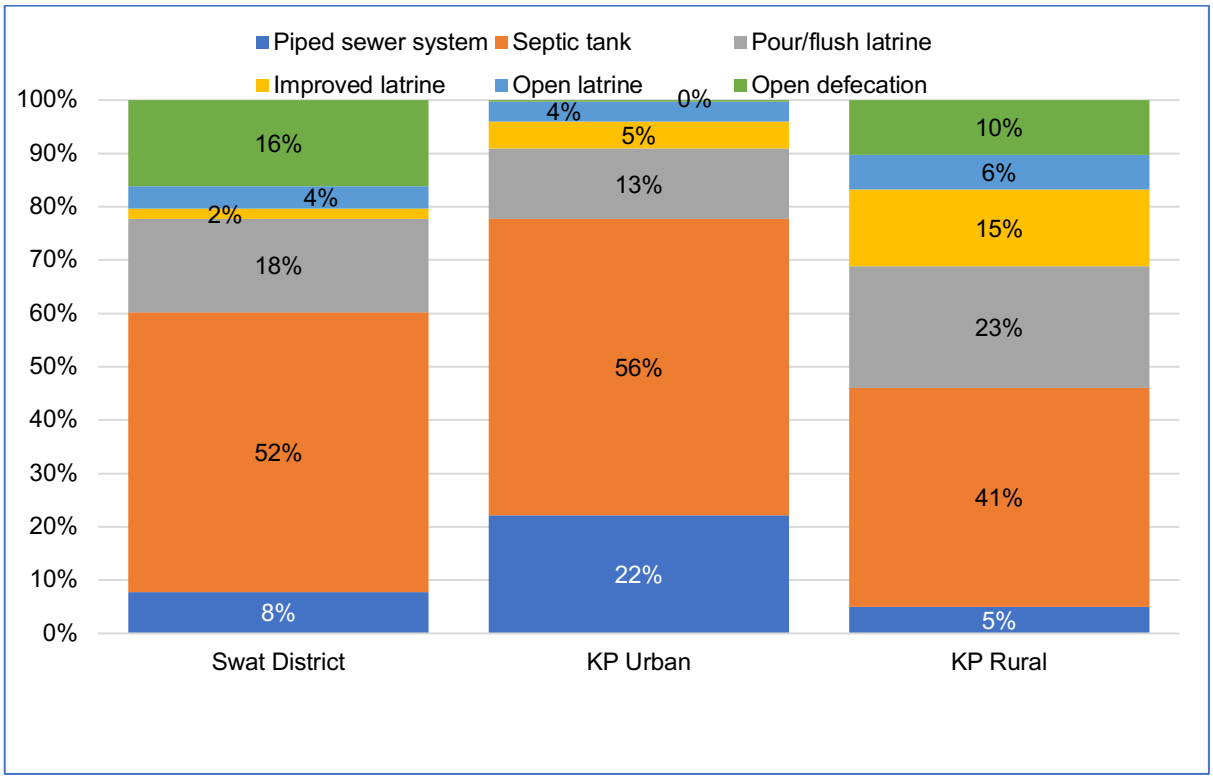
266. Most of the population in Khyber Pakhtunkhwa have access to an "improved sanitation facility", that is, one that hygienically separates human excreta from human contact. These include flush or pour flush to a piped sewer system, septic tank, or pit latrine; ventilated improved pit latrine, pit latrine with slab, and use of a composting toilet. The rest use unimproved facilities (open pit latrine, bucket latrine) or open defecation. The percentage of overall urban population who practice open defecation is small in urban (0.3%) and up to 10% in rural areas. However, among the poorest quintile of households, some 35.5% defecate in the open. Figure 19 shows that the majority of urban households in the province as well as most of the district population use pour flush latrines emptying into a sewerage system, septic tank or a pit.[206]

267. On the other hand, Swat has a relatively high proportion of population who practice open defecation (16% of the household population), higher than the provincial average for rural areas (10.3%).[207] These are likely to be the men and boys. Such practices contribute to

[204] 20167 MICS Report
[205] 20167 MICS Report
[206] 20167 MICS Report
[207] 20167 MICS Report

poor quality of water. In an assessment,[208] about 10% of groundwater sources assessed were found unsafe in terms of chemical and microbiological parameters, but at the consumer end, 66% were contaminated with total coliform bacteria and 40% were contaminated with Escherichia coli (*E. coli*).[209] The assessment attributed the contamination to poor sanitation, mixing of sewage water and open defecation. The water quality situation of Mingora City showed that problem was mainly in distribution system as the water supply lines were passing through open drains. Empirical research from other countries shows that at the household end, the contamination by *E. coli* is likely to be increased by insanitary water storage practices, handling stored water by hand, open defecation and lack of handwashing with soap.[210]

Figure 19: Household access to sanitation: Khyber Pakhtunkhwa and Swat district



Source: Bureau of Statistics Khyber Pakhtunkhwa, Planning and Development Department, Government of Khyber Pakhtunkhwa and UNICEF- Pakistan, 2018. Multiple Indicator Cluster Survey 2016-17 Final Report, Bureau of Statistics, Peshawar, June 2018. (MICS 2016–2017).

208 Imran S., L. N. Bukhari. and Gul S. 2018. *Water Quality Assessment Report: Mingora City, District Swat, Khyber Pakhtunkhwa.* March 2018. Pakistan Council of Research in Water Resources, pp. 40.

209 Total coliforms are a group of related bacteria that are used to determine the adequacy of water treatment and the integrity of the distribution system. Escherichia coli (*E. coli)* is the species of coliform bacteria that is the best indicator of fecal pollution and the possible presence of pathogens.

210 Vannavong, N., Overgaard, H.J., Chareonviriyaphap, T., Dada, N., Rangsin, R., Sibounhom, A., Stenström, T., and Seidu, R. 2017. 'Assessing factors of E. coli contamination of household drinking water in suburban and rural Laos and Thailand.' *Water Science & Technology Water Supply 18(3):ws2017133. DOI: 10.2166/ws.2017.133* Available from: https://www.researchgate.net/publication/319079322_Assessing_factors_of_E_coli_contamination_of_household_drinking_water_in_suburban_and_rural_Laos_and_Thailand Accessed 15 September 2020.

E.3. Energy and Household Use

268. Some 88% of the household population in Swat have access to electricity (Table 20).[211] The MICS household survey reported that within the poorest quintile of households in the province, one in five households do not have electricity.[212] In low-income settlements, reliability of electricity may be an issue, since access to electricity may be obtained through informal arrangements, rather than a formal extension of government services.

269. In recent years, the use of solar energy has increased in rural areas due to excessive load shedding in the electricity supply. Cheap quality solar panels are widely used in the rural areas of the region. As well, renewable energy derived from small hydro power developments, mostly funded and developed by provincial and federal government initiatives appears to be growing. Private sector participation in the development of small to medium-size hydro power projects has thus far been limited, due to high-risk perceptions of the sector. Yet, Khyber Pakhtunkhwa is estimated by one source to have 24GW of hydro power potential.[213]

270. The continuing use of solid fuel for cooking is a health and environmental concern. Solid fuel use, mostly wood, is high in the rural parts of Khyber Pakhtunkhwa as well as in Swat district (70.5%) but lower in urban Khyber Pakhtunkhwa (15.9%). Solid fuels include wood, charcoal, crops or other agricultural waste, dung, shrubs and straw, and coal.[214] Some 79% of urban households in the province use natural gas for cooking; statistics on Mingora are not available (Table 20). The use of electricity as the main fuel for cooking is negligible.

Table 20: Primary source of domestic energy for cooking by district

	Swat	KP Rural	KP Urban
Total solid fuels, of which:	70.5%	79.2%	15.9%
Charcoal	0.5%	0.2%	0.1%
Straw shrubs, grass, crop residue	1.0%	9.0%	1.1%
Dung	0.1%	4.8%	0.3%
Wood	68.9%	65.2%	14.4%
Liquified petroleum gas	12.4%	5.1%	4.7%
Natural gas	16.6%	15.5%	78.8%
Electricity	0.0%	0.1%	0.2%
Biogas	0.4%	0.1%	0.4%
Other	0.0%	0.1%	0.0%
Total	**100%**	**100%**	**100%**

Source: Bureau of Statistics Khyber Pakhtunkhwa, Planning and Development Department, Government of Khyber Pakhtunkhwa and UNICEF- Pakistan, 2018. Multiple Indicator Cluster Survey 2016-17 Key Findings Report, Bureau of Statistics, Peshawar, March 2018. (MICS 2016–2017)

Note: Numbers may not sum precisely because of rounding.

271. The use of solid fuels is damaging for health, especially in crowded rooms. Solid fuels result in high levels of indoor smoke with pollutants and toxic emissions such as carbon

[211] Peshawar Electric Supply Company Ltd. (PESCO), a Public Limited Utility Company, provides electricity in Khyber Pakhtunkhwa, with Malakand Division being serviced through PESCO Swat Circle.

[212] MICS 2016- 2017.

[213] Swat KPK Hydropower Platform. Available from: https://infracoasia.com/our-portfolio/swat-kpk-hydro-power-platform/ . Accessed 15 September 2020.

[214] 20167 MICS Report for Khyber Pakhtunkhwa

monoxide, polyaromatic hydrocarbons, and Sulphur dioxide (SO_2), among others. Such emissions are especially damaging to the health of pregnant women and their newborns. Household air pollution causes non-communicable diseases such as stroke, ischemic heart disease, chronic obstructive pulmonary disease, and lung cancer. Close to half of deaths due to pneumonia among children under 5 years of age are caused by particulate matter (soot) inhaled from household air pollution.[215] In Khyber Pakhtunkhwa, some 92% of households using solid fuel in the richest quintile cook in a kitchen separate from the rest of the house, but on average, 37% of households using solid fuel do not have a separate room to cook in. In Swat, 71.5% of households using solid fuel do have a separate kitchen to cook in.[216]

E.4. Education

E.4.1. Policy Framework

272. Education was devolved to provincial level by the 18th amendment to the Constitution of Pakistan. Article 25-A in the amendment reads: 'The State shall provide free and compulsory education to all children of the age of five to sixteen years in such manner as may be determined by law.' However, the provincial assembly of Khyber Pakhtunkhwa has not passed any legislation to translate Article 25-A (free and compulsory education) into practice. In 2011, the Khyber Pakhtunkhwa government developed and approved the Education Sector Plan with three key objectives: (i) universal primary education, (ii) gender equality at all levels of education, and (iii) improved educational attainment by strengthening teaching-learning quality. Several reform measures have been adopted over the years in this regard with support from various development partners. In 2018, the government issued its Education Blueprint 2018-23,[217] mainly focusing on improving access to and quality of education.

273. Co-education is provided in government schools from primary to secondary level educational institutes in the district, expanding the opportunities for girls' education.

E.4.2. Context

274. In the first decade of the 21st century, Swat suffered from its largest turmoil, created by a mullah who gained extreme popularity because of his traditional rhetoric against the education of girls and against women who went out shopping. He recruited militia and eventually took over control of Swat in 2007. This militia committed extreme atrocities killing men, women and children with impunity. They wanted to enforce Pashtun cultural Islam and its main planks were eradication of girls' education and confinement of women to their home. The majority of girls' schools were targeted, with many destroyed, and children going to school were attacked. A military operation was launched against the extremist militants in 2007, but this was stopped by the government which wanted a negotiated settlement with the militants. The settlement failed and the level of militia atrocities intensified, which forced another military operation in 2009 when the entire population of Swat was evacuated. The Pakistan Army demolished the militia but by then, the militia had destroyed the city, plundered commercial, industrial and mining establishments, and destroyed government buildings.

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215 World Health Organization "Household air pollution and health". Available from: https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health. Accessed 15 August 2020.

216 MICS 2016- 2017

217 Government of KP, Education Blueprint 2018-23, Elementary and Secondary Education Department.

275. The population which had become internally displaced then returned to their homes in late 2009, and rebuilding was started. The targeting by militants of girls' education dealt a severe blow to educational advancement in the district. Parents and children suffered from trauma and insecurity for a prolonged period, not least because the people of Swat had initially supported the mullah with a huge collection of funds at every fund-raising event. After the restoration of peace in the district, schools were re-opened and enrolment started and gradually increased in the district.

276. Pakistan's education system is composed of at least four stages before tertiary, with two nationwide examinations: (a) primary (grades I to V, age 5–9 years old); (b) "middle school" or lower secondary (grades VI to VIII, age 10–12 years old),[218] (c) "high school" or upper secondary (grades IX–X, age 13–14 years old) at the end of which students sit exams for the Secondary School Certificate (SSC), and (d) "intermediate" or higher secondary (grades XI–XII, age 15–16 years old).[219] At the end of grade XII, students sit the Higher Secondary School Certificate (HSSC) examination. An HSSC is required for students to continue on to tertiary education and for some vocational pathways. For vocational training, SSC is required as a minimum.[220]

277. The private sector is increasing its share in the market for education services, although the government is still the largest provider. All government schools are sex-segregated, while the majority of the private schools have co-education. Private schools are perceived to provide education of slightly better quality, and have minimal drop-out rates. Student performance and learning competencies are better in private schools, as shown by a survey.[221] Primary and secondary education is free of cost in government schools, while private schools of different categories charge tuition fees, with some for the elite class charging exorbitant fees.

278. Data availability is not optimal for planning and analysis. Basic data on primary and secondary education are published regularly by the Department of Elementary and Secondary Education in its Annual Statistical Report (ASR), However, the ASR Report 2012-13 on non-government schools was published in 2013 and not updated since then. There are no recent statistics on private schools. The statistics on higher education institutions in the public sector are published by the Bureau of Statistics in its Annual Development Statistics. Overall, statistics need to be treated with caution. The ASR provides statistics on primary and secondary schools gross and net enrolment ratio, but these statistics are based on population projections by provincial Bureau of Statistics, and not on school censuses as in some other countries. The enrolment reported on private schools is not based on actual enrolment data, but on estimations that 6.5% enrolment is in private schools. Data on deeni madaris (Islamic seminaries), where enrolment is estimated at 2.5%, are not always reliable. A large number of deeni madaris are only teaching children to recite and memorize the text of Holy Quran in Arabic, but without teaching its meaning, and therefore do not impart reading and writing skills in Arabic, Urdu or English languages. Furthermore, large numbers of deeni madaris are unregistered. For example, in 2015, some 3,136 seminaries were registered in Khyber Pakhtunkhwa; however, 4,135 were not registered, according to officials from the ministries of

218 Elementary education is composed of primary and middle (Grades 1 to 8).

219 In UNESCO terms, both intermediate and high school are classed as "upper secondary" education.

220 UNESCO: ISCED mapping by country. Available from: http://uis.unesco.org/en/isced-mappings. Accessed 10 July 2020.

221 ASER, 2019. Annual Status of Education Report: ASER Pakistan 2018. National (Rural). Islamabad: ASER Pakistan Secretariat.

interior and religious affairs.[222] The data on the number of deeni madaris is for 2005-06 and it is published with this date in the Development Statistics of Khyber Pakhtunkhwa 2018.

E.4.3. Issues

279. Education faces several major challenges in Khyber Pakhtunkhwa. These are (i) the sharp drop in enrolment between primary and secondary, coupled with poor internal efficiency of the system; (ii) the high proportions of children, especially girls, who drop out; (iii) the wide gender gap in education at all levels, to the disadvantage of girls, (iv) the poor quality of teaching-learning in public schools and therefore, inadequate learning competencies, and (v) the need to improve education management information and analysis.

280. The sharp drop in enrolment between primary and secondary has implications for the workforce (Figure 20 and Figure 21). Children and youth who do not complete secondary education will not be able to realize their full potential in work and in life. A high birth rate produces a "youth bulge" in the population pyramid, but without developing skills and competences relevant to the economy, these youth will not be able to achieve full productivity. Despite initially high gross enrolment in primary, there is a sharp drop-off in both boys' and girls' enrolment, but much sharper among girls, once the threshold is crossed between primary and secondary. The situation has not noticeably improved between 2013-14 and 2018-19.

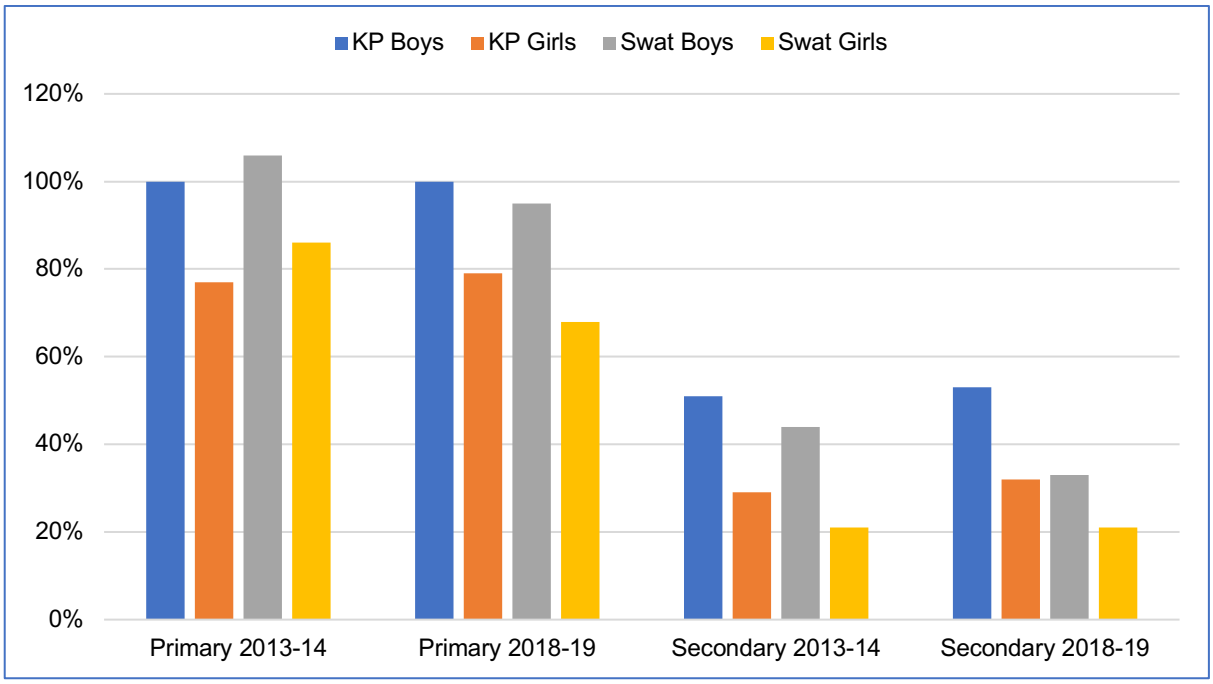
281. The inefficiencies in the public education system are indicated by the large differences between gross enrollment ratios (GER) (Figure 20) and net enrolment rates (NER) (Figure 21). In Swat, the difference is as much as 19 to 24 percentage points respectively for girls and boys at primary level, and 5 to 10 percentage points for girls and boys at secondary level. It indicates late enrolment,[223] overage children, repeaters or dropout. The difference between GER and NER is largest in primary, and this has not improved from 2013-14 to 2018-19.

282. Between 2013-14 and 2018-19, Swat district saw declines in both gross and net enrolment among both girls and boys, but more so for girls (Figure 20 and Figure 21). However, the Independent Monitoring Unit which gathers all monitoring data has not highlighted this drop in its published reports. The Education Blueprint 2018–2023 presented by the provincial Education Advisor also did not address this issue. One of the reasons could be the revised estimates of the denominator, following the 2017 census in between, but further analysis is needed.

[222] Gishkori, Z., 2015. 'Uniform standards: Most unregistered Madaris in K-P, says officials. The Express Tribune. Available from: https://tribune.com.pk/story/823639/uniform-standards-most-unregistered-madaris-in-k-p-says-officials/. Accessed 15 August 2020.

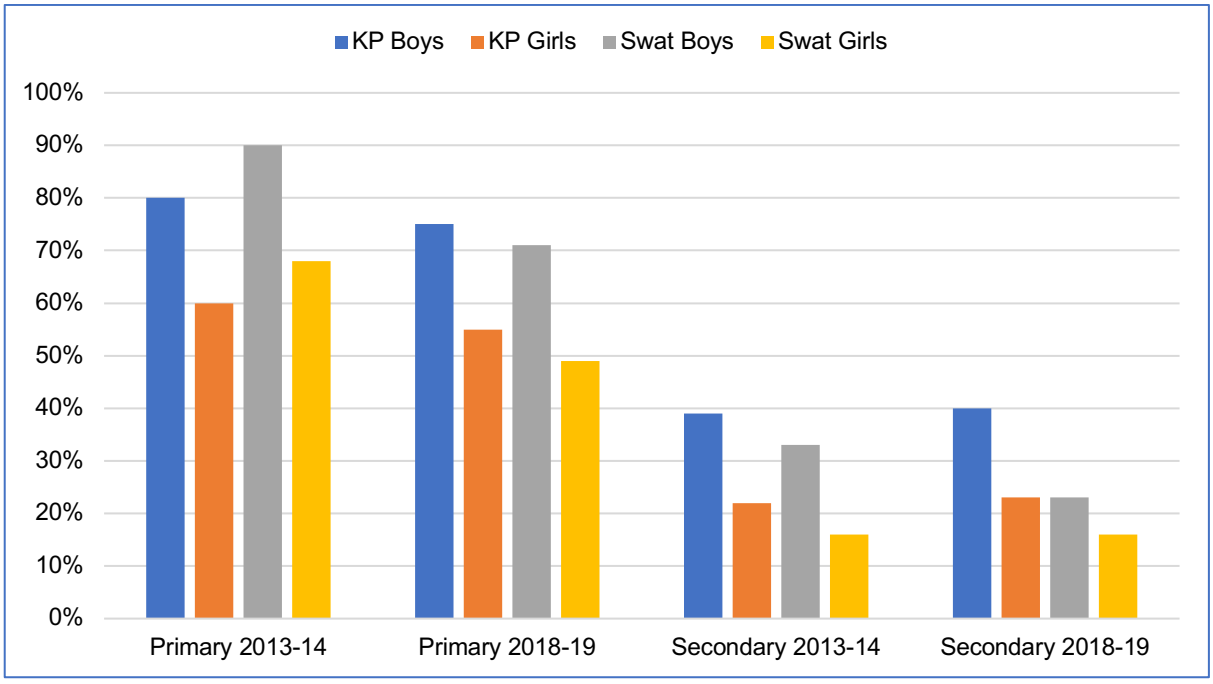
[223] Less than one-third of children of primary school entry age in Khyber Pakhtunkhwa enter grade 1 on time (MICS, 20167).

Figure 20: Gross enrolment ratios for public and private schools, and *deeni madaris* by district



Source: Government of Khyber Pakhtunkhwa. Annual Statistical Reports. Peshawar: Department of Elementary & Secondary Education, GoKP.

Figure 21: Net enrolment ratios in Swat and Khyber Pakhtunkhwa, public and private schools and *deeni madaris*

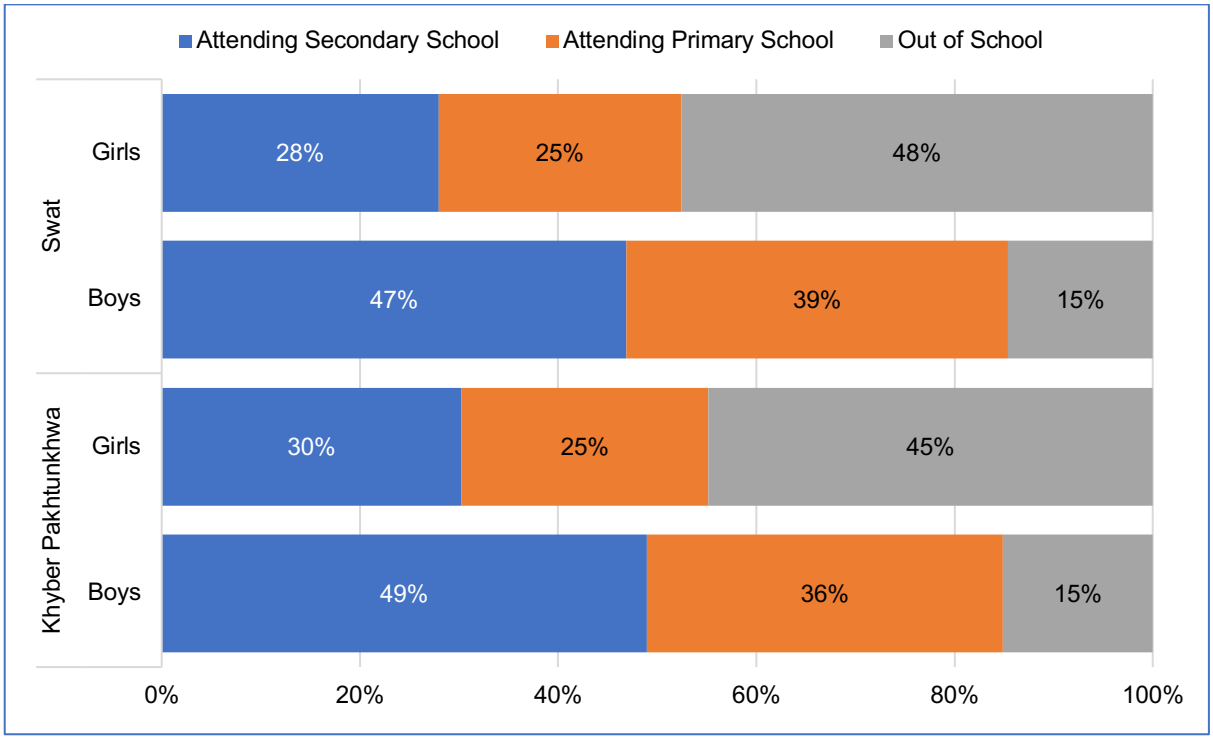


Source: Government of Khyber Pakhtunkhwa. Annual Statistical Reports. Peshawar: Department of Elementary & Secondary Education, GoKP.

283. Secondary school-aged children who are out of school (meaning dropped out from school or those never having been to school) account for 48% of girls and 15% of boys in Swat (compare to the provincial average of 45% of girls and 15% of boys in Khyber

Pakhtunkhwa as a whole).[224] Figure 22 shows these high out-of-school rates across Khyber Pakhtunkhwa and in Swat. It also shows the high proportions of overage children in primary school, due to repetition and/or late school entry: in Swat district, 25% of girls and 36% of boys who are of secondary school age are still attending primary school. The out-of-school issue is particularly serious among girls. In both Swat and the province as a whole, the proportion of girls who drop out or never attended school is three times that of boys.[225] The years of schooling are directly related to literacy.[226]

Figure 22. Children of secondary school age in Swat and Khyber Pakhtunkhwa



Source: Bureau of Statistics Khyber Pakhtunkhwa, Planning and Development Department, Government of Khyber Pakhtunkhwa and UNICEF- Pakistan, 2018. Multiple Indicator Cluster Survey 2016-17 Key Findings Report, Bureau of Statistics, Peshawar, March 2018. (MICS 2016–2017)

Note: Numbers may not sum precisely because of rounding.

284. Overall, Swat's educational system performs poorly in terms of survival to grade 5 and efficiency. A little over half the girls who enroll in grade 1 reach grade 5, while three-fourths of the boys do (Table 21). A data review across recent years shows anomalies in transition rates, reflecting poor data management.[227]

224 MICS report, 2016-2017.

225 Government of Khyber Pakhtunkhwa. Annual Statistical Reports. Peshawar: Department of Elementary & Secondary Education, GoKP.

226 For example, a study from Harvard University showed that for girls,each additional year that marriage is delayed is associated with 0.22 additional year of schooling and 5.6 percent higher literacy. Field, E. and Ambrus, A., 2008. Early marriage, age of menarche, and female schooling attainment in Bangladesh. *Journal of Political Economy 116(5):* 881-930.

227 Government of Khyber Pakhtunkhwa. Annual Statistical Reports. Peshawar: Department of Elementary & Secondary Education, GoKP.

Table 21: Survival and Transition rates in government schools

Districts/Province	Survival Rate to 5th Grade (%) 2017-18			Transition rate from Class 5 to Class 6 (%) 2017-18		
	Boys	Girls	Total	Boys	Girls	Total
Swat	78	54	66	81	80	81
Khyber Pakhtunkhwa	62	42	52	87	89	87

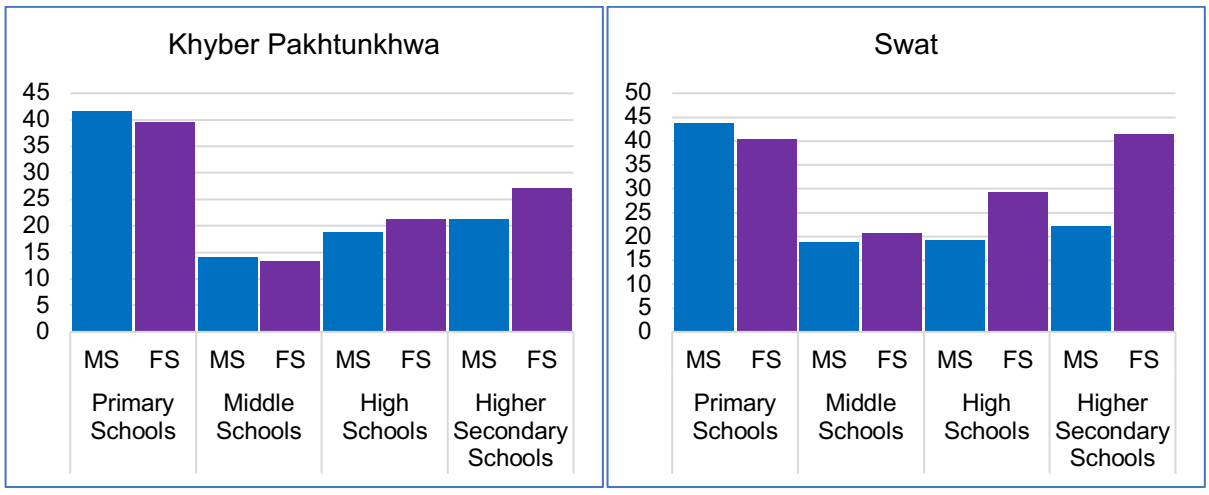
Source Government of Khyber Pakhtunkhwa. 2018. Annual Statistical Report of Government Schools 2017-18. Peshawar: Department of Elementary & Secondary Education, GoKP.

Notes: [1] For districts, the Report provides the survival rate. Survival rate for the whole province recalculated by project team based on student flow analysis of government schools provided by the Annual Statistical Report of Government Schools 2017-18.
Transition rate is obtained by dividing the number of new entrants in Class 6 by the number of pupils enrolled in Class 5. Incorrect distinction between new entrants and repeaters may explain the values above 100%. 2017-18 statistics were used since the available 2018-19 report had data anomalies: transition rates over 1000%, and even 2000%, as well as missing students across years.

285. Low survival rates pose a barrier to achieving functional literacy and numeracy among a significant population of young people. While there is some loss at the transition from primary to lower secondary (Grade 5 to Grade 6), this is not where the major loss occurs. Student flow analysis shows that the highest drop-out rate is in the first two years of the primary cycle, which indicates poor school readiness of young children, or poor quality primary education, or both. It also underscores the importance of pre-primary education and/or school readiness programs to children's education.[228]

286. The sharp decline in student enrolment between primary and secondary in Swat is also reflected in the drop in student-teacher ratio between primary and the post-primary levels (Figure 23). The student-teacher ratio in primary schools in the district have the highest ratio where one teacher is available for every 42 students collectively (i.e., boys & girls). The ratio drops considerably beyond the primary level and it is recorded as 19 for middle schools, 22 for high schools, and 27 for higher secondary schools.

Figure 23: Student-teacher ratio in public schools



Source: Government of Khyber Pakhtunkhwa. Annual Statistical Reports. 2017–2018. Peshawar: Department of Elementary & Secondary Education, GoKP.

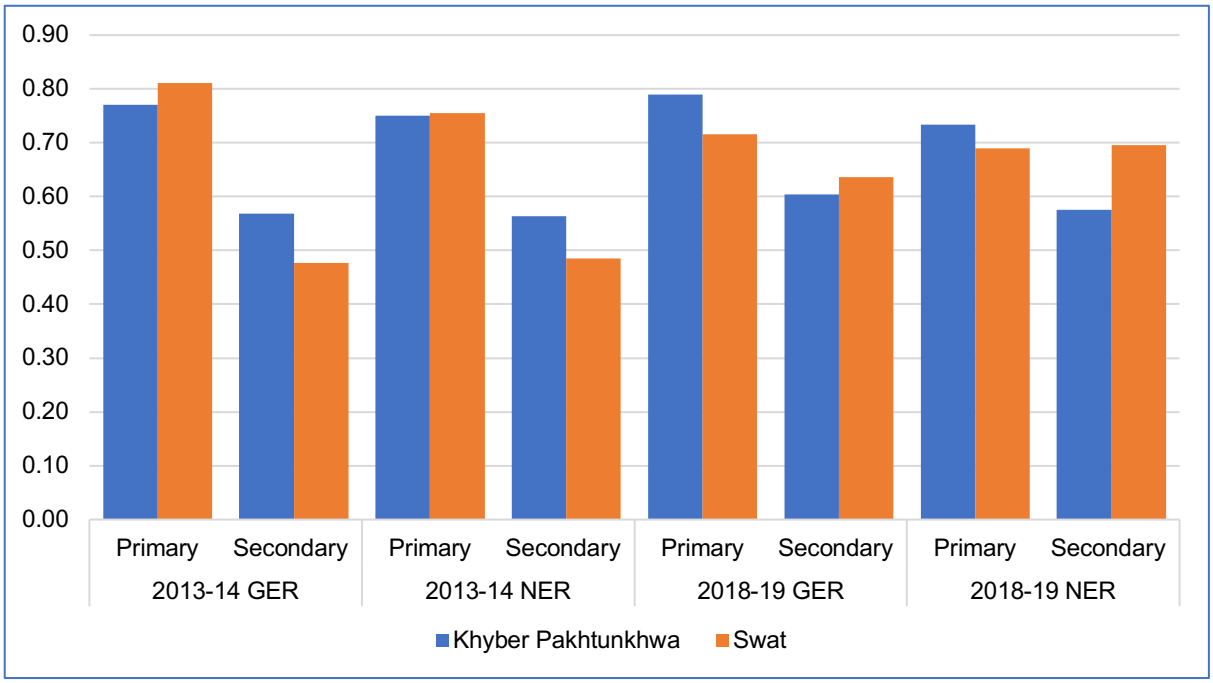
Notes: MS = Boys' schools, FS = Girls' schools.

[228] Britto, P. 2012. *School Readiness: a conceptual framework*. New York: United Nations Children's Fund (UNICEF).

These are not the same as the student-teacher ratio for boys and for girls, since the statistics for teachers are by school and not by the students they teach. Additionally, some boys' schools may have female students and some girls' schools may have male students. Accordingly, student-teacher ratios are grouped by school, and not by male/female students.

287. Education reform needs to address the wide gender gap in education at all levels (Figure 24). This needs to start by addressing the demand issue. Girls are not even enrolling in school sufficiently, and the higher dropout rate among girls exacerbates the problem. In Swat, for every 100 boys enrolled in primary schools in 2018-19, 72 girls enroll. As children move up the education system, the gender ratio drops slightly to 64 girls for every 100 boys enrolled, when calculated with GER. When calculated with NER, there are around 70 girls for every 100 boys enrolled in secondary school level. Gender parity has improved for Swat especially at secondary level since 2013-14, but nonetheless, there is still a long way to go to close the gap.

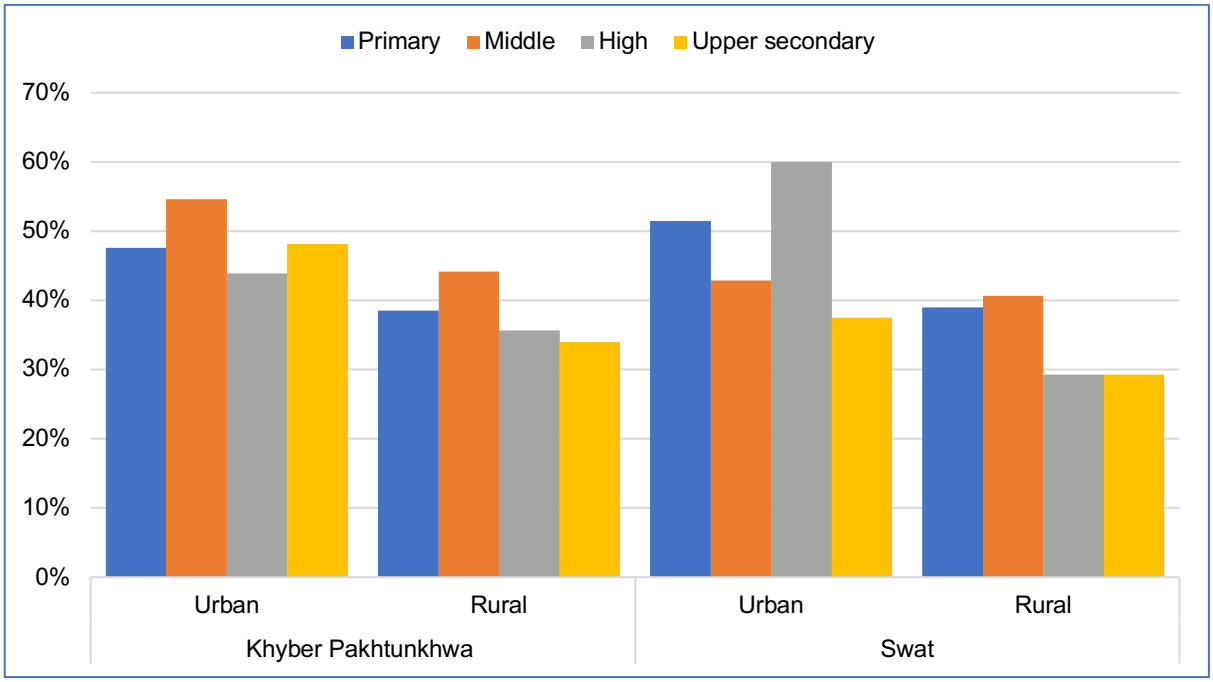
Figure 24: Gender Parity Indices, calculated with gross and net enrolment rates



Source: Government of Khyber Pakhtunkhwa. 2020. Development Statistics of Khyber Pakhtunkhwa 2019. Government of Khyber Pakhtunkhwa. Annual Statistical Reports. Peshawar: Department of Elementary & Secondary Education, GoKP.

288. The social and cultural reasons for the gender gap will need to be addressed. Some families may adhere to cultural traditions that prohibit education for women. Others – especially poor families – may require girls help with family chores and other duties. Parents may be unwilling to send their daughters to school. In many rural areas, girls' primary schools are fewer than that of boys. Therefore, the demand side has to be equally addressed, or there will not be enough female students. The share of girls' schools in the overall total of schools is much worse in rural areas; in Swat, girls' schools account for only 29 to 41% of the total number of schools (Figure 25). On the other hand, without addressing demand, there is no point in building more girls schools.

Figure 25: Share of girls' schools in total



Source: Government of Khyber Pakhtunkhwa. Annual Statistical Reports. Peshawar: Department of Elementary & Secondary Education, GoKP.

289. The poor quality of teaching-learning in schools means that the majority of youth complete schooling with inadequate skills to negotiate further pathways for work and for life. In rural districts of Khyber Pakhtunkhwa, 42% of class 5 children could not read a class 2 level story in Urdu/Pashto, although this has improved from 2016, when 55% of class 5 children could not do so. Some 45% of class 5 children could not read sentences (class 2 level) (compared to 57% in 2016) while 95% of class 3 children could not read class 2 level sentences. In arithmetic, 31% of class 5 children could not do two-digit division (as compared to 56% in 2016).[229] Good quality pre-school and primary education are necessary to prevent early age dropouts, and to prepare children for secondary education.

290. A significant proportion of teacher positions are vacant in Khyber Pakhtunkhwa. On the other hand, as shown by student-teacher ratios, declining enrolment at post-primary levels mean that there will simply be not enough students for the number of sanctioned positions. Teacher absenteeism is reportedly a problem, although rigorous data on this issue is unavailable. In ASER surveys of rural Khyber Pakhtunkhwa, 11% teachers in surveyed government schools and 14% teachers in surveyed private schools were absent.[230]

291. Technical and vocational education and training (TVET) has an important role to play. The declining enrolment and poor quality of education in the school system make it even more urgent that early school leavers have options for further development of skills. One 2017 study identified four sectors/subsector with high potential for skilled workers in Khyber Pakhtunkhwa: (i) construction, (ii) tourism and hospitality, (iii) manufacturing, especially pharmaceuticals and light engineering, and (iv) energy (micro hydel and solar). The study recognized that the training facilities for many market-oriented occupations or trades were not available in Khyber

[229] ASER, 2019. Annual Status of Education Report: ASER Pakistan 2018. National (Rural). Islamabad: ASER Pakistan Secretariat.

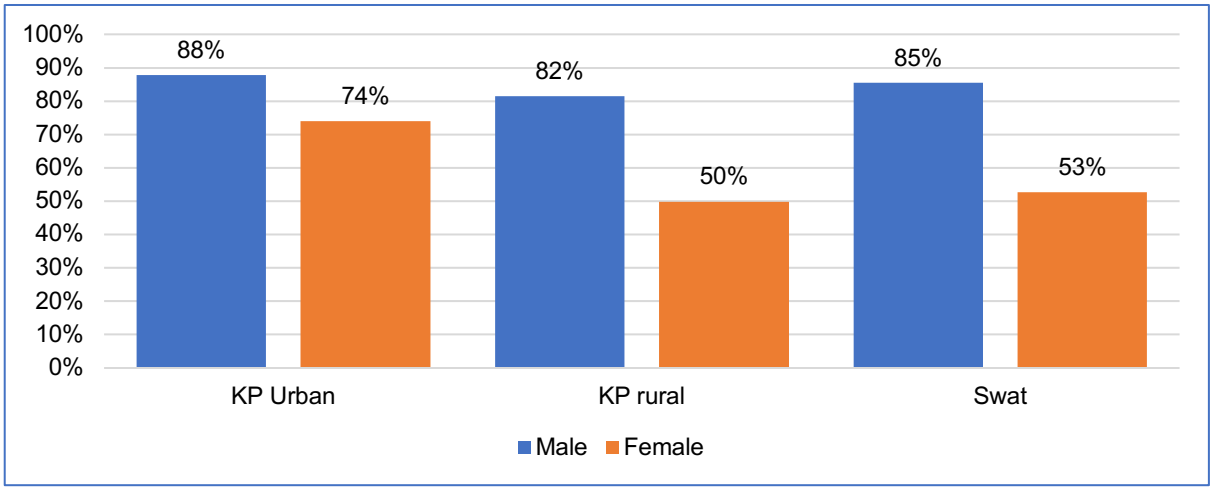
[230] ASER, 2019. Annual Status of Education Report: ASER Pakistan 2018. National (Rural). Islamabad: ASER Pakistan Secretariat.

Pakhtunkhwa. The delivery of TVET qualifications required by the potential sectors is also not available in the public and private TVET sectors. Pharmaceuticals, tourism and hospitality sectors offer some potential for skilled workers with TVET qualification of level 6 and above of Pakistan's National Vocational Qualifications Framework (NVQF). However, there is hardly any institute to provide trainings at level 5 of the NVQF. Furthermore, the business sector finds it difficult to be fully involved in producing skilled workers according to the market needs and demand, mainly because the respective chambers and sector associations do not cover the potentially important role that they should have in producing skilled workers according to labor market needs. Nonetheless, the Khyber Pakhtunkhwa Women Chamber of Commerce has managed to establish various facilities to train women in vocational trades. Constraints that prevent TVET graduates from meeting the expectations of employers include a poor quality of training, delivery modes that are top-down, multiple curricula, issuing authorities with overlapping mandates, and the absence of a quality curriculum framework.[231]

E.4.4. Implications for Regional Planning

292. The gaps that have been identified have serious implications for the regional development plans. Without addressing education, the foundation for any technical or vocational training will remain weak, and the productivity of the workforce will remain poor. Not addressing the gender gap in education risks having a generation of girls who do not realize their potential, whether as contributors to the region's development and productivity, or as mothers of the next generation of children and youth. Intergenerational inequity and poverty cannot be tackled without attention to girls' education.

Figure 26: Youth literacy rates (age 15-24 years)



Source: Bureau of Statistics Khyber Pakhtunkhwa, Planning and Development Department, Government of Khyber Pakhtunkhwa and UNICEF- Pakistan, 2018. Multiple Indicator Cluster Survey 2016-17 Key Findings Report, Bureau of Statistics, Peshawar, March 2018. (MICS 2016–2017)

Note: MICS data on male youth literacy by district was not available.

293. Literacy statistics among youth (85% for male, 53% for female) show that Swat district has a relatively low female literacy rate compared to some other districts such as Abbottabad (86.3%) and Haripur (85.9%). While literacy rates of male youth are comparable to that in the urban parts of Khyber Pakhtunkhwa, nearly half the young women in Swat are illiterate. Rural Khyber Pakhtunkhwa also have half its young women illiterate.

[231] Y., 2017. *Sector Study on Demand Driven Competency Based Training in Potential Sectors of Khyber Pakhtunkhwa.* Islamabad: GIZ.

E.5. Health

E.5.1. Health and Nutrition Outcomes

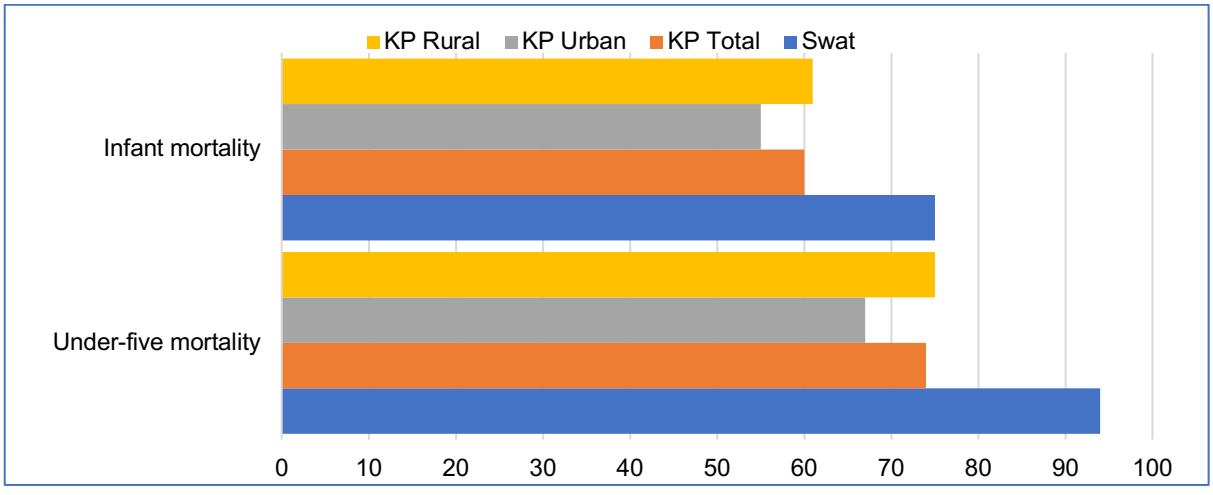
294. High young child mortality rates reflect a combination of poor maternal health, poor childcare practices, inadequate health services coverage, and poor hygiene. Poor maternal health and poor antenatal delivery and delivery care play major roles in high neonatal mortality or infant death first month within birth). Table 22 compares young child mortality rates in Khyber Pakhtunkhwa, while Figure 27 shows that child mortality in Swat district is significantly higher than the provincial average. In the two surveys (Multiple Indicator Cluster Survey 2016-17 and Pakistan Demographic & Health Survey 2017-18) infant mortality rates account for similar proportions (82% and 81%) of the deaths among under-five children in pre-merger Khyber Pakhtunkhwa. This indicates the need to prioritize neonatal causes as well as vaccine preventable diseases. Four out of five infant deaths in the first year of life in both urban and rural Khyber Pakhtunkhwa take place in the first month of life, indicating the need for better maternal and delivery care services (Table 23).

Table 22: Comparison of young childhood mortality

	FATA	Khyber Pakhtunkhwa			Swat
		Overall	Urban	Rural	
MICS 2016-2017					
Under-five mortality, per 1000 live births		74	67	75	94
Infant mortality, per 1000 live births		60	55	61	75
Pakistan DHS, 2017-2018					
Under-five mortality, per 1000 live births	33	64	41	69	
Infant mortality, per 1000 live births	29	53	36	57	
Neonatal mortality rate, per 1000 live births	18	42	29	45	

Sources: Government of Khyber Pakhtunkhwa & UNICEF. 2018. Multiple Indicator Cluster Survey 2016-17. Government of Pakistan. 2019. Pakistan Demographic & Health Survey 2017-18. Islamabad: National Institute of Population Studies and ICF, GoP.

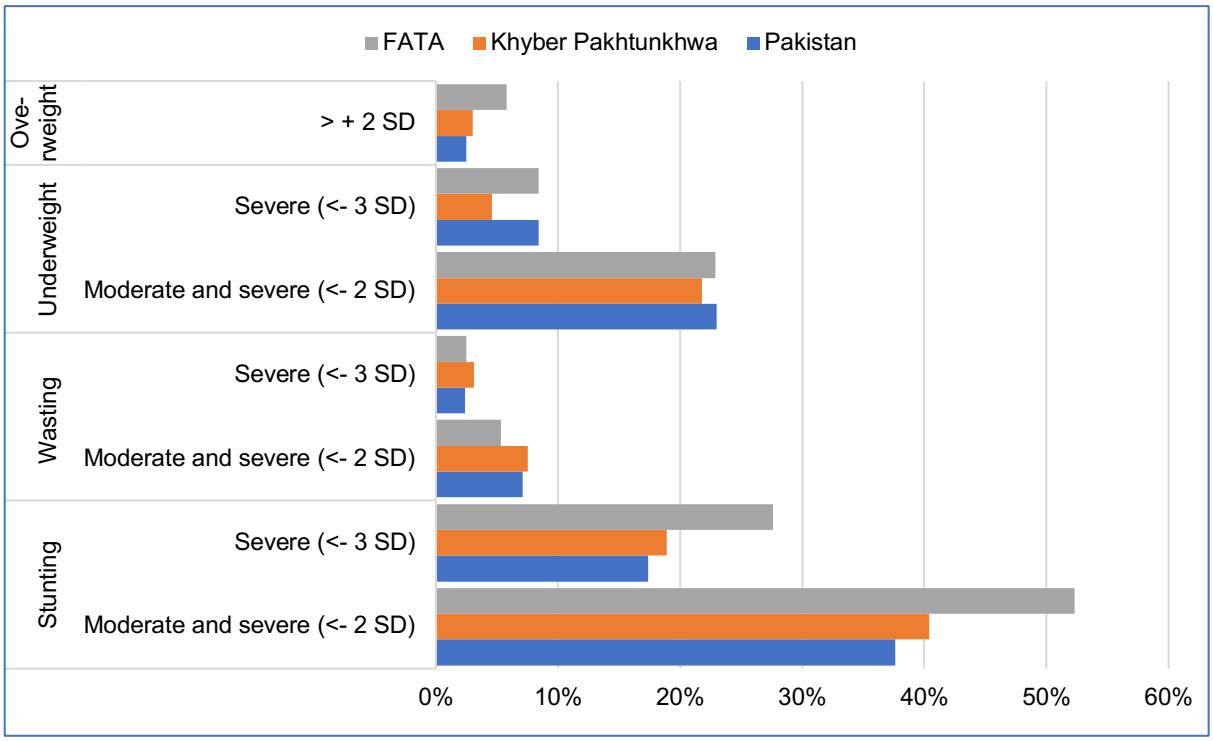
Figure 27: Early childhood mortality (per 1,000 live births): Swat district and Khyber Pakhtunkhwa



Source: Government of Khyber Pakhtunkhwa & UNICEF. 2018. Multiple Indicator Cluster Survey 2016-17.

295. Malnutrition rates among women and young children in the region are worrying (Figure 28 and Figure 29). By WHO definitions (Table 23, stunting prevalence (or chronic malnutrition) rates are “very high” or extremely worrying, especially since half of the stunted children in Khyber Pakhtunkhwa and FATA are “severely stunted.” Wasting is marginally better, being “medium” in the WHO classification.

Figure 28: Malnutrition prevalence among children under 5 years of age



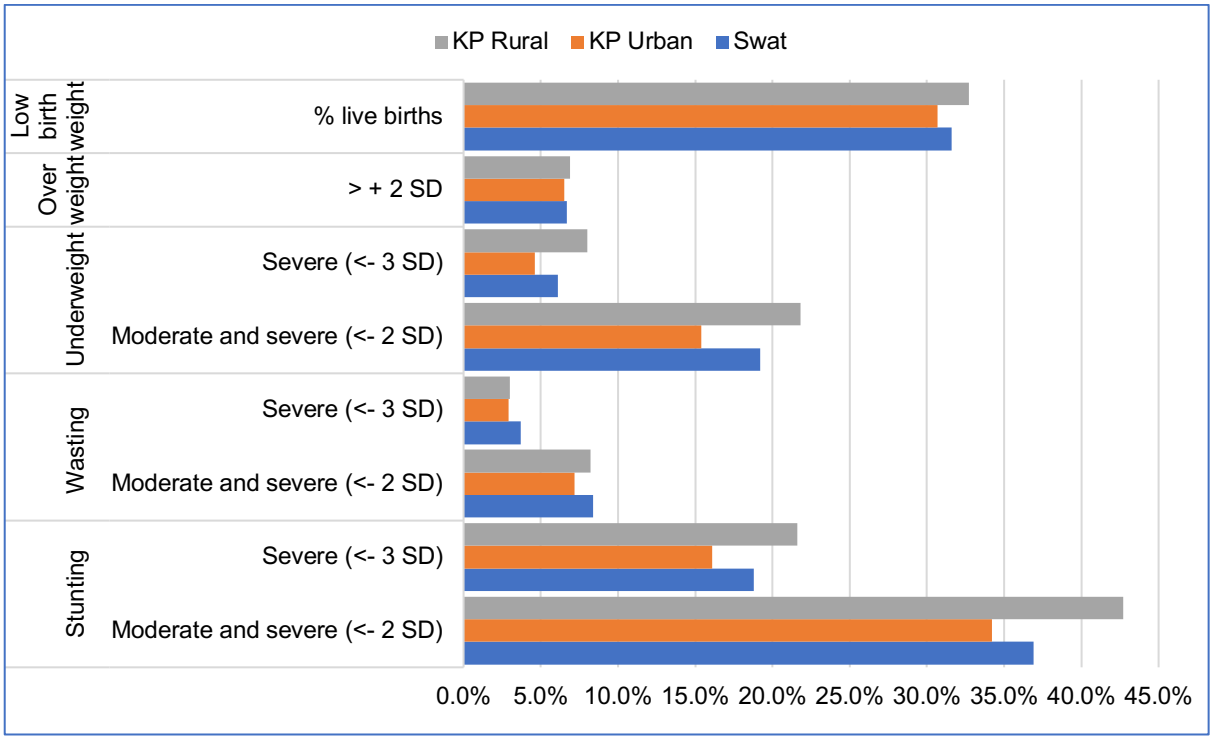
Source: Government of Pakistan. 2019. Pakistan Demographic & Health Survey 2017-18.

Table 23: Prevalence thresholds and corresponding labels for wasting, overweight and stunting in children under 5 years

Labels	Prevalence Thresholds		
	Wasting	Overweight	Stunting
Very low	<2.5	<2.5	<2.5
Low	2.5 – <5	2.5 – <5	2.5 – < 10
Medium	5 – < 10	5 – < 10	10 – < 20
High	10 – < 15	10 – < 15	20 – < 30
Very High	> 15	> 15	> 30

Source: de Onis et al., 2018. Public Health Nutrition: 22(1), 175–179
Note: ‘Novel approach’ by WHO is used to calculate these labels.

Figure 29: Malnutrition in selected districts of Khyber Pakhtunkhwa



Source: Government of Khyber Pakhtunkhwa & UNICEF, 2018. *Multiple Indicator Cluster Survey (MICS) 2016-17*.

296. Swat district shows even higher levels of stunting and low birthweight (Figure 29). This is an indication of poor maternal nutrition and poor childcare practices. Both may be linked to the low levels of education in the mother, and possibly adolescent marriage (which has been associated with undernutrition in newborns and young children). The links between stunting and maternal malnutrition are manifested in low birthweight rate among newborns. About a third (32%) of newborns in Swat suffer from low birthweight (below 2,500 grams at birth) (Figure 29). This same indicator is only 15% in developing countries worldwide.[232]

297. Young child nutrition has a proven association with intelligence quotient, increased number of years of schooling and increased productivity as an adult,[233] especially because brain development takes place before conception in the mother's womb and in the first two to three years of life.[234] Both moderate and severe stunting have serious consequences for children's brain development, future education potential and productivity.[235] High rates of stunting are linked to deficiencies throughout pregnancy and in childcare up to the second birthday. It is, therefore, essential to improve maternal nutrition, especially in the first trimester of pregnancy, as well as knowledge on childcare practices. In the Khyber Pakhtunkhwa

232 UNICEF. Low Birthweight. https://data.unicef.org/topic/nutrition/low-birthweight/. Accessed 15 August 2020.

233 Britto PR, Lye SJ, Proulx K, Yousafzai AK, Matthews SG, Vaivada T, Perez-Escamilla R, Rao N, Ip P, Fernald LCH, MacMillan H, Hanson M, Wachs TD, Yao H, Yoshikawa H, Cerezo A, Leckman JF, Bhutta ZA, Early Childhood Development Interventions Review Group, for the Lancet Early Childhood Development Series Steering Committee. 'Nurturing care: promoting early childhood development." *Lancet. 2017 Jan; 389(10064) 91-102.* doi:10.1016/s0140-6736(16)31390-3. PMID: 27717615.

234 Harvard University: Center on the Developing Child. Brain Architecture. https://developingchild.harvard.edu/science/key- concepts/brain-architecture/ Accessed 15 August 2020.

235 Black, M.M., et al., 2017. 'Early childhood development coming of age: science through the life course'. Advancing Early Childhood Development: from Science to Scale 1. Lancet Series on Early Childhood Development. *The Lancet 2017; 389*: 77–90.

context, this means improving women's nutrition and health prior to conception since most pregnant women in poor regions do not use health services until the pregnancy begins to show, usually in the second trimester. Women from poor rural communities enter pregnancy more undernourished and less healthy than their counterparts from better-off urban communities. Wasting, on the other hand, indicates acute weight loss, the result of insufficient food intake or repeated infectious diseases, especially diarrhea. Wasting impairs the functioning of the immune system and can lead to an increased risk for death.[236]

E.5.2. Services

298. The poor health and nutrition outcomes in Swat and the province may be attributed to a combination of low service coverage, poor quality of health care, and low use of health services among the population. The last is linked to the education levels of household heads and mothers. These are shown in the following indicators (Figure 30 and Figure 31):

i. At the time of childbirth, health service coverage is able to reach about four-fifths of pregnant women in Khyber Pakhtunkhwa. This is shown by the coverage of the BCG vaccination against tuberculosis, which is relatively high (72% in the 2016-17 survey and 81% in the 2017-18 survey).

ii. Families do not consider subsequent vaccinations to be such a priority, and need to be educated on the different timings and characteristics of childhood vaccines. The drop between BCG and the third dose of DPT3-HepB-HiB vaccine shows a falling off in coverage.

iii. Overall, Swat has a higher coverage by some health interventions such as vaccination compared to the provincial average. However, it has worse nutrition outcomes, likely due to poor maternal nutrition and low level of education in the mother.

299. There is a need for better education of pregnant women by health workers on the importance of having at least four visits and of delivery in a health facility. Antenatal care coverage (ANC) indicates not only the reach of maternal health services, but also to what extent the woman is educated and able to make the decision for herself. The first visit indicates a reasonably high coverage of pregnant women (83% in Swat). However, the visits drop as the pregnancy continues.

300. The quality of maternal health care is inadequate. This is shown by the proportion of pregnant women who received antenatal services of acceptable quality (71% in Swat, 56% in Khyber Pakhtunkhwa). These pregnant women had their blood pressure measured, and urine and blood sample taken. These tests are recommended by WHO for ANC of acceptable quality.[237] The proportion is more in urban areas (76%) but nonetheless it still means that one of four pregnant women are not receiving the tests that they should.[238]

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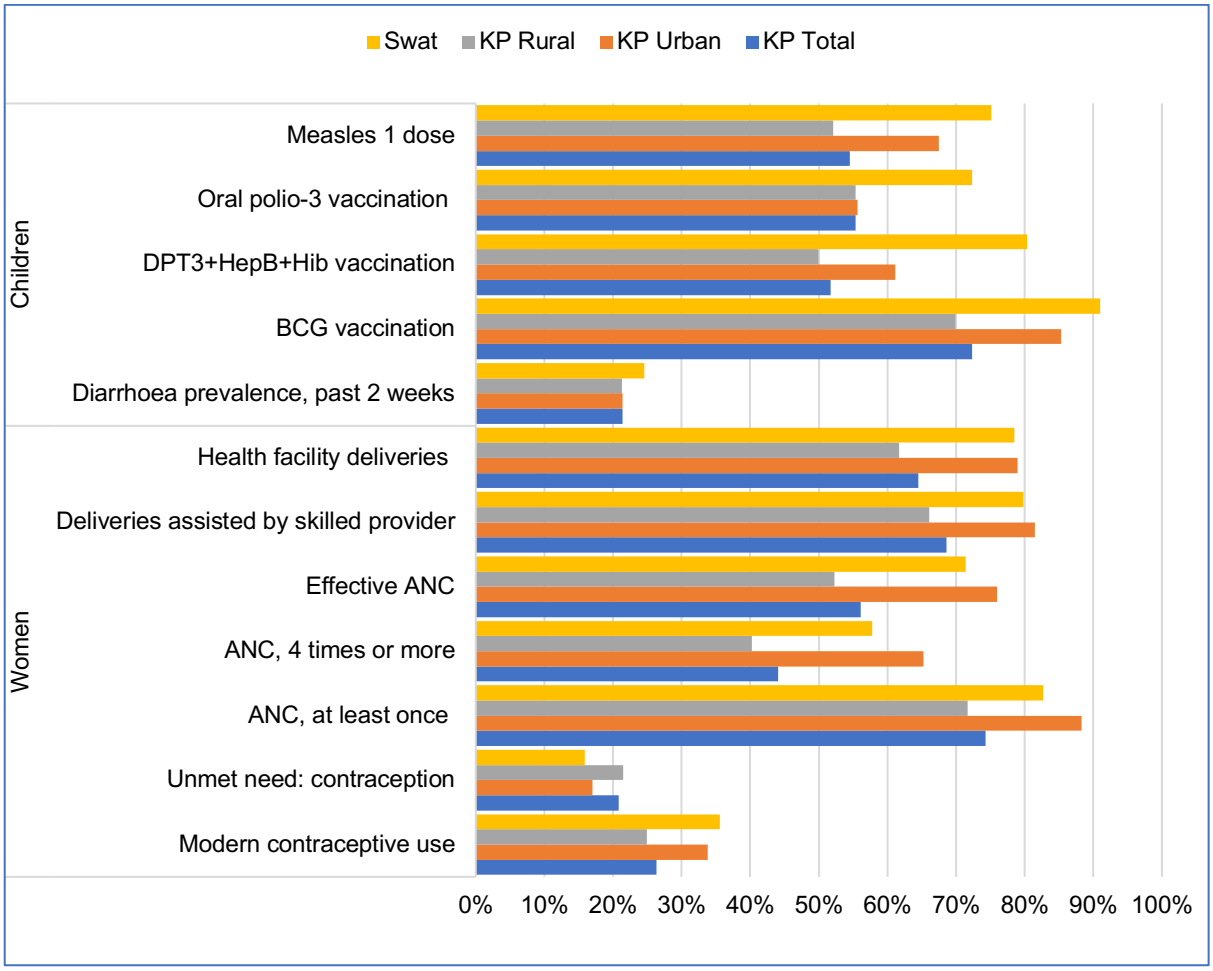
[236] World Health Organization. Stunting, wasting, overweight and underweight. Available from: https://apps.who.int/nutrition/landscape/help.aspx?menu=0&helpid=391&lang=EN Accessed 15 August 2020.

[237] WHO guidelines are specific on the content on antenatal care visits, which include: (i) blood pressure measurement; (ii) urine testing for bacteriuria and proteinuria; (iii) blood testing to detect syphilis and severe anaemia. (iv) weight and height measurement (optional).

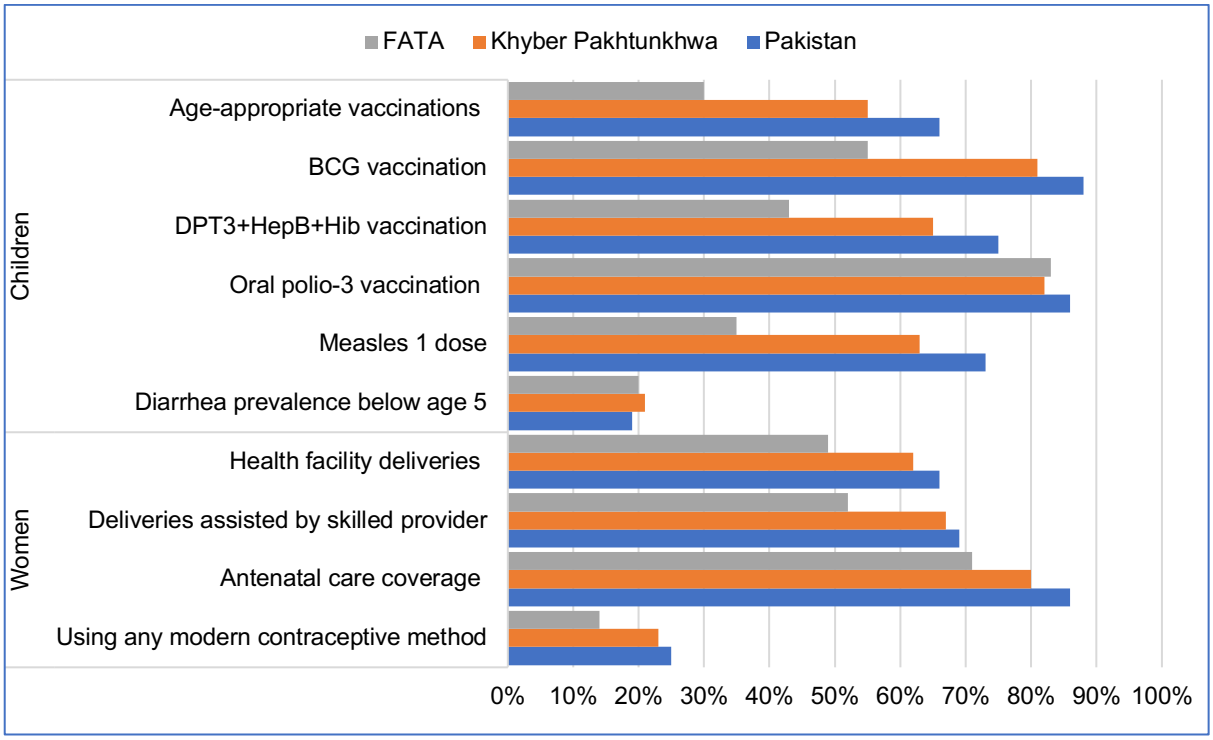
[238] Government of Khyber Pakhtunkhwa & UNICEF. 2018. Multiple Indicator Cluster Survey 2016-17.

Figure 30: Health services coverage and use: Khyber Pakhtunkhwa and Swat district



Source: Government of Khyber Pakhtunkhwa & UNICEF. 2018. Multiple Indicator Cluster Survey 2016-17.
Note: Effective antenatal care means a minimum of three tests recommended by the World Health Organization guidelines: (i) blood pressure measurement; (ii) urine testing; (iii) blood testing.

Figure 31: Health services coverage and use — comparison with national level



Source; Government of Pakistan. 2019. Pakistan Demographic & Health Survey 2017-18. Islamabad: National Institute of Population Studies and ICF, GoP.

E.5.3. Policy Framework and Key Health Reforms

301. Health administration was devolved to the provinces in 2010. The process started reforms to strengthen the health system specific to Khyber Pakhtunkhwa. Within the health administrative systems, the mother and child health centers, rural health centers (RHCs), basic health units (BHUs), social welfare, population welfare, public health engineering, and public health hospitals were devolved to the districts. Tertiary and teaching hospitals are under the purview of the province. Together with this administrative decentralization, the devolution of financial power allows the local governments to reallocate their assigned budget to areas of their choice to address emerging issues within their jurisdiction more flexibly and effectively. However, with the 2019 Amendment of the 2013 Local Government Act, the authority given to local governments has been revoked.

302. In Khyber Pakhtunkhwa, the government remains the main provider of preventive care throughout the province and the major provider of curative services in rural areas. There are many private clinics, hospitals, maternity centers and private practitioners for which statistics are not available.

303. Health policies are being updated to align medium-term planning, and budgetary framework within an overall sector strategy. The health policy framework in Khyber Pakhtunkhwa is formed by the Khyber Pakhtunkhwa Health Sector Strategy (HSS) 2010–2017[239] and the National Health Vision 2016–2025. The provincial HSS 2010–2017 has been extended for updates. The current HSS defines five outcomes to be achieved in alignment with the Khyber Pakhtunkhwa Comprehensive Development Strategy 2010–2017: (i) enhanced coverage of and access to essential health services, especially for the poor and

[239] A new Health Sector Strategy for Khyber Pakhtunkhwa is being prepared.

vulnerable; (ii) reduced morbidity and morbidity due to common diseases especially among vulnerable segments of the population; (iii) improved human resources management; (iv) improved governance and accountability. (v) improved regulation and quality assurance.

304. Since 2011, Khyber Pakhtunkhwa has passed more than 23 ordinances/acts and amendments on health care to introduce new dimensions or update the existing laws. Among these are (i) Khyber Pakhtunkhwa Health Care Commission (HCC) Act, 2015, to regulate health care through sound technical knowledge; (ii) the Khyber Pakhtunkhwa Public Health (Surveillance and Response) Ordinance, 2017, to prevent and control diseases; (iii) the Khyber Pakhtunkhwa Medical Teaching Institutions Reforms Act, 2015, which seeks to provide autonomy to the government-owned medical teaching institutions and affiliated teaching hospitals to improve performance and quality. (iv) Khyber Pakhtunkhwa Public Health Forecasting and Supply Chain Strategy 2017–2022, to ensure uninterrupted supply of health commodities. The Khyber Pakhtunkhwa Health Roadmap, launched in 2016, emphasizes targeted interventions in critical domains within the health sector. The province has set up a contract management unit to encourage promote public–private partnerships (PPPs) in health. A health sector reform unit was established in 2014 to coordinate the reforms and ensure the quality of reforms and relevance to the challenges faced by the province.[240] Human resources for health have been expanded through better incentives. The district health information system (DHIS) has been strengthened, and its quarterly reports are more regularly utilized to inform evidence-based decision-making.[241]

305. Many challenges to health sector reform and health system strengthening in Khyber Pakhtunkhwa are rooted in suboptimal governance. These include (i) a lack of clarity in roles and responsibilities; (ii) inadequate managerial and technical capacity at the different levels of government, (iii) fragmentation of existing health regulations[242] and a lack of capacity to systematically enforce regulations; (iv) gaps in regulations — for example, the private sector in health remains mostly unregulated, although mapping and quality monitoring by the Khyber Pakhtunkhwa Health Care Commission (HCC) has been initiated, together with the accreditation of the private sector providers.

306. Against this context, the Khyber Pakhtunkhwa Regional and District Health Authorities Act, 2019 (“the 2019 Health Act”), provides a new framework for the devolution of health authority and accountability at the regional and district level. There are three tiers set out by the 2019 Health Act: (i) at provincial level, the Health Policy Board[243] includes divisional representation, (ii) at division level, Regional Health Authorities (RHA) are established: (iii) at district level, the District Health Authorities (DHA) act as the implementing arm of the RHA.

307. The RHAs[244] are responsible for oversight of health facilities, the allocation of funds to health facilities in its region, the approval of the annual business plan for the Division, and the creation and abolition of posts. RHAs are also responsible for reporting of progress of health indicators, and reporting on disease surveillance, epidemic control and disaster management

240 Asian Development Bank, 2019. *Khyber Pakhtunkhwa Health Sector Review: Hospital Care.* Manila.

241 Asian Development Bank, 2019. *Khyber Pakhtunkhwa Health Sector Review: Hospital Care.* Manila.

242 For example, 12 different regulations govern drug production, distribution, and use in the province.

243 The Board comprises: the provincial Minister of Health, the provincial Secretary for Health, and Chairpersons of all Regional Health Authorities from the Division level.

244 Each Regional Health Authority comprises: two doctors, a senior nurse and two eminent persons from any of the fields of law, finance, economics or management, or retired government servants, educationalists, civil society, businessmen or renowned philanthropists.

to the government. The RHA can establish or upgrade health facilities in the district either on its own or on the recommendation of a DHA.

308. The DHAs are responsible for management and supervision of health facilities in each district. The DHA submits its required budget to the RHA for approval. The DHA ensures achievement of targets against performance indicators laid down by the RHA, reports to the RHA on the district's progress on health indicators, and issues relating to disease surveillance, epidemic control and disaster management. The DHA is headed by a Chief Executive Officer and a doctor, a nurse, and three eminent professionals from other sectors (law, finance, economics or management), or retired government servants, educationalists, civil society, businessmen or philanthropists.

309. Overall, the Health Act 2019 could be an improvement, especially in the context of inadequate capacities among tehsil local governments, and the need to centralize health norms and health information — for example, as in the case of infectious disease outbreaks and disease surveillance. Given the skeletal nature of the health teams at division and district levels, the RHA Chairperson and the District Chief Executive Officer are clearly meant to work closely with health facilities at each tier of government. One of the keys to making the Health Act 2019 work will be effective and efficient monitoring and surveillance backed up by good health management information systems extending from VC/NC level through tehsil to district, division and province level.

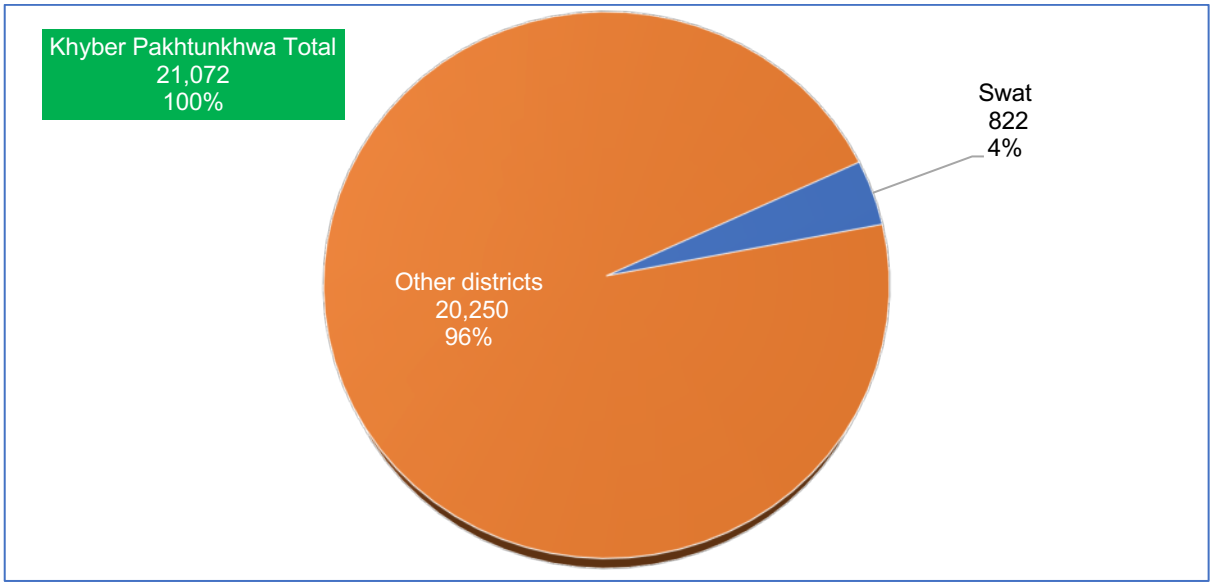
E.5.4. Health Infrastructure and Human Resources

310. Health staff density and hospital bed density (public and private) are indicators for the availability of inpatient services. Swat district accounts for 4% of beds in the province (Figure 32). WHO has not defined any global norm for the density of hospital beds in relation to total population. In 2018, the province as a whole had 5.8 beds per 10,000 population. In the same year, Pakistan reported having 6.3 beds per 10,000 population to the World Health Organization)[245] (Figure 33).[246]

[245] World Health Organization. Global Health Observatory. https://www.who.int/data/gho/data/indicators/indicator-details/GHO/hospital-beds-(per-10-000-population) Accessed 15 August 2020.

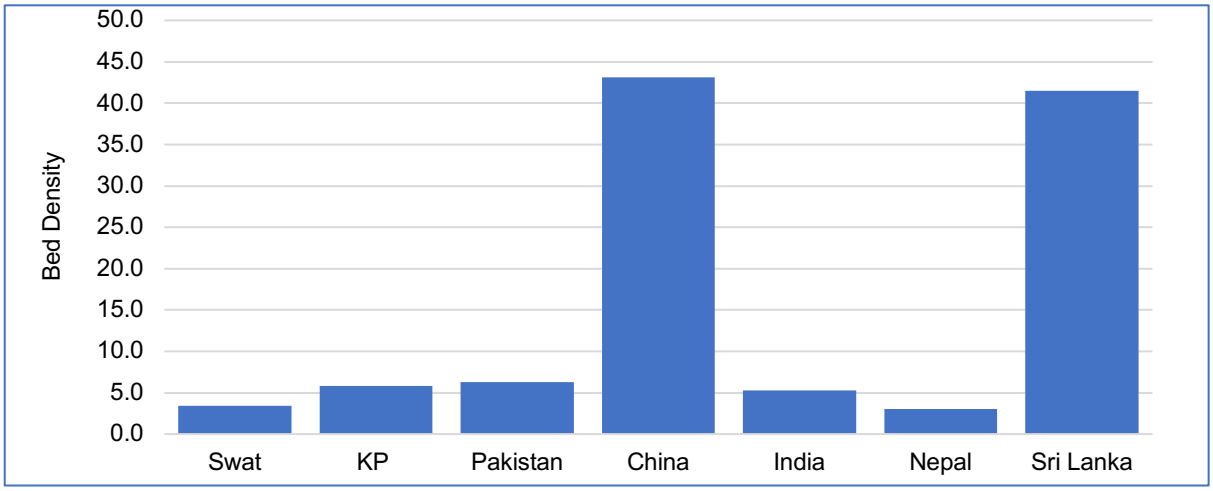
[246] Government of Khyber Pakhtunkhwa Annual Development Statistics 2019.

Figure 32: Public and private hospital beds (2018)



Source: Government of Khyber Pakhtunkhwa. 2020. Development Statistics of Khyber Pakhtunkhwa 2019.

Figure 33: Public and private hospital bed density per 10,000 population (2017-18)

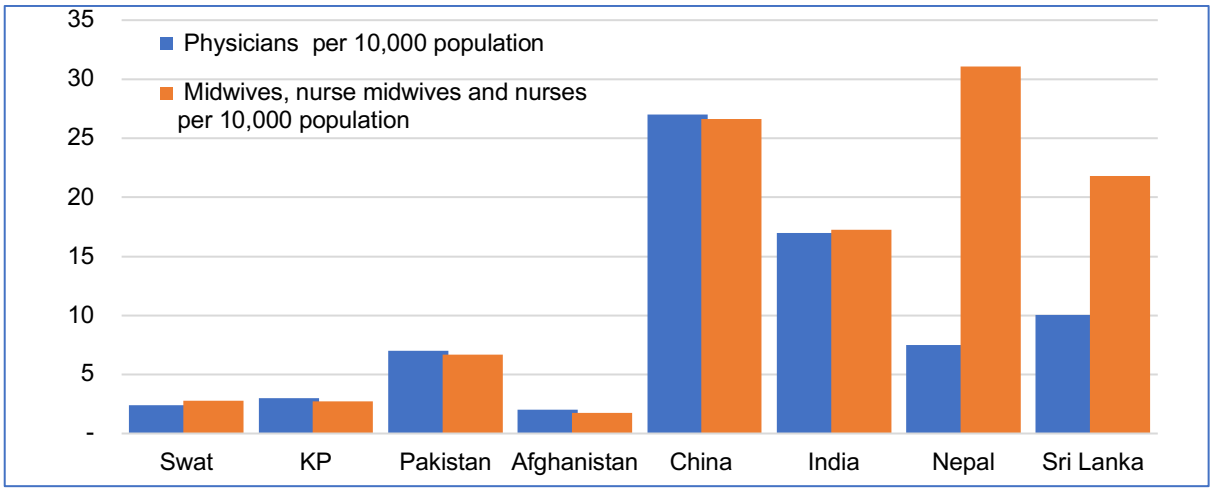


Source: Government of Khyber Pakhtunkhwa. 2020. Development Statistics of Khyber Pakhtunkhwa 2019. https://www.who.int/data/gho/data/indicators/indicator-details/GHO/hospital-beds-(per-10-000-population).

311. Khyber Pakhtunkhwa is affected by inadequate health personnel. Deployment and recruitment of health staff (especially physicians and nurses) are crucial for adequate health services. In this regard, Khyber Pakhtunkhwa has only 3 physicians[247] (both private and public) per 10,000 population, and 2.7 nurses and midwives per 10,000 population. Swat has even less: 2.4 physicians and 2.8 nurses and midwives per 10,000 population (Figure 34).

[247] Physicians include generalists and specialist medical practitioners.

Figure 34: Public and private sector physicians and paramedics per 10,000 population; KP 2018 and selected countries (2017–2018)



Sources: Government of Khyber Pakhtunkhwa. 2020. Development Statistics of Khyber Pakhtunkhwa 2019. World Health Organization, 2018. Global Health Workforce Statistics. Geneva.

312. The private sector in health needs to be better regulated and integrated into the health information system. Information on private sector practitioners is largely unavailable, and the personnel–population ratio needs to take this information into account. The private sector is made up of a range of providers from reputable hospitals to unregistered operators.

E.5.5. Health Protection

313. The government's Social Health Protection Initiative (SHPI), called the Sehat Sahulat Program (SSP) is a major step towards Universal Health Coverage (UHC) in the province. UHC is a core requirement for Sustainable Development Goal (SDG) 3. In 2016,[248] the government of Khyber Pakhtunkhwa launched the flagship SSP, which aims to improve access to healthcare for the poorest population. The SHPI started in four districts with the financial support of the German government through KfW and its own financial resources. The provincial government is scaling up the SHPI to cover an estimated 69% of the poorest population in the province.[249] SHPI is reported by media to be operational in 75% of Khyber Pakhtunkhwa's 35 districts.[250] It mobilizes the annual budget required (about PRs 3.8 billion or $32.9 million) to cover administrative costs and subsidize the premiums of 2.49 million households (approximately two million individuals in 2018).[251] The SHPI provides the population below the poverty with significant financial coverage, and province-wide accessibility to secondary and tertiary treatment facilities, including inpatient services.

314. The initiative employs a "Fund Retention Formula" which enables public hospitals in the province to retain a certain percentage of income generated from their treatments. The retained amount is then divided into two portions: 25 percent is transferred to the provincial government, and the remaining 75 percent of the amount is retained with the hospital for service quality improvement, and doctors' share. The SHPI is managed through the State Life

248 Hussain, H. Understanding Pakistan's efforts to align quality healthcare with Sustainable Development Goals. Available from: https://blogs.lse.ac.uk/southasia/2019/10/28/understanding-pakistans-efforts-to-align-quality-healthcare-with-sustainable-development-goals/ Accessed 10 July 2020.

249 Asian Development Bank, 2019. *Khyber Pakhtunkhwa Health Sector Review: Hospital Care.* Manila.

250 Is Universal Health Coverage Finally Gaining a Foothold in Pakistan? https://thediplomat.com/2019/08/is-universal-health-coverage-finally-gaining-a-foothold-in-pakistan/. Accessed 15 August 2020.

251 Asian Development Bank, 2019. *Khyber Pakhtunkhwa Health Sector Review: Hospital Care.* Manila.

insurance Corporation of Pakistan. With expansion of the SHPI, both public and private providers are being enrolled into the program through contracts.

E.5.6. Implications for Regional Planning

315. Much more effort is needed to expand coverage and quality of basic health services in Khyber Pakhtunkhwa (including the areas merged from FATA). The following components need to be prioritized:

i. **Health infrastructure:** Quantitative targets in terms of infrastructure, beds and human resources should be set in relation to the growing population. An actuarial analysis by the ADB[252] has shown that the Government of Khyber Pakhtunkhwa and the private sector need to invest in the health care infrastructure to assure continuous supply-side readiness, especially with the expansion of SHPI, which will increase demand.

ii. **The quality of health services** also needs to improve through development of quality assurance systems and enforcement of appropriate regulations. Standard operating procedures need to be developed where there are gaps, such as in secondary and tertiary health care.[253]

iii. **Human resources for health reform:** Continuous professional development of the knowledge and skills of all medical, paramedical, technical, and administrative staff needs to take place through training and other capacity-building measures. Such professional development could be offered as an additional incentive for retaining and attracting health staff for remote or rural locations.

iv. **Health sector devolution and governance, as set out in the Health Act 2019** will need to be supported by an effective health management information system and strengthened coordination at local government level, including through joint planning, budgeting, identification of bottlenecks, and establishment of appropriate supervision structures and processes.

v. **Consolidating social protection schemes[254] and other schemes into the SHPI** will increase revenues, reduce fragmentation and strengthen the purchasing power of SHPI. The Khyber Pakhtunkhwa government needs to improve the capacity of both government and private health care providers, in order to work with health insurers.

316. At the same time, health authorities need to intensify preventive health education efforts, to address behavioral- and cultural issues. Maternal and child malnutrition are not necessarily linked to the lack of food – rather, malnutrition is linked to insufficient nutrient value in food intake and/or infectious disease episodes, which are linked to poor hygiene. This means that improving health, nutrition and hygiene knowledge of families — especially mothers — remains a priority.

252 Asian Development Bank, 2019. *Khyber Pakhtunkhwa Health Sector Review: Hospital Care.* Manila.

253 Asian Development Bank, 2019. *Khyber Pakhtunkhwa Health Sector Review: Hospital Care.* Manila.

254 Social protection schemes include, for Khyber Pakhtunkhwa, the Employees Social Security Institution, Zakat, Bait-ul-Mal, etc.

E.6. Employment

317. With agriculture creating only 21% of Gross Domestic Product (GDP) in KP (GoKP 2014), cities are the main creators of economic wealth. Most industries and businesses are located in or within immediate vicinity of urban areas resulting in more employment opportunities. This is an important reason that cities attract large parts of a country's job-seeking population.

318. More than two thirds of KP's population live within 1 hour travel time from an urban center.[255] The Peshawar region covers the most urbanized areas of KP province. It is perceived to provide employment opportunities in many sectors and attracts skilled and unskilled labor from the adjoining tribal districts and southern districts of KP. The reality is, however, that urban unemployment is as at least as high as unemployment is in rural areas. Particularly urban women form a significant resource that could spur income, consumption, and economic growth if engaged in economic activities.

Table 24: Unemployment rates in Pakistan and KP, 2017-18

	Pakistan		Khyber Pakhtunkhwa	
	Urban	Rural	Urban	Rural
Male	5.6	4.7	6.9	6.8
Female	17.5	5.9	18.8	7.5
All	7.2	5	8.3	6.9

Source: PBS Labor Force Survey 2017-18.

319. Sectoral employment levels at District level have not been updated since the 1998 Census. The job market will have changed but it is not currently known which shifts have occurred.

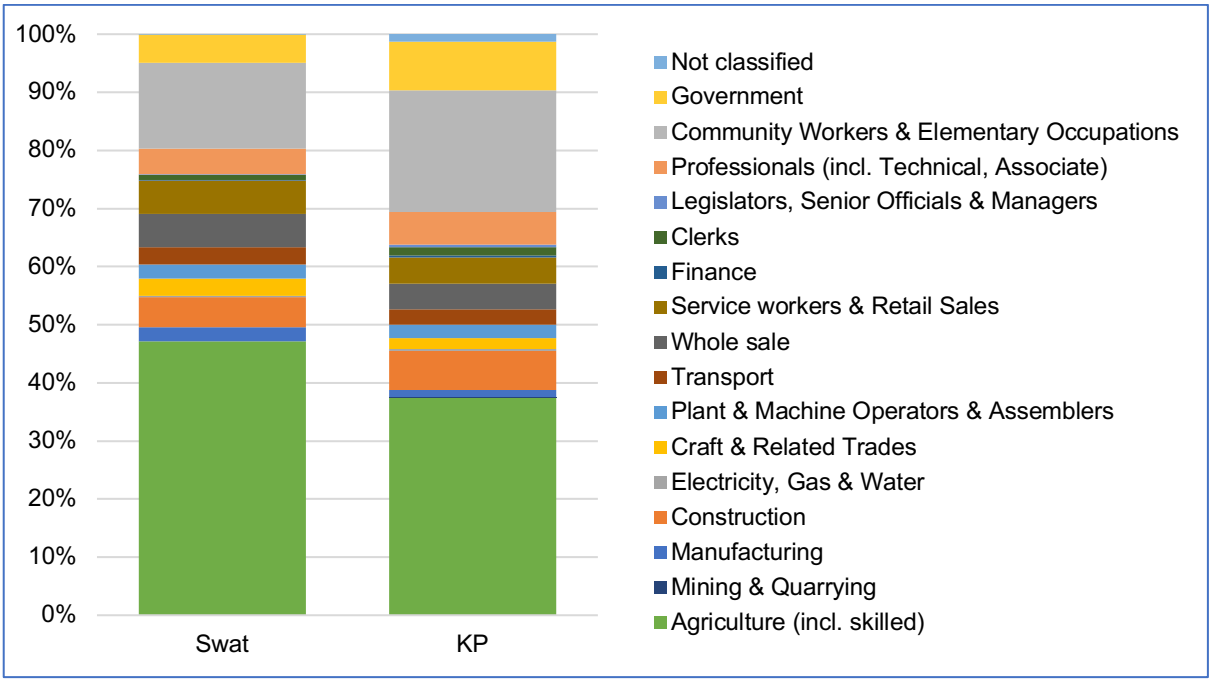
320. Agriculture employed 47% of residents in Swat, the largest sector by far. However, farmland divisions following inheritance create a growing number of farms that are too small to require full working days, leading to underemployment. Furthermore, small farms tend to rely on (unpaid) family labor. Large farms rely on a mix of permanently hired labor (typically for domestic activities and farm management) and casual hired labor (land preparation).[256]

321. The second-largest share of employment in Swat (14.8%) consisted of community workers and elementary occupations. The government employed approximately 7.5% of the population. Wholesale together with retail services and sales each provided between 5.5% and 6% of jobs. Construction provided just over 5% of employment in Swat, whereas professionals and technical associates constituted 5.6% of workers.

[255] Government of Khyber Pakhtunkhwa, 2014. Integrated Development Strategy 2014-2018.

[256] GoKP. 2020. Peshawar Land Use Plan (Draft). Peshawar: Urban Policy Unit, P&D Department, Government of Khyber Pakhtunkhwa.

Figure 35: Sector share in employment per district (1998)



Source: Government of Khyber Pakhtunkhwa. 2020. Development Statistics of Khyber Pakhtunkhwa 2019.

322. Mining and quarrying provided almost no (official) jobs in KP in 1998 but was estimated to employ approximately 30,000 workers nationally in 2015.[257] Finance jobs almost did not exist outside Peshawar City, which itself only had 1.2% of jobs in financial services. Manufacturing only provided around 2.5% of positions and Transport around 3%.

323. These percentages suggest that Swat does not have a diverse economic base from which to grow. However, the industrial activity that exists in Swat is active in exports such as rice and in high-value rubber and plastics.

324. Currently, 39% of the rural population lives below the poverty line and many more live just above it (GoKP 2014). Urban dwellers, however, seem not much better off and also use at least 90% of their income for consumption. Only households in the highest 20% of income can save over 10% of their income. In KP, urban residents are able to save a few percentage points more than the national average but rural dwellers in KP are significantly worse off. Across the board, they spend more on consumption and may even spend more than their income. This can put households on track for financial ruin as debt begets more debt. So not only are large numbers of jobs needed, they are ideally also jobs with high value added.

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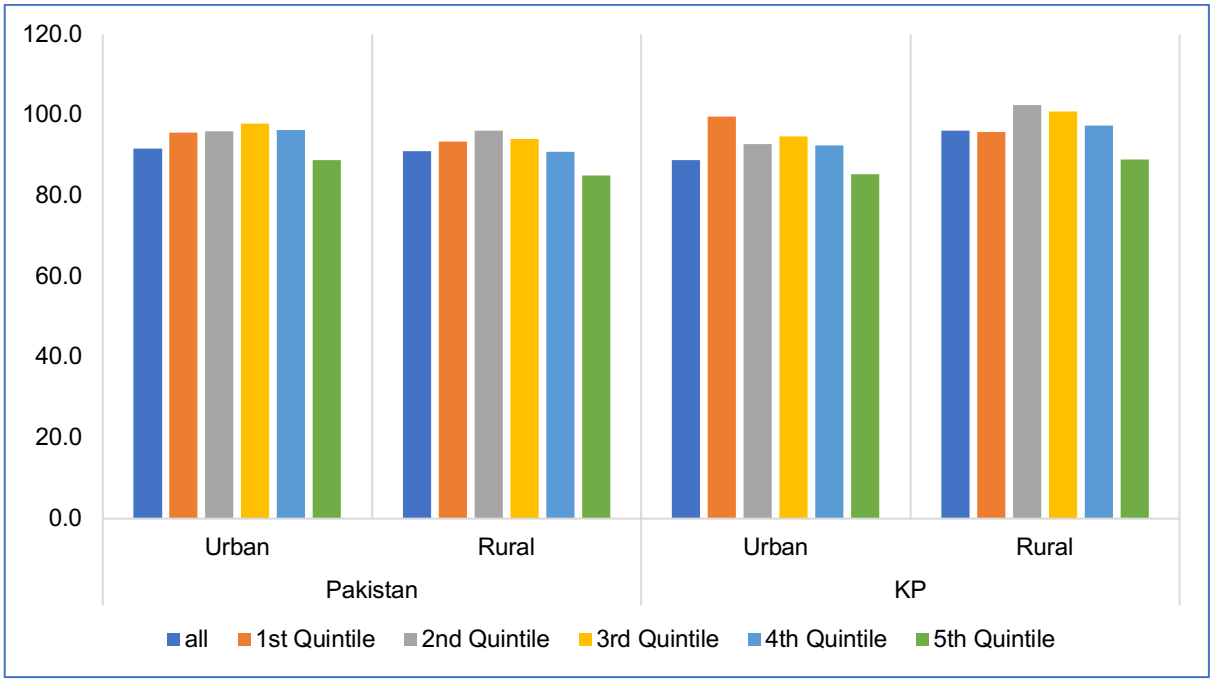
[257] Maqbool A R. 2015. Drags in marble industry's growth. https://www.dawn.com/news/1192524.

[258] Government of Khyber Pakhtunkhwa, 2014. Integrated Development Strategy 2014-2018.

Figure 36: Share of income for consumption per income group (2015-16)



Source: PBS Household Integrated Economic Survey 2015-16

326. Nationally as in KP, urban wages are higher than for similar jobs in rural areas. In many sectors, however, wages in KP tend to exceed the national average in both urban and rural contexts. High-paying sectors are in mining, the power sector, as well as ICT and high-skilled professional and community and social services. Nationally (the data for KP seem affected by outliers), women reportedly get paid significantly (as much as 80%) less than men. The exceptions to this are the power, ICT, and professional service sectors where women report to earn close to or more than men do.

Table 25: Average monthly income per sector (PKR) 2015-16

Sectors	Pakistan		KP	
	Urban	Rural	Urban	Rural
Agriculture, Fishing & Forestry	11,189	5,859	8,572	4,295
Mining & Quarrying	28,636	15,560	34,143	0
Manufacturing	15,661	8,973	18,103	12,691
Electricity, Gas & Water Supply	29,981	19,610	60,493	20,324
Construction	14,567	10,535	14,718	11,754
Wholesale & Retail	18,489	13,486	20,904	15,434
Transport & Storage	16,844	12,101	17,806	14,442
Information & Communication	38,205	20,276	38,431	30,531
Finance, Real estate etc.	34,574	28,730	29,484	28,479
Community, Social, Personal Services	19,797	14,511	25,075	20,533

Source: PBS Household Integrated Economic Survey 2015-16.

327. The war on terror in Afghanistan (September 2011) spread across the border into the neighboring northwest Pakistan and caused disruption in the settled and former Federally Administered Tribal Areas (FATA) areas of Khyber Pakhtunkhwa (KP), including the Swat

district. The militant insurgency took hold because of similarities in geography, language and culture.[259]

328. The Pakistani government tried to prevent militant activities through dialogue with the Taliban, but this proved to be unsuccessful, and a military operation, Rah-e-Rast, was launched in early 2009 against Tehrik-i-Taliban Pakistan (TTP). Though the operation was seen as well-intentioned, it caused massive internal migration from embattled areas, with an estimated 2 million people becoming internally displaced and considerable damage was done to the physical and social infrastructure. After combating the Taliban, the army regained control of Swat district and it was handed over to the local district administration.[260]

329. This population influx has altered the demographic character of the entire city and also placed further pressure on an already stretched social and economic infrastructure, the city's environment, as well as the security condition of its inhabitants.

330. Economic activities of the men in slum areas include all types of professions. The largest percentage 33% comprised unskilled daily wage earners, followed by 27% service providers (dyers, mechanics, etc.), 9% were artisans (carpenter, furniture maker, polish work, etc.). About 9% were construction workers (masons, electricians, etc.). About 15% were shopkeepers or vendors and 5% were highly skilled salaried persons including doctors and teachers. About 4% of boys and 3% of girls under 15 years of age were working for wages in these areas.

331. The employment status of the slum household was very low as 1.71 persons per household were employed though the wages were low. The average household income was PRs 18,718. The household size was large in range of 8 to 11 persons per household. The study found that 35% of the households were extremely poor and 31% of the households were poor. Only 40% of the population in slum areas comprised non-poor.

332. In addition, a large cohort of youngsters is about to enter the work force: 44% of the population in KP is under 15.[261] To bring down the relatively high unemployment in KP's cities, the number of employment opportunities needs to grow to avoid widespread poverty and its associated social problems.

E.7. Poverty and Land Issues

333. There are no recent data on poverty for the region or province, as defined by household consumption and expenditure. Pakistan's national poverty line was defined on the food energy intake of 2,300 calories per adult equivalent per day. The cost of basic needs in this regard was calculated as Rs. 3,030.32 per adult per month in 2013-14. According to this (monetary) poverty line, some 29.5% of the population were below the national poverty line in Pakistan (35.6% in rural areas and 18.2% in urban areas) in 2013-14.[262] The Pakistan Economic Survey 2017-18 indicated that 24.3% of the population were below the national poverty line in 2015-16; however, this figure was based on committee estimates instead of any statistical data.[263] No estimated cost of basic needs was given and there were no provincial and district level

[259] District Swat: Socioeconomic Baseline and Displacement Impact, Center for Public Research.

[260] Preliminary Damage and Needs Assessment , World Bank and the Asian Development Bank [5] Interview with Police Official Swat.

[261] PBS Household Integrated Economic Survey 2015-16.

[262] UNDP, Multidimensional Poverty in Pakistan.

[263] Government of Pakistan, Pakistan Economic Survey 2017-18. Finance Division, Islamabad, Page 245.

data on poverty. The 2018-19 economic survey has an extended chapter on social protection, but there was no chapter on poverty – which had been a regular feature of previous economic surveys.

334. Other measures of poverty take into account the multidimensional concept of poverty. The United Nations Development Program provides the Multidimensional Poverty Index (MPI), measured in three dimensions: education, health, and living standards. The MPI was adapted to Pakistan's context by using 15 indicators across the three dimensions. A person defined as multidimensionally poor must be deprived in at least one third of these weighted indicators. The Benazir Income Support Program (BISP) published a Poverty Profile[264] based on 2010-11 National Socio-Economic Registry (NSER) microdata. Table 26 sums up the various measurements produced by these methods. Both methods show that of the three districts, Mansehra had the highest incidence of poverty in those years.

Table 26: Poverty data

Districts/province	Multidimensional Poverty 2014-15		NSER 2010-11 BISP Poverty Incidence		
	Headcount	Intensity	Total households	Male headed households	Female headed households
Swat	55.0%	49.3%	42.24%	41.71%	44.77%
Khyber Pakhtunkhwa	49.2%	50.7%	36.92%	36.40%	39.16%
FATA	73.7%	45.8%	56.19%	56.28%	55.89%

Sources: Planning Commission of Pakistan, United Nations Development Program, and Oxford Poverty and Human Development Initiative. *Multidimensional Poverty in Pakistan*. Islamabad: UNDP.
BISP, Population of Pakistan - Analysis of NSER 2010-11, Poverty Profile, with UNICEF collaboration, Islamabad, nd.

335. Access to credit is critical for the rural poor. Recent years have seen improved credit availability, largely through the intervention of rural support programs and NGOs. Financial institutions have also become more amenable to the idea of microfinance but the capacity to utilize credit optimally is still lacking among many communities. Credit facilities have focused on traditional activities such as livestock rearing, commercial establishments (mainly shops and public call offices) and agriculture. Despite high interest rates, poor returns and a focus on already saturated sectors, microcredit extension has so far been one of the successful interventions towards poverty alleviation

336. Land is the main asset in the province's agricultural economy, and rural poverty is rooted in the asymmetrical distribution of land. Large landowners employ sharecropping tenants or provide land on an annual rental basis to cultivators. Small landowners usually cultivate their own land or employ tenants. A vast majority of the tenants are landless laborers. The agricultural income for the majority of the rural poor is derived from food crops, mainly rice and wheat.

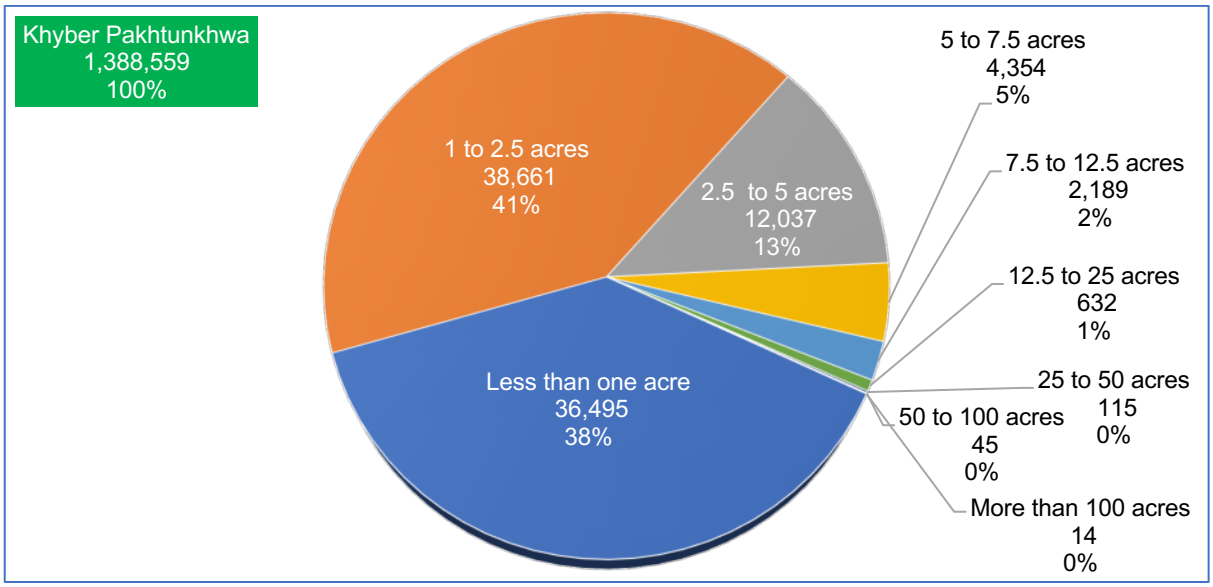
337. Province-wide in Khyber Pakhtunkhwa, farm holdings are predominantly under two hectares (82%). In the Swat district, only 8% of land holdings are above two hectares (Figure 37).[265] Since these are small land holdings, the income of owners become highly vulnerable

[264] BISP, Population of Pakistan - Analysis of NSER 2010-11, Poverty Profile, with UNICEF collaboration, Islamabad, No date.

[265] KP Development Statistics 2019.

to external shocks — such as unfavorable weather, a bad crop, or adverse economic policy — and they may slip below the poverty line, unless economic policies are made to mitigate the impact of such shocks.[266]

Figure 37: Ownership of agricultural farmland in Swat district (2010)



Source: Government of Khyber Pakhtunkhwa. 2020. Development Statistics of Khyber Pakhtunkhwa 2019.

338. The land tenure system of Khyber Pakhtunkhwa province is already established, except for the former FATA districts. In all districts, elaborate land records with cadastral maps record every plot of land with a certain cadastral number. Land records reside in a Record of Rights known as *jamabandi* in common parlance, in addition to several other periodic records maintained by the land revenue department. A Record of Rights is prepared afresh after every four years and multiple copies are maintained. The name of every landowner is written with reference to the parcel of land in the cadastral map. Every landowner can obtain a certified copy of ownership of his land from the local land revenue department.

339. The legislative framework for land inheritance is formed by the West Pakistan Muslim Personal Law (Sharaiat) Act passed in 1962. The law introduced major changes in the inheritance of land. According to this law, upon the death of the landowner, the land revenue department enters in its record the names of all heirs according to the Islamic law of inheritance and writes the share of every heir, according to Islamic law. The land cannot be transacted in any manner without the agreement from all heirs. Any heir can apply for physical distribution of land to claim his share, and the land revenue department is authorized to carry out this distribution according to the law. In practice, the land records remain unchanged, as no distribution takes place in majority of the cases. Women (widows and daughters of the deceased) are almost universally denied any share in the distribution of land. The land is distributed mostly between the sons of the deceased, and the women give consent to not taking a share of the property, which is endorsed on oath. This is the common practice in Khyber Pakhtunkhwa and all other areas of Pakistan. In land records every landowner, whether adult or child, is recorded as landowner.

[266] 'Land ownership and rural inequality.' 20 October 2008. Dawn. https://www.dawn.com/news/967370/land-ownership-and-rural-inequality Accessed 15 August 2020.

E.8. Social Protection

340. Around 5.1% of the population in Khyber Pakhtunkhwa and 4.6% of that in the former FATA are covered under social protection programs.[267] Most of these are covered under several federal government social protection programs with nationwide coverage. In addition, the Government of Khyber Pakhtunkhwa's provincial social health protection initiative (SHPI) called the Sehat Sahulat Program (Section 293) provides 100% coverage for maternity care and cancer in the outpatient department, as well as all illnesses requiring hospitalization in secondary care hospitals, with limited tertiary coverage. The other social protection programs are as follows:[268]

- **Ehsaas Kafaalat Program**: In 2019 government initiated the Ehsaas Kafaalat program linked with the national database, reaching out to seven million poor women in the country. This program provided Rs. 2,000 per month to women through biometric verification with designated bank branches and ATMs. The total number of beneficiaries in Khyber Pakhtunkhwa or in different districts is not available. The overall objective of Ehsaas is to reduce inequality, invest in people, and lift lagging districts.

- **Ehsaas Emergency Cash:** Under the Ehsaas umbrella, the Ehsaas Emergency Cash program was launched by the Prime Minister on April 1, 2020 to help alleviate the impact of the ongoing crisis caused by COVID-19. The program covers 12 million families; at Rs. 12,000 per family, to mitigate income losses incurred from lock-down measures. Distribution by district and province is not available.[269]

- **Zakat programs**: The federal government collects zakat (Islamic dues to donate to the poor) and distributes to provinces. Khyber Pakhtunkhwa received Rs. 948.22 million in the 2018-19 zakat budget.[270]

- **Pakistan Bai-ul-Mal** (PBM) provides financial assistance to the poor under several programs (medical, education and others). District-wise breakdown is not available.

- **Employees Old Age Benefits Institutions** (EOBI) EOBI provides pension to registered workers in non-government establishments. Provincial and district distribution is not available.[271]

341. The Department of Social Welfare, Special Education and Women's Empowerment implements programs for 'marginalized segments of population such as destitute women, orphans, victims of violence, drug addicts.[272]

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267 Ministry of National Health Services and UNICEF, 2018. National Nutrition Survey 2018. Islamabad: UNICEF.

268 The previous Benazir Income Support Programme (BISP) provided Rs. 5,000 quarterly to about five million poor women in all districts of the country. Massive fraud was unearthed in 2018-19 in the program where more than 800,000 people were benefitting from this programme.

269 According to press reports Rs. 19.85 billion were distributed to 1.61 million families of Khyber Pakhtunkhwa province by May 19, 2020. https://nation.com.pk/19-May-2020/rs-104-917b-disbursed-among-8-619-142-beneficiaries-under-ehsaas-emergency-cash-programme. Accessed 15 August 2020.

270 Pakistan Economic Survey 2018-19.

271 In 2018-19 July to March the number of beneficiaries were 401,940 and total payment made was Rs. 23,296 billion.

272 Government of KP, Annual Statistical Report 2016-17, Department of Social Welfare, special education and women Empowerment.

- **Vocational Training Centers for Women**: There were total of 204 functional centers in the province, including two in Swat.
- **Darul Aman** (Shelter for Distressed Women): There are five shelters in KP, including one in Swat.
- **Rehabilitation centers for drug addicts**: The province has a total of six functional centers but none in Swat district.
- **Working Women Hostels**: These hostels are located in Peshawar, Mardan, Kohat, and Abbottabad, but none in Swat district.
- **Welfare homes for orphans** are located in Peshawar (two homes), Abbottabad, Nowshera, Charsadda and Kohat, but none in Swat district.
- **Special Education Centers**: There are total of 44 such centers in the province, 11 for sight impaired, 18 for hearing and speech impaired, and 15 for those with mental and/or physical disabilities. Two of these are in Swat district.

E.9. Gender and Inclusiveness

342. The Government of Pakistan is signatory to international conventions and committed to gender equality in its public policy and legislation. The provincial government of Khyber Pakhtunkhwa has also issued policy statements and legislation in this regard. Gender discrimination cannot be addressed by public policy and legislation alone, since it requires socio-cultural changes in the value system, and in the cultural interpretation of Islam prevalent in Pakistan. The basic element is recognition of the equality of sexes despite gender roles. Equality of access and opportunity for both male and female children in family is the major issue where decisions are based on traditionally-cast gender roles, reinforced by cultural religious interpretations.

E.9.1. Cultural Values

343. The Pashtun social organization is tribal, based on a patriarchal kinship system. Five districts in the Greater Peshawar Region have almost ethnic uniformity, being Pashtun with presence of small segments of non-Pashtun ethnicities mainly in the urban localities and cantonments. Cantonments are mainly military garrisons with wide ethnic variations. Tribe (*qoum*) is divided into clan (*khel*) and further, lineages (*tappa*), which section into (*bajar* or *palarina*) and finally into extended family (*kor*). *Pashtunwali* or the code of honor is the set of traditional values that are ingrained in the tribal culture. These values are hospitality, truce, revenge, deputation, agnatic rivalry, honor and forgiveness. Pashtun claim that Islam, as deliberated in their traditions through centuries, is amalgamated in their culture. In Pathan culture, the family is the most important unit, women are the center of the family honor and segregation of sexes is an important social value. The male members of the family are protectors of the family honor and custodians of women's behavior and movement. They are the decision-makers about what women can do and cannot do, where they can go and cannot go. Women cannot go unaccompanied outside their neighborhood. This value system places women in a weak position, where they need protection of male family member in all matters, and imposes strict male domination on women in all walks of life.

344. Because of the segregation of sexes, the social role of women is traditionally limited to within the household, dominated by childbearing and housekeeping. Because of family honor

associated with women, it was considered disgraceful to take sick women for treatment to a male doctor. The religious functionaries – *mulla* - strongly opposed education of girls and their interpretations were accepted. The interpretation of religious beliefs and practices by the *mulla* is considered sacrosanct and final in Khyber Pakhtunkhwa. Religion is intertwined into the Pashtun culture and the *mulla* is the authority on this cultural-religion complex. Segregation is declared a religious edict and women must observe *purdah* (wearing of veil) while going out. Their main responsibility is defined as being within the household therefore, it is deemed that the education of girls is against religion, apart from many other demerits which are viewed as impinging upon family honor. Women are confined to the household, denied health and education facilities under strict male domination. This culture was reinforced by the popularity and prominence of mullah throughout the region.

E.9.2. Reforms

345. Since the 1980s, the government has made efforts to increase education, health, water supply and sanitation facilities, ushering in social changes at a slow pace. Civil society played an important role in helping to bring about this change. People brought their women for treatment to the nearest health facilities and very few also enrolled their daughters in primary school. This trend increased with the passage of time when health and education programs were expanded to rural areas. The enrolment of girls in school and the gradual mobility and employment of women enraged the *mulla.* Initially, girls' schools were attacked and destroyed in many rural areas. The reaction shifted from rhetoric to warfare at the turn of the 20th century with different intensities in different areas. Countless number of men, women and children lost their lives at the hand of such insurgents. After decade-long battles, intervention by the Pakistan Army became the major turning point that brought about the beginning of the change in traditional religious-cultural values determining the status of women in Pashtun society. The first major indication of this change was the rebuilding and opening of girls' schools in rural areas of the province.

346. There is still a long way to go in terms of improving gender equality in education and health, but progress is visible. In the census of 1972, the literacy rate in Peshawar district was 26.8% for men and 8.4% for women while in rural areas it was 19.7% for men and 2.7% for women[273]. The various education and literacy development programs since the 1980s and later the national drive in support of the Millennium Development Goals (MDGs) have brought about significant change in access to education for women in the region and other parts of the country. The fact that the gross enrolment ratio of girls in primary education was above 70% and net enrolment rate was above 50% in all districts of the region except Khyber clearly indicates a change in traditional values where men have at least realized the importance of education for girls. Yet, a large number of girls are still out of school, mostly in rural areas. Stronger campaigns are required to bring about change in the socio-cultural milieu that restricts access to education for girls. Access to health facilities for women has increased to some extent as indicated by the percentages of women visiting health facilities for antenatal care, tetanus toxoid vaccination and deliveries in public health facilities. This indicates fundamental changes are taking place though at a slow pace.

E.9.3. Women's Empowerment

347. The Government has increased the number of women in public representation. All women in national and provincial legislature come up through nomination by the party leaders.

[273] Government of Pakistan, District Census Report Peshawar 1972, Ministry of Interior, Islamabad, 1975.

This representation has further been extended to local government institutions. However, the value system has not changed at a commensurate pace. Women do not own property and are dependent on men for their all needs. All decisions about their wellbeing are taken by male family members: the father (in the case of unmarried girls) and husbands (in case of married women). Their social life is confined to attending family and community ceremonies at the rites of passage. The participation of women in exercising their franchise in elections is restricted, particularly in rural areas.

348. Women are economically dependent on the male head of the household. Employment of women is minimal — mostly limited to the education and health sectors, and to a very small extent in bureaucracy and private sector. About 54.4% of women who earn income in urban Khyber Pakhtunkhwa are able to decide on how to spend their income, compared to 31.8% in rural areas. The respondents in this case were drawn from a small number, only 129. About 1.8% of urban and 2.3% rural women are able decide on the spending of the husband's income in KP province.[274]

349. In land ownership the West Pakistan Muslim Personal Law (Sharaia) Act of 1962 provides for the distribution of inheritance according to Islamic law (Section D.1). The land revenue department distributes the land of the deceased according to Islamic law in the record of rights updated every four year. The name of women – wife and daughters – of the deceased and their share in the property are recorded in the record of rights. However, this is just ownership in the record of rights without any physical transfer of the property to the women. Property can be transferred from one heir to another heir after a solemn declaration of surrender on oath by the heir. This kind of declaration is used to deny landed property rights to women throughout Pakistan and in Khyber Pakhtunkhwa. About 98.1% of women in Khyber Pakhtunkhwa did not receive their inheritance of agricultural land, residential plots, house and non-agricultural land, although this is a gross violation of the Muslim Family Laws (Sharaia) Act of 1962. With the representation of women in public representative offices, this Law needs to be better enforced.

350. For some women, the most important asset that they own is gold jewelry or consumer durables they received from parents and husband when they marry. Since poor families cannot afford these items, these women have no assets. In Khyber Pakhtunkhwa, 2.1% pf urban and 1.7% of rural women have their own assets. About 53% of women in Khyber Pakhtunkhwa own their mobile phone in urban areas and 33% in rural areas.[275]

351. Women are rarely consulted by their parents on the selection of a husband for them, although this may arguably be the most important decision in life for them. The decision to marry off their daughter is taken by the father, or in some cases jointly by both parents. The consent of the young woman, which is the basic condition of marriage contract in Islam, is generally denied in Khyber Pakhtunkhwa. The cultural religious interpretation of Islam has given this right to the *wali* (father or another male custodian of the girl). While there are laws against forced marriage, and against giving women in exchange for settlement of conflicts through *jirga* (assembly of tribal elders), these laws are only in statute books. Khyber Pakhtunkhwa is not immune to violence against women and girls, which is now recognized as

[274] Government of Pakistan, Pakistan Demographic and Health Survey 2017-18, National Institute of Population Studies, Islamabad, 2019. All the following data are from this report.

[275] Government of Pakistan, Pakistan Demographic and Health Survey 2017-18, National Institute of Population Studies, Islamabad, 2019.

a global phenomenon affecting 1 in 3 women in their lifetime.[276] In Khyber Pakhtunkhwa, 29% urban and 46% rural women have experienced physical violence since they were 15 years of age.[277]

352. Changes in education are taking place, albeit slowly for girls in rural areas. According to Pakistan Education Statistics of 2016-17 in Khyber Pakhtunkhwa, some 2,384 million children were out of school, comprising 1.637 million girls and 0.747 million boys.[278] The evidence of declining trends in GER and NER of the Swat district are a sobering reminder of the difficulties. Education is the gateway to change that can pave the way for inclusiveness in due course. Education provides access to Islam to counter the cultural religious interpretation that relegated the status of women to the back. Education brings employment for women and provides for their economic wellbeing and control over their income. Education provides the tools by which women can take recourse to law to ensure their rights where needed.

E.10. Socio-Economic Setting: the Way Forward

E.10.1. Policy Recommendations

353. **Population and city planning**: The mismatch between the official municipal limits of each city and the reality on the ground needs to be addressed at policy level. The development of this policy needs to go hand-in-hand with a redefinition of urban and rural areas, as well as a review of capacities and mandates of each entity providing services within the city limits, the peri-urban and rural areas. The 2019 amendment to the 2013 Local Government Act provides the opportunity to initiate this undertaking.

354. **Human capital investment**: Khyber Pakhtunkhwa needs to develop and implement policies on prioritizing investment in human capital. Such policies will focus on maximizing the potential of children and adolescents in Khyber Pakhtunkhwa through three investment components, all of which have high benefit-cost ratios.

- First, investments in services for young child development and education have a proven association with increased number of years of schooling and increased productivity as an adult.[279] These also have a benefit/cost ratio of 7.3; that is, a benefit of 7.3 dollars for every dollar spent.[280]

- Second, investments to improve the quality and labor-market relevance of secondary education, which have been proven to have a mean benefit–cost ratio of 11:8.[281]

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276 https://www.worldbank.org/en/topic/socialdevelopment/brief/violence-against-women-and-girls. Accessed 15 August 2020.

277 PDHS, 2017–2018

278 Government of Pakistan, Pakistan Education Statistics 2016-17, Ministry of Federal Education and Professional Training, Islamabad, 2018.

279 Britto PR, Lye SJ, Proulx K, Yousafzai AK, Matthews SG, Vaivada T, Perez-Escamilla R, Rao N, Ip P, Fernald LCH, MacMillan H, Hanson M, Wachs TD, Yao H, Yoshikawa H, Cerezo A, Leckman JF, Bhutta ZA, Early Childhood Development Interventions Review Group, for the Lancet Early Childhood Development Series Steering Committee. 'Nurturing care: promoting early childhood development." *Lancet. 2017 Jan; 389(10064) 91-102.* doi:10.1016/s0140-6736(16)31390-3. PMID: 27717615.

280 García, J., Heckman, J., Leaf,D., and Prados, M.J., 2016. 'The Life-cycle Benefits of an Influential Early Childhood Program', NBER Working Paper No. 22993 December 2016, Available from: https://www.nber.org/papers/w22993.pdf.

281 Sheehan, P., Sweeny, K., Rasmussen, B., Wils, A., Friedman, H, Mahon, J., Patton, G., Sawyer, S., Howard, E., Symons, J., Stenberg, K., Chalasani, S., Maharaj, N., Reavley, N., Hui Shi, Fridman, M., Welsh, A.,

- Third, investments in female education are required as these have multiplier effects in terms of the next generation of children and young people.[282]

355. **Health:** Khyber Pakhtunkhwa requires an enhanced health policy framework for the medium to long term, backed by adequate financing. The framework should guide the improvements in the coverage and quality of basic health services and lay out the investments required in health care infrastructure, human resources, and social health protection. Health sector governance needs more attention, especially the planning and coordination, and the information management at district and local government level. Preventive health education efforts need to be intensified to address behavioral- and cultural issues.

Nsofor, E., and Laski, L., 2017. 'Building the foundations for sustainable development: a case for global investment in the capabilities of adolescents.' The Lancet. 2017, 390: 1792–1806

[282] Schäferhoff M, Evans D, Burnett N, et al. Estimating the costs and benefits of education from a health perspective. Background paper for the Oslo Summit on Education for Development. Berlin: SEEK Development, 2015.

PART II:

URBAN DEVELOPMENT: STATUS AND THE WAY FORWARD

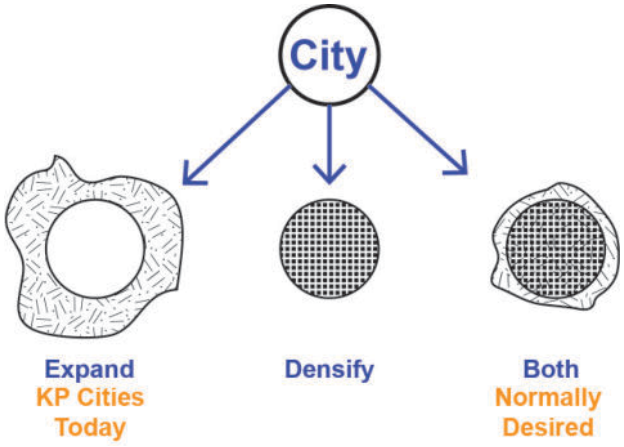
F. URBAN EXPANSION AND DEVELOPMENT

356. Urbanization is globally acknowledged as key to social and economic growth. The urban concentration of people promotes collaboration, innovation and entrepreneurship, allows for the economical provision of infrastructure and social facilities, and supports markets for goods and services. Globally, it is estimated that cities generate more than 80 percent of the global Gross Domestic Product (GDP). At the same time, however, they are on average responsible for the same proportion of greenhouse gas emissions. The urbanization process is well underway in all emerging economies with urban populations typically growing at 2 to 4 times the national rate in capitals and major cities, and twice the national level in secondary urban centers. These higher urban growth rates, however, are not always reflected in Pakistan's statistics. Urban areas are growing as fast as elsewhere through a combination of natural growth and urban-rural migration, but a significant proportion of that new population resides in urbanized areas outside of the official boundaries (sprawl) and therefore are not counted as urban.

F.1. Urban Growth Processes

357. Cities grow through two processes: expansion and densification. With rare exceptions, growth is typically a combination of the two processes. However, in the case of most Pakistan urban centers, including Mingora and the other smaller urban centers in the Swat Region, growth is predominantly through expansion. Figure 38. Where the densification process occurs, it includes infilling, re-development, revitalization and typically sees an increase in floor-area ratios, i.e., increased building heights and reduced open space. Densification typically starts in the urban core where property values, and therefore taxes, are typically highest and progresses outwards. Depending on the city, it may also densify around sub-centers related to transit hubs, industrial parks, or major institutions such as universities. The benefits and constraints of densification versus expansion are further discussed in Section F.3.

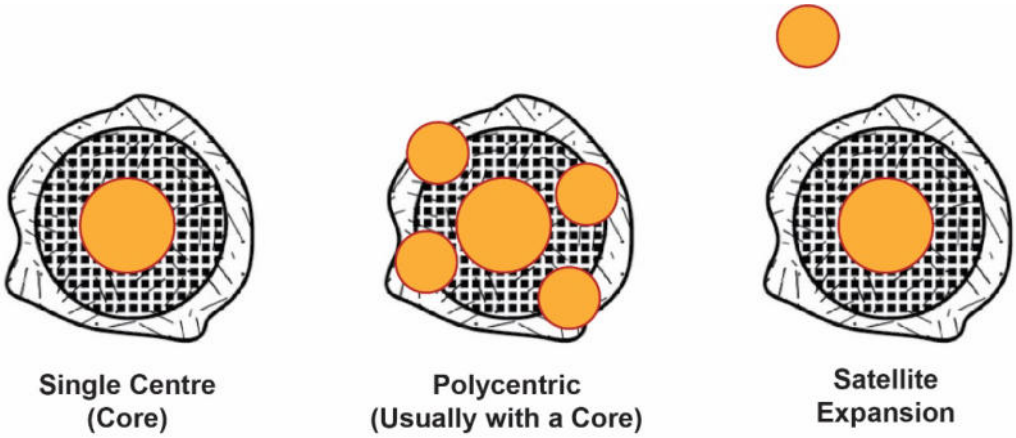
Figure 38: Urban growth processes



358. The desired alternative to the ad hoc processes driving Pakistan's urban growth, is formally planned and managed urbanization combining densification and carefully controlled expansion. Furthermore, formal planning make follow a number of basic including a single central core, multiple-centers or satellite new towns (Figure 39**)**. Each has its own advantages and disadvantages. Due to a relative lack of formal planning most Pakistan cities tend to have

a single, weakly defined central core and spread out from there. Informal sub-centers may emerge, but full advantage of their opportunities are not taken. There are no existing satellite towns or industrial estates in the Swat Region as there are in the Peshawar and Abbottabad Regions, however plans exist for development of at least one new industrial estate. New towns are typically planned as a result of two drivers: 1. the existing main city is deemed to "messy" to work with and there is a desire to start over; 2. there is a specific economic opportunity to develop in a new location that justifies a new city. The first driver is often ill-conceived. The main city is likely suffering due to a lack of resources: human, technical and financial combined with an underlying lack of political will. A new satellite city requires even more resources and high-capacity institutions to successfully implement. Although more challenging it is normally more socially, economically and environmentally sustainable to focus on revitalizing and upgrading the existing city.

Figure 39: Urban forms



359. UNDP's report on sustainable urbanization in Pakistan[283] states that Pakistan has the highest level of urbanization in South Asia. According to the 2017 Population Census, 36.4 percent of the population lives in urban areas and could reach 50% by 2025. The rate may be higher as there continues to be urban definition problems in Pakistan with only populations within official urban boundaries are counted while the equally urbanized populations surrounding them are not. This is further discussed below and may explain why cities in Pakistan (as officially defined) generate only 55 percent of the GDP, considerably below the global average. Moreover, Pakistan generates 95 percent of its federal tax revenue from 10 major cities[284] which clearly underlines their importance to the economy.

360. Population growth in urban centers is driven by two factors[285]: natural increase and migration. Migration, in turn, has two components: conventional migration and transient migration. Conventional migration is largely rural-urban as experienced throughout the world as urban centers are perceived to offer greater social and economic opportunities. Conventional migration may also be the result of people moving from one urban center to another for various personal and economic reasons. Transient migration may be the result of

283 Advocate, Pakistan, Vo. 5, Issue 4, Sustainable Urbanization, May 2019.

284 ibid

285 GoKP. 2020. Charsadda Land Use Plan (Draft). Peshawar: Urban Policy Unit, P&D Department, Government of Khyber Pakhtunkhwa.

natural disasters or political/security unrest displacing populations. This may result in temporary or permanent population increase.

F.2. Existing Land Uses – District and Urban

361. This section discusses existing land uses at the District and major urban center levels supplementing in more detail the Regional and Provincial level land uses presented in Section C.3. This is followed in Section F.3 by a review of settlement patterns within those land uses as the basis for assessing the efficiency and sustainability use of land, the starting point for all development, and making recommendations for policy, planning and development changes. Much of the information utilized in this section is based on the series of Provincial and District Land Use Plans produced by the Government of KP in 2013 for the period 2013-2033. An updated KP Provincial Land Use Plan is in the process of being prepared and expected to be completed by the end of 2021. This will be accompanied by a series of urban area Land Use and Master Plans under preparation for major urban centers expected to be approved within the coming 12 months.[286] For urban areas, Pakistan's National Reference Manual on Planning and Infrastructure Standards[287] recommends land use distribution as indicated in Table 27.

Table 27: Recommended land use distribution

S. #	Land Uses	Percentage
1.	Residential	24-32%
2.	Industrial	2-15%
3.	Commercial	1-2%
4.	Institutional	3-8%
5.	Arterial Circulation/Terminals	13-20%
6.	Recreational Open Spaces	2-5%
7.	Graveyards	0.5-3.5%
8.	Vacant	9-45%

362. In reality, an analysis of the aerial images in Map 11, Map 12 and Map 13 suggest a much higher percentage of Residential land use in the urbanized area due to a lack of planning and development control resulting in low-density sprawl beyond official boundaries. It is also noted that the space allocated to Recreational Open Spaces, which includes open green spaces, falls far below the desired 10-15%.

F.2.1. Swat Region Land Uses – Existing

363. The Swat Region differs considerably from KP's overall land use averages for both agriculture (24%) and built-up areas (2%) having only 17% agriculture and 1% built-up areas respectively. In contrast, Swat has 80% of its land covered by forest (23%), rangeland and grasses (46%) with snow and glaciers covering an additional 11%. This reflects the mountainous nature of the Region and translates into a considerable eco-tourism economic potential. Map 11 illustrates detailed land use distributions, Table 28 presents details of areas and percentages while Figure 40 present the simplified clustering of land uses. Built-up

[286] KP Urban Planning Unit, 2020

[287] GoKP. 2020. Peshawar Land Use Plan (Draft). Peshawar: Urban Policy Unit, P&D Department, Government of Khyber Pakhtunkhwa.

urbanizing areas are almost entirely clustered around Mingora in the very south of the Region. Land uses differ dramatically from the neighboring Peshawar Region which has almost twice the agricultural land, one half the natural vegetation coverage, and three and half times as much built-up land by percentage.

364. Although Khyber Pakhtunkhwa as a whole is an important agricultural province, cultivation in the Swat Region is limited and constrained by topography. Much of the production is locally consumed with exporting, value-added agro-processing and access to outside markets constrained by a lack of good connectivity. Due to these distances, the limited local market, and underdeveloped resource base, significant proportions of raw materials and manufactured products are imported to the region with high transportation and freight costs. According to the manufacturing census, industrial and employment costs per registered factory in Khyber Pakhtunkhwa are approximately twice that for Punjab Province.[288] The Swat Region's isolation would make it one of the most negatively impacted by additional costs.

365. Swat District encompasses a total area of 5,391 km^2. Detailed existing land uses are presented in Table 28 and Map 11. Summary land use classifications are presented in Figure 40. The land use decisions have historically been ad hoc lacking implementation of an institutionalized and enforced land use policy. If and when a Swat District Land Use Plan is completed it may help overcome these failures and "promote potential-based use of the land for maximum land resource conservation". A leading policy initiative is to protect valuable agricultural lands from indiscriminate encroachment of other uses. The need to recognize environmental and climate change impacts is also embraced. With only 18% of the District's land under agricultural use, preserving that is critical for local well-being.

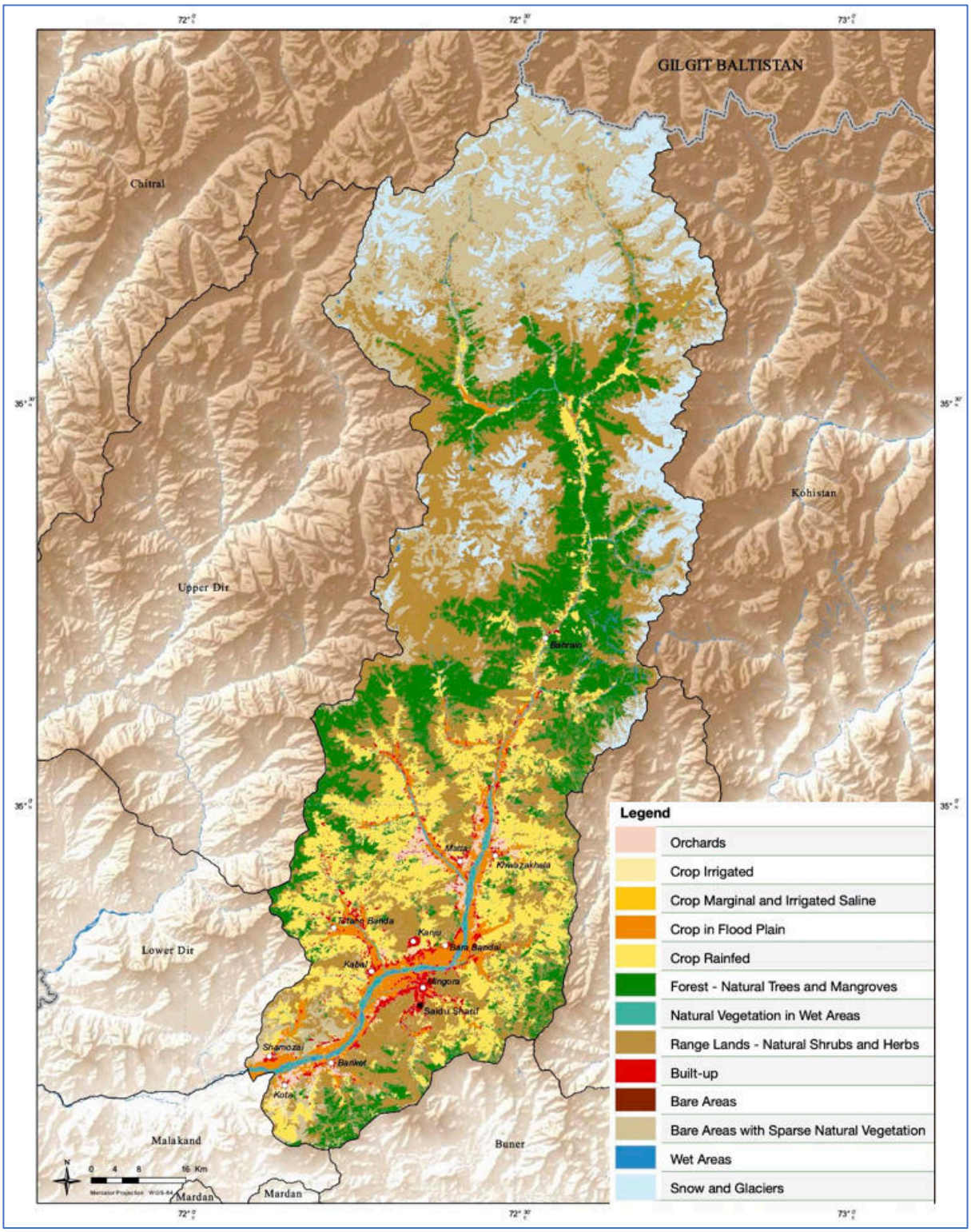
Table 28: Land use – Swat Region (km^2)

Land Use Category	Area (km^2)	%
Orchards	49.64	0.9%
Crop Irrigated	5.99	0.1%
Crop Marginal & Irrigated Saline	0.00	0.0%
Crop in Flood Plain	170.78	3.2%
Crop Rainfed	758.34	14.1%
Forest: Natural Trees & Mangroves	1,171.22	21.7%
Natural Vegetation in Wet Areas	62.26	1.2%
Range Lands – Natural Shrubs & Herbs	1,429.09	26.5%
Built-up	77.31	1.4%
Bare Areas	0.00	0.0%
Bare Areas with Sparse Natural Vegetation	1,015.03	18.8%
Wet Areas	38.45	0.7%
Snow & Glaciers	613.84	11.4%
Total	**5,391.95**	**100.0%**

Source: Land Cover Atlas of Pakistan: The Khyber Pakhtunkhwa and FATA, FAO, 2016.

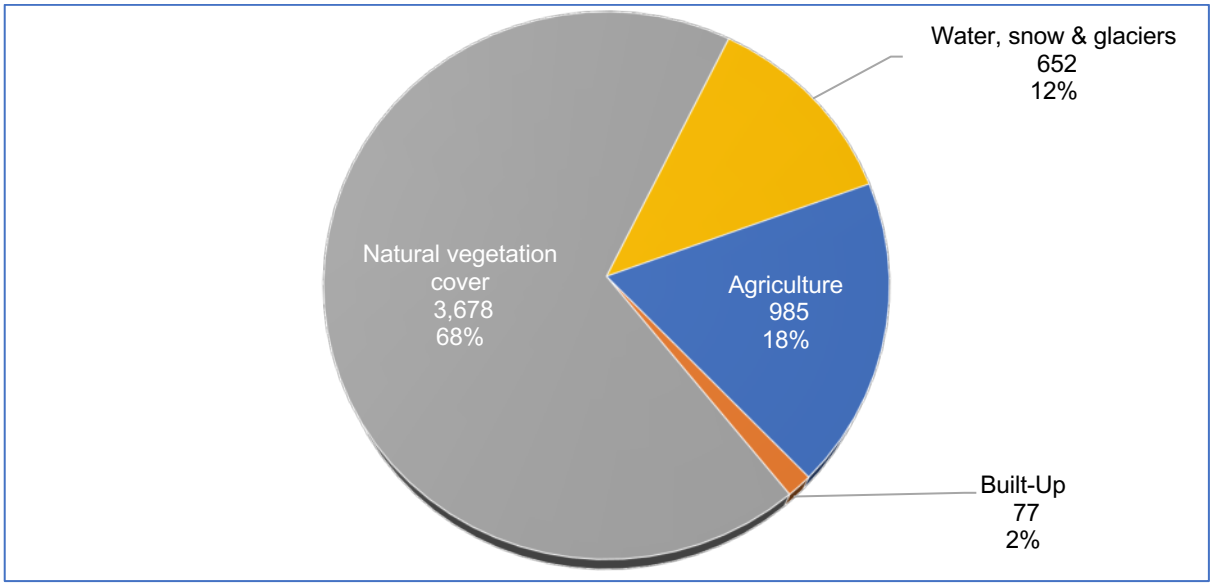
[288] Peshawar City Development Plan (Draft), 2019.

Map 11: Land uses – Swat Region



Source: Land Cover Atlas of Pakistan: The Khyber Pakhtunkhwa and FATA, FAO, 2016.

Figure 40: Land use summary – Swat Region



Source: Land Cover Atlas of Pakistan: The Khyber Pakhtunkhwa and FATA, FAO, 2016.

366. The geographic and topographical nature of the Swat Region is best described as mountainous and isolated. The main city of Mingora is squeezed into the confines of the Swat River Valley as illustrated in Map 12 competing for space with important floodplain agriculture.

Map 12: Topography: Mingora in the Swat River Valley

F.2.2. Mingora City Urban Land Use – Existing

367. Mingora city, the divisional headquarters of the Malakand Division, one of the six divisional headquarters in KP, is the third most populated city in the province. The population of Mingora is estimated at 369,662 in 2020 with a growth rate of 3.45% between 1998-2017.[289]

368. Mingora is located along the N-95 highway on the south-east banks of the Swat River. Across the river to the north-west is the urban area of Kabal which, although a separate Municipal Council, can be considered part of a greater Mingora area (Map 13). Mingora's settlement patterns and urban form are discussed in Section F.3.1.

369. Mingora's urban form is defined largely by topography. The city is squeezed into the narrow Swat River valley with the city effectively split into two by the river, although they function as two separate tehsils: Mingora and Kabal.

Map 13: Mingora metropolitan area

F.2.3. Urban-Rural Land Use Conflicts

370. Throughout the analyses of all urban centers the issue of competition and conflict between urbanization and rural land encroachment emerges. One of the overarching land use threats to the sustainable retention of valued agricultural and environmentally important natural land uses is the uncontrolled sprawl of built-up areas which occurs around almost all of Pakistan's urban centers. Managing both rural and urban lands in a coordinated and integrated manner, including plans for the provision of infrastructure and services, is essential. At present, this coordination is not taking place with unplanned, ad hoc development being

[289] Government of Pakistan, 2017, Provision Summary of 6th Population and Housing Census, 2017. Bureau of Statistics.

the norm as illustrated in the urban example maps in Section F.5. The solution lies in a combination of political will and the solid institutionalization - operationalization of the various planning policies, regulations and develop control mechanisms that currently exist, for the most part, on paper but are not being applied on the ground. Proposed policies for future urban land use, actions to reduce sprawl and a discussion on extending urban boundaries are all presented in Part II.

F.3. Current Urban Forms and Settlement Patterns

F.3.1. Swat Region Settlement Patterns

371. All of the urban settlement in the Swat Region/District lies within the narrow Swat River Valley with the vast majority concentrated in the Mingora-Kabal conurbation in the south of the District. Map 10 illustrates this with population densities through the Swat District following that corridor. At the smaller local scale, settlement in the Swat Region encompasses a range of forms from individual rural family compound through rural villages and small towns to a limited number of secondary urban centers including Barikot, Behrain, Khawaza Khela and Matta. The common characteristic for virtually all settlement is that it has been informally planned, by contemporary definition, responding to a series of local factors: traditional leaders' guidance, topography, family structure and inheritance, cultural norms, individual wealth, and land availability. The traditional approach is perfectly legitimate and functions well until there is a demand for formal contemporary infrastructure and services or access to formal financing. At that point, a level of formal structure is required and, for the most part, Swat settlement has not made the transition. Consequently, and compounded by resource constraints, the Region struggles to provide contemporary services.

F.3.2. Existing Urban Area Forms and Settlement Patterns

372. In general, Pakistan's urban centers are characterized by low-rise, low-density, sprawling settlement patterns. Building is dense in the urban cores, but because it is low-rise, population densities are not. This applies to all the urban and urbanizing centers in the Swat Region. Hi-rise development is limited for both commercial and residential occupancy. Higher-density forms of multi-family housing are not common. As a result, the most challenging issue is uncontrolled urban sprawl which can be seen around all significant urban centers. The lack of development control and capacity to meet the demand for planned, serviced land by local governments results in new urban arrivals having few options other than to establish themselves informally on the urban peripheries and often outside of official urban boundaries. Informal residents, however, still look to the official city for employment and services without, for the most part, paying local government taxes or user fees. This imbalance severely constrains cities' ability to keep pace with demand or to adequately maintain their existing infrastructure. Urban sprawl is both a symptom and cause of government's capacity challenges. gives an indication of the extent of informal sprawl around Mingora City's official boundaries. It can be seen that there is as much settlement outside of the official boundary as there is within, while there remains a substantial amount of undeveloped, under-developed and/or agricultural land within the official boundaries. There is clearly no planning and development control coordination between the urban Tehsils and surrounding rural ones. The negative impacts of this lack of integrated planning and development control are numerous including:

i. Uneconomical infrastructure and service provision.

ii. Encroachment on surrounding agricultural/natural land.

iii. Increased urban transport needs with related costs and inefficiencies.

iv. Environmental degradation.

v. Lack of tax base to support services being accessed

373. The UNDP describes Pakistan's urbanization pattern as: "unmanaged, unaccounted and messy in nature. The overdependence of urban population on existing urban centers has resulted in excessive urban sprawl, high influx of rural-urban migration, emergence of slums and squatter settlements, exponential rise in demands for municipal infrastructures and the poor governance and management of megalopolis and agglomerating conurbations. Rather, these cities have become areas marred by boundaries whereby the elite abide and work in enclosed communities, and the poor are found in slums and other open areas. The inclusivity factor appears to be lost as cities advance rapidly, compromising security and well-being. Unfortunately, in Pakistan, a few urban centers have grown extensively, and similar growth has not been experienced in small and medium sized cities. Compounding the problem is the fact that revenue generation by urban centers is not keeping pace with their growing expenditure needs."[290]

374. Mingora has a compact urban core of densely built but low-rise ground cover resulting in a relatively low population density (Figure 41). Development in both Mingora and neighboring Kabal sprawls from their urban centers in ribbon form along main transport corridors including the N-95, and upside valleys and slopes (Figure 42 and Figure 43). As with all Pakistan and KP urban centers, the city is characterized by unplanned and uncontrolled sprawling and scattered settlements extending well beyond official urban boundaries. Map 14. However, this is less pronounced in Mingora than in many other Pakistan urban centers due in part to the restrictive topography. The outlying settlements are typically low-density housing characterized by inefficient land utilization giving rise to a high cost for providing infrastructure. This typically results in poor access and a lack of basic water, sanitation and health infrastructure. Agriculture occupies much of the flat lands along the Swat River adjacent to and within the Mingora built-up area. Two actions are required with respect to this situation. Given the shortage of prime agricultural land in Swat, those lands should be protected from further unplanned encroachment allowing crop production to continue close to the Mingora-Kabal markets. This can be partially achieved by accommodating further urban growth through densifying development of the core urban areas including infill development of selected minor agricultural lands (Figure 44).

375. Unplanned settlements make up much of the official urban area and account for almost all of the sprawl beyond official boundaries. These are technically difficult to provide with basic services after the fact due to the lack of defined right-of-way planning for utilities and unclear land tenure. A lack of political may also deprive the areas from receiving adequate resources. The informal settlements that fall administratively outside the official local government urban boundary remain officially defined as "rural" and therefore do not receive urban funding and rural budgets do not typically include support to urban forms of settlement. As a result, environment, health and poverty issues are all higher in the informal sprawl but have wider impacts on the city as a whole. Although poverty in cities is generally lower than rural poverty by pure monetary measure, multi-dimensional poverty can be higher with the

[290] Sustainable Urbanisation, UNDP, May 2019

addition of increased security risks, particularly for women and children, greater exposure to health epidemics, and unplanned and unmanaged urbanization too often results in poorly serviced urban slums, environmental degradation and inequality. Pakistan too, is confronted with a host of urban challenges.

Map 14: Mingora built-up areas

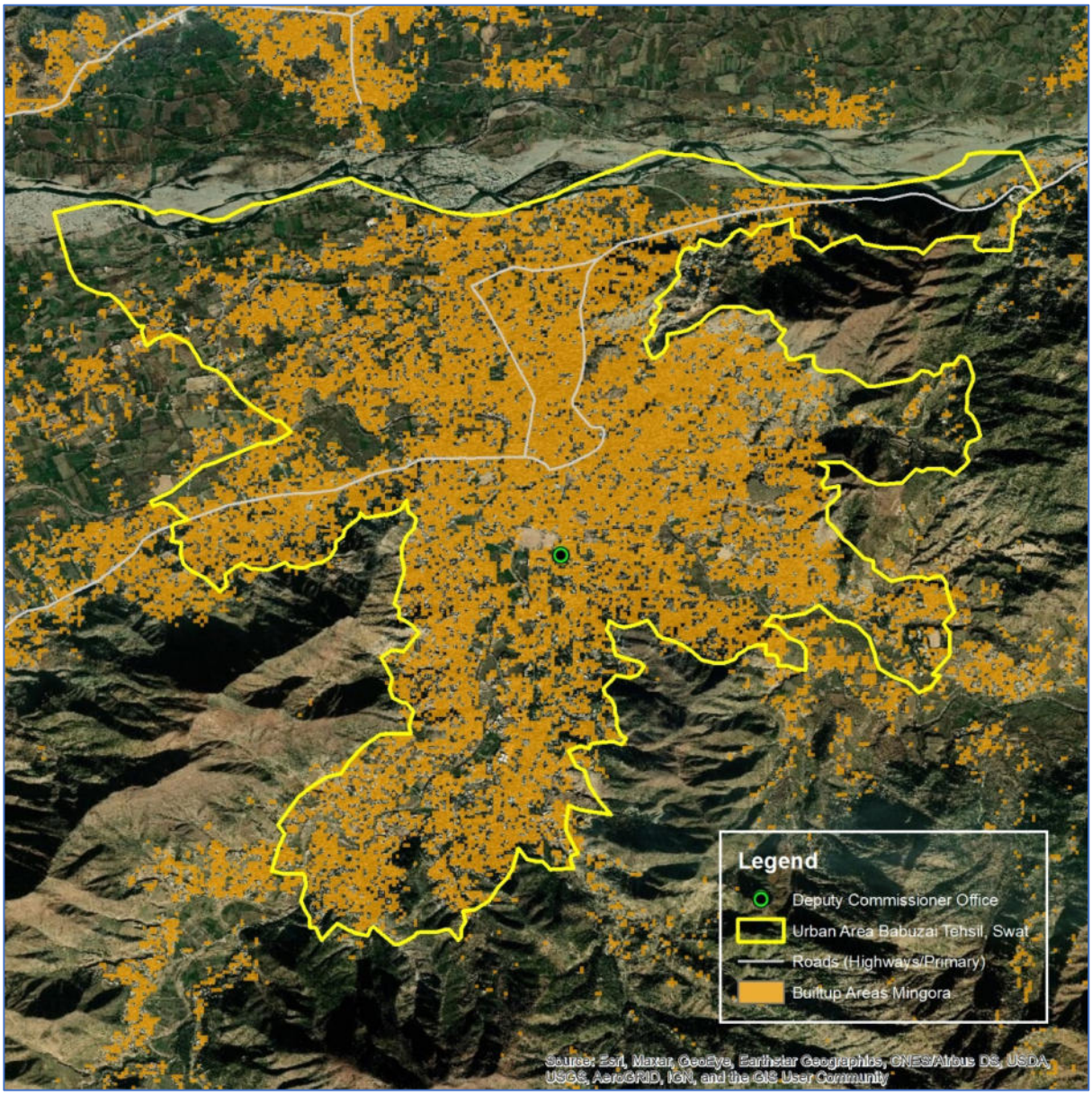


Figure 41: Mingora's compact urban core

Figure 42: Mingora – ribbon development

Figure 43: Mingora – slope and ribbon development

Figure 44: Mingora – agriculture and potential urban infill

Similar settlement patterns are found in other regional urban centers although at a smaller scale. Figure 45 illustrates the extreme form of ribbon development found in Barikot, while Figure 46, Figure 47 and Figure 48 illustrate the settlement extent and forms in other Swat Region urban settlements. At the same time, the steep topography of the Swat Valley limits

urban expansion, with the limited exception of Khwaza Khela and Matta, to ribbons following drainage courses and some developable ridges. The resulting sprawl is the common concern and opportunities and processes to reduce sprawl are discussed in Section F.3.3. Throughout, urban expansion is in direct competition with the Region's very limited agricultural lands that require the same level topography. The actions suggested above for preserving prime agricultural land adjacent to Mingora apply equally to all other Swat urban centers.

Figure 45: Barikot settlement form

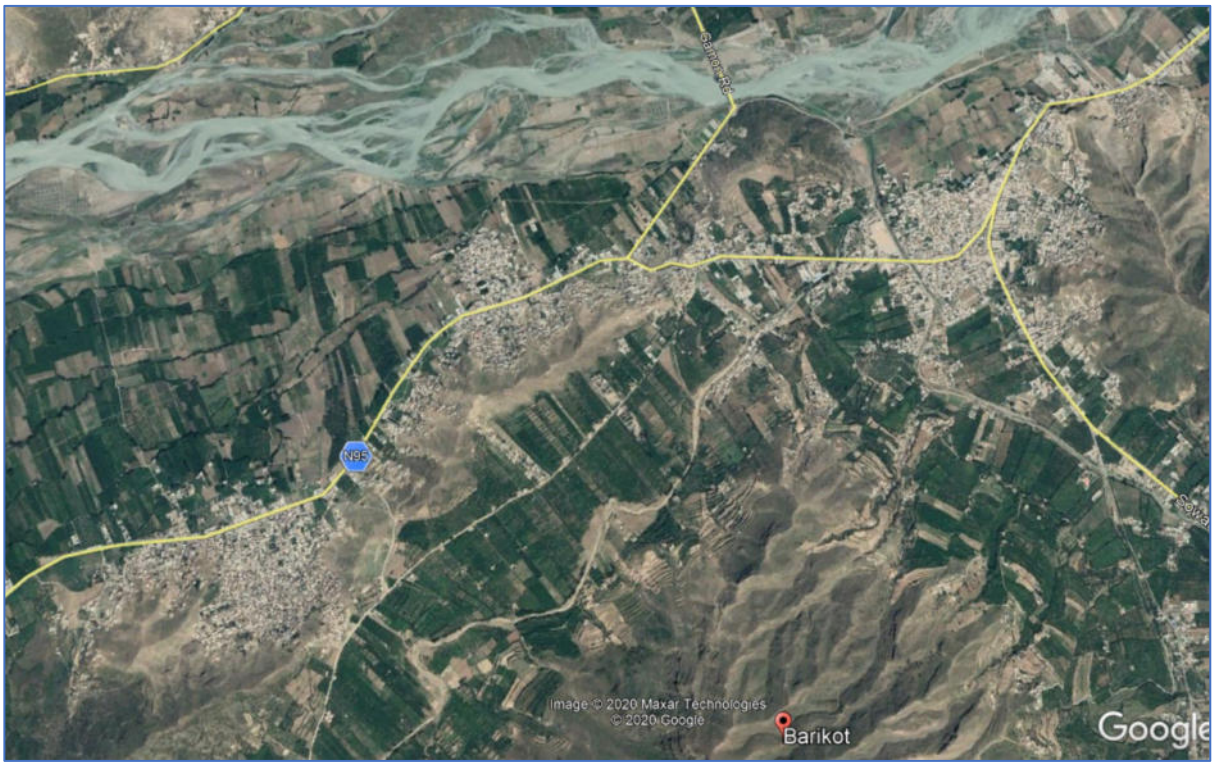


Figure 46: Behrain settlement form

Figure 47: Khwaza Khela settlement form

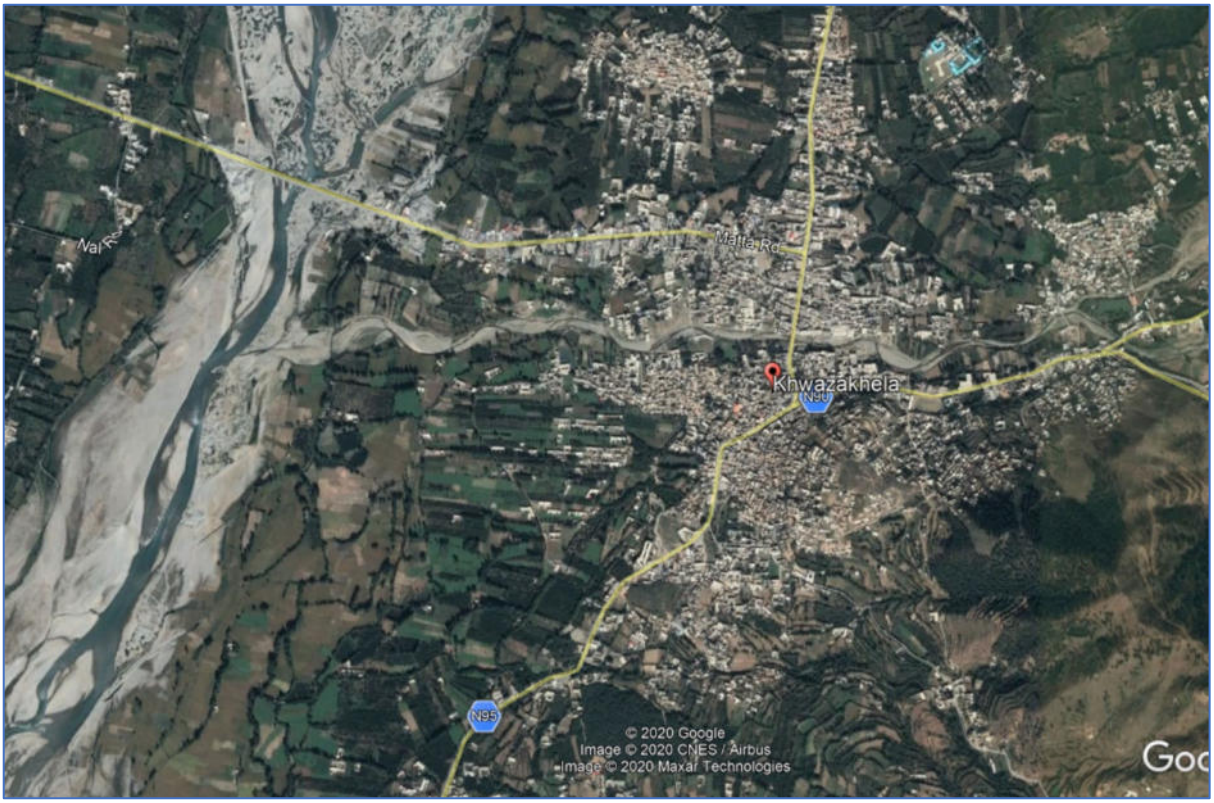


Figure 48: Matta settlement form

376. All official urban areas and unofficial expansions include significant portions of agricultural land. It is always prudent to plan for future urban expansion, but the danger with incorporating too much agricultural land while the existing built-up urban areas remain relatively low-density is the tendency to simply continue expanding unsustainably at low density rather than promoting densification of the existing built-up areas. Agricultural lands are unnecessarily lost, and provision of infrastructure and services becomes too expensive.

F.3.3. Urban Densities

377. Urban population density is one of the key criteria affecting both urban sustainable and that of their surrounding regions. As introduced above, population density is directly proportional to infrastructure per capita costs. The higher the density, the lower the per capita infrastructure cost. Higher density also means less travel time, cost and GHG emissions between live, work, play and shop destinations. At the same time, higher urban density, reduces the need to expand into adjacent agricultural or environmentally valued surrounding lands. By global standards, Pakistan's cities are generally low-density. Settlement culture historically favors low-rise living and when combined with weak institutional development control capacities, the result is extensive uncontrolled urban sprawl around most major and secondary urban centers. A primary recommendation in the United Nations New Urban Agenda is the promotion of compact, dense urban centers as a key to sustainability. Other causes of urban sprawl include:

- Poor coordination and land use management among different institutions and agencies in Swat. Urban infrastructure and services are planned and implemented based on compartmentalized jurisdictional areas among the City District Government, Town Management Administrations (TMAs), Development Authorities, Cantonment Boards and Defense Housing Authorities. This leads to a significant degree of fragmentation in planning and development and wastage of resources.

- Inconsistent application of policies and planning schemes in implementing city expansion.

- Inadequate technical and organizational capacities to keep pace with and respond to population pressures and the consequent demand for new housing and services.

378. Urban cores in KP's cities are particularly low-density by global norms and remain with significant potential for rejuvenation, redevelopment and densification thereby reducing the need to continually expand outwards while theoretically increasing tax revenues from the most valuable inner-city lands.

379. Urban sprawl increases per capita road and utility line (water, sewage, power, etc.), and the travel distances required for live-work commuting and to provide public services (garbage collection, policing and emergency response). These all increase the cost of infrastructure, road network and greenhouse gas emissions from additional travel. Cities with less than 5,000 persons/km^2 have nearly three times the roadway area per capita compared to denser cities with more than 10,000 persons/km^2.

380. Insufficient integration between investment plans and a long-term planning vision based on institutional realities and service delivery mapping. A primary recommendation in the United Nations New Urban Agenda is the promotion of compact, dense urban centers as a key to sustainability.

381. **Mingora Urban Density**: Based on an estimated 2020 population of 369,662[291] and an official urban area of 22.2 km^2, Mingora's urban UC's have an average density of 16,651 per/km^2. This is slightly above the UN's recommendation for a sustainable density of 15,000 per/km^2 with a more desirable core density of 25-50,000 per/km^2 or higher. This compares to Abbottabad's urban density of only 6,465 per/km^2 and Peshawar's urban density of 14,000 per/km^2. The higher density in Mingora is likely the result of expansion constraints imposed by the topography. By comparison it is only one half of Karachi's urban density. Comparisons to other cities are difficult given the wide range of urban boundary definitions between cities, but some comparative urban core examples are Mumbai at 121,000 per/km^2, and Shanghai and Istanbul at about 76,000 per/km^2. Cultural and perceived land-availability differences also, of course, contribute to how cities develop. What is clear is that there is considerable scope to double or triple the current density of urban Mingora thereby contributing significantly to more sustainable land use, both within and surrounding the city, reduced urban sprawl, more economically viable infrastructure, including transportation, and significant contributions to climate change mitigation and adaptation, and other environmental sustainability actions. How to achieve sustainable densification within the KP context is discussed in Section F.5.

F.3.4. District Hierarchy

382. **District Hierarchy:** The Government of KP has established a methodology and structure for determining settlement hierarchies as a basis for assessing development priorities, opportunities and potential clustering and linkages. This can be applied at the District or urban center levels. To date, an analysis of the Swat District has not been completed, but factors that are considered include:

- Number of universities.
- Number of hospitals.
- Area under major commercial centers.
- Length of roads per sq. km of district area.
- Number of hotels.
- District population.
- Availability of:
    - Airport
    - Dry Port
    - Export Processing Zone

[291] Source: Government of Pakistan, 2017, Provision Summary of 6th Population and Housing Census, 2017. Bureau of Statistics.

F.3.5. Settlement Hierarchy

383. The Government of KP in its various draft Land Use Plans of 2020 identifies a number of objectives in officially recognizing and supporting settlement hierarchies with their social, economic and physical linkages. Objectives include:

- Improving Accessibility – locating development where everyone can access services or facilities on foot, bicycle or public transport rather than having to rely on access by car. It is recognized that this may present challenges in rural areas.
- Delivering Sustainable Patterns of Development – focusing development on locations which offer a range of community facilities, services, jobs, and infrastructure. This will direct development to towns and smaller centers within rural areas.
- Ensuring Continued Service Viability – Directing development to areas where services are economically viable to deliver.
- Accounting for Economic Change – Defining a hierarchy that is resilient to anticipated future economic changes and able to meet the needs of their catchments.
- Promoting Vibrant Communities – Raising the quality of life of residents and the environment by promoting thriving, inclusive and locally distinctive communities.
- Tackling Climate Change – Reducing the need to travel by creating self-sustaining settlements where the needs of the community for jobs, housing, facilities and services are provided for.

384. The typical radiating, distance-based settlement hierarchy structure is illustrated in Figure 49. As a region develops more sophisticated ICT networks, the hierarchical structure may adjust by skipping some levels resulting in a network structure as illustrated in Figure 50. The Swat settlement hierarchy remains largely a distance-based structure although very much linear rather than radial given the Region’s topography.

Figure 49: Settlement hierarchy – radial distance structure

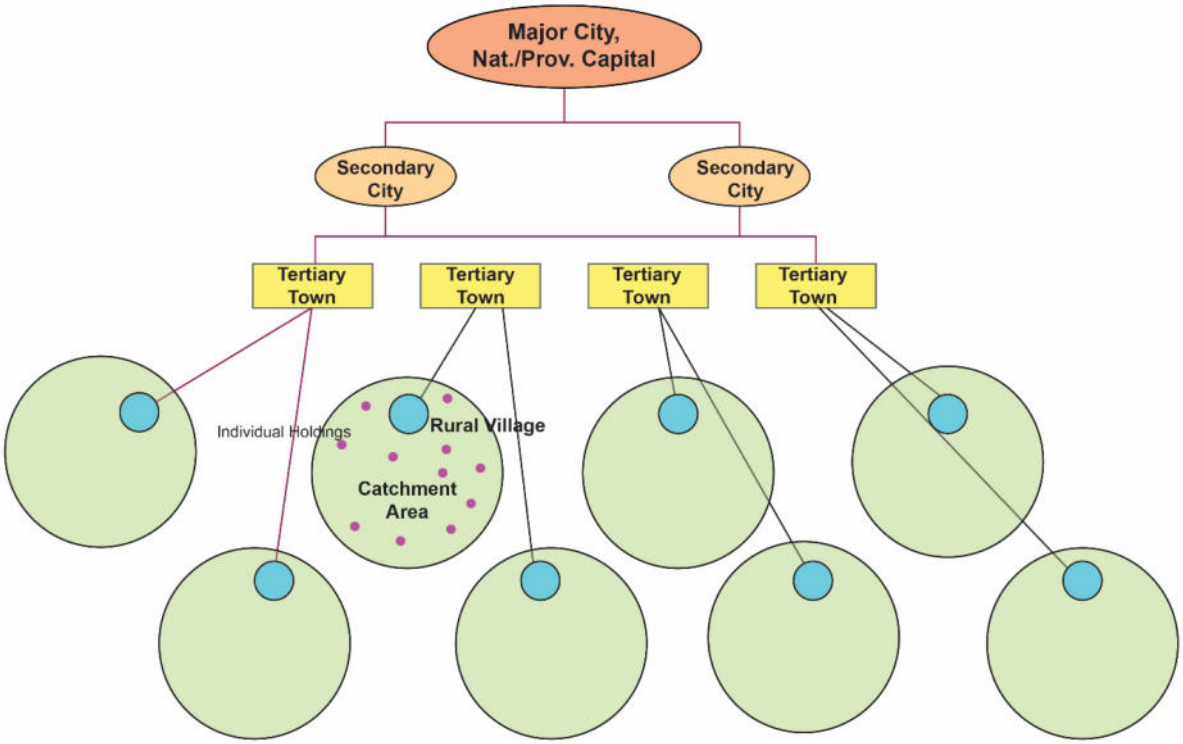
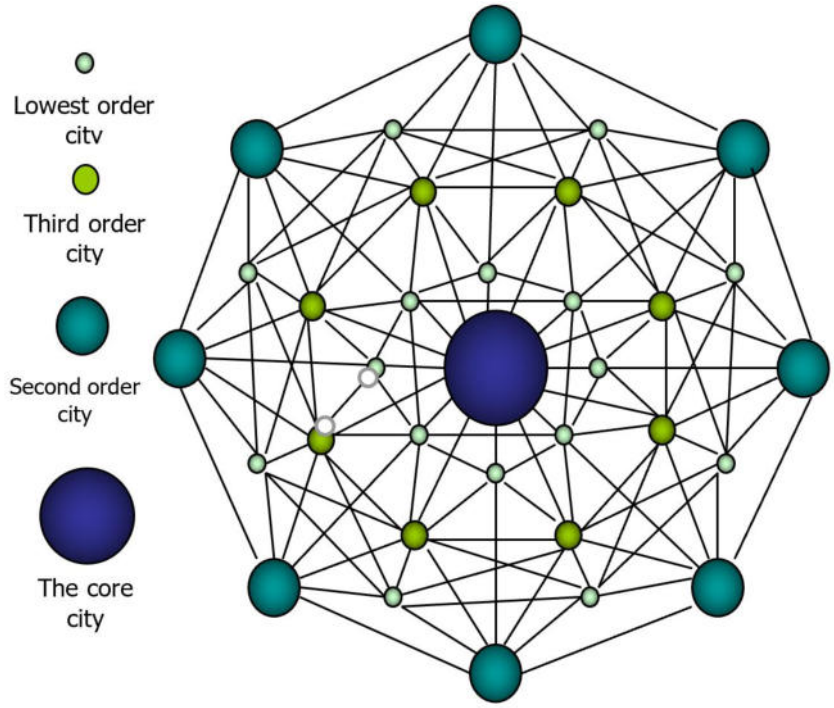


Figure 50: Settlement hierarchy – networking structure



Source: GoKP. 2020. Abbottabad Land Use Plan (Draft). Peshawar: Urban Policy Unit, P&D Department, Government of Khyber Pakhtunkhwa.

385. Mingora is by far the dominant urban center in the Swat Region with the District's major governance, educational and health facilities, and the core of regional goods and services

distribution. In addition to production for local consumption, the Region has historically relied significantly on the tourism sector which is based on the region's and all of northern Pakistan's mountainous topography. This tends to disburse the need for supporting infrastructure and services far beyond Mingora into smaller settlements and remote rural areas. Also given the very linear nature of settlement dictated by the Swat River Valley, the typical radiating structure of settlement hierarchy is less applicable with virtually goods and services flowing along the same north-south corridor. Table 29 presents the typical roles of various levels in a settlement hierarchy.

Table 29: Settlement Hierarchy – Typical Roles

Settlement Level	Role
National, Prov. Capitals	Governance center for all ministries; primary health facilities - regional hospital(s); major post-secondary educational institutions; primary cultural and recreational facilities; financial institutions head offices; major corporate headquarters; prime logistics facilities - import/export, provincial/regional distribution of goods and services; marketing centers.
Major City	Centers of decentralized provincial government offices; second tier of major health and education facilities including university and technical school branches; regional goods and services distribution centers; regional raw material collection centers and point of value-added industries; secondary marketing centers. Serve several Secondary Cities.
Secondary City	Local government centers with some devolved provincial government representation; local distribution centers for goods and services devolved from nearest major city; local logistics collection point for area's raw materials for onward shipping to major city; may include smaller-scale value-added industry and/or locally unique research extraction activities; local hospital; potential post-secondary technical school location. Serve several Tertiary Towns.
Tertiary (Satellite) Town	Goods and services distribution centers for surrounding rural catchment areas; may be first point of rural raw material collection for onward shipping to Secondary City or directly to Major City; major health clinic and possibly minor hospital; secondary education facilities. In the case of Satellite Towns by the common definition, they are typically commuter residential locations for a nearby major city and maybe local employment centers.
Industrial Estates, Special Economic/Export Zones	Special purpose developments located strategically with respect to access to raw materials, logistical support, market access. Require support services of either self-contained housing and social amenities or reliance on, typically, a nearby Secondary or Major city.
Rural Village	Basic goods and services providers to surrounding agricultural and/or other economic activities; basic health center/clinic and primary education facilities.
Individual Holding	A family/household rural residence most likely engaged in agriculture. Relies on Rural Village for basic needs and closest Tertiary Town or Secondary City for more complex goods and services requirements.
Service/ Catchment Area	A rural area governed and/or serviced by higher level towns or cities and may include individual agricultural holdings or may be wilderness, natural resource, environmentally protected areas with or without tourism or other economic activities.

F.3.6. Development Corridors

386. The whole Swat River Valley could be considered a single development corridor with action centered in the southern Barikot - Mingora/Kabal - Matta/Khwaza Khela portion.

387. The growth pattern throughout Khyber Pakhtunkhwa suggests that future planning should focus on the more holistic improvement of existing development corridors rather than isolated settlements in order to build on the synergies and opportunities of different centers through infrastructure development.[292]

388. Because of existing and potential economic activity, the corridors are particularly attractive to inward migration, but in the absence of comprehensive planning, unplanned and sprawling ribbon development occurs along these corridors extending urban centers and generating smaller-scale, patchy development. Integrated planning and development control is required in these areas to ensure the economic potential is realized and not undermined by the inefficiencies of attempting to service ad hoc development and environmental degradation.

F.3.7. New Towns and Satellite Towns

389. Based on global experience, caution is urged prior to embarking upon the development of new or satellite towns. As Regional cities expand, and congestion increases there is often a call for new towns or satellite towns as a perceived solution to the problems facing the existing cities. New towns can serve as positive development actions if there is sufficient economic justification to warrant the large development expenses required in a specific new location. However, committing to a new town should be done with caution. Several reasons are given by governments for considering this route including wider distribution of development initiatives, housing, employment and infrastructure. However, if the primary rationale is to decongest existing cities and help limit continued unplanned urban sprawl around these larger centers, caution is required. The first question to ask is the proposed new town development supply-driven or demand-driven? Supply-driven is typically the result of political aspiration, an expert's concept and/or vested interests in the land ownership and development. Supply-driven initiatives are typically relatively narrow in perspective not capturing the full complex range of hard and soft factors that build a community. If it is supply-driven, it will likely fail. If is truly a demand-driven opportunity such as to support an identified major resource extraction with related processing and manufacturing, then it can be given further consideration. The next caution is that if government does not have the resources to manage an existing town, it is even less likely to have the resources required to build and manage an entirely new town with all of the required land acquisition, new infrastructure, social and recreational amenities, employment generators and incentives to attract the wide variety of micro, small and medium private sector commercial investments to make the new town a vibrant, livable, competitive and sustainable place. The congestion that is being escaped from is simply the result of a lack of political will and resources: human, technical, financial. Cities do not function on physical development alone; they need the social and economic vibrancy that only develops over time as a result of real demand-supply processes.

390. Attempting to resettle the urban poor from inner-city to a remote new location can be problematic and may well lead to a higher level of multi-dimensional poverty. People have chosen to live where they do as they perceive it to be their best access to social and economic opportunities. Communities develop complex social and economic networks and informal safety nets over time upon which all rely. Disrupting this through resettlement significantly increases vulnerability. Resources will not be available to replicate their well-being in a new location. Relocation also deprives the remaining city of a substantial part of its workforce. There is, however, strong rationale for redeveloping, densifying and revitalizing existing urban

[292] GoKP. 2020. Peshawar Land Use Plan (Draft). Peshawar: Urban Policy Unit, P&D Department, Government of Khyber Pakhtunkhwa.

centers as discussed in several places in this report. That should be done but done with the full participation and collaboration of the existing residents. Approaches for undertaking this type of redevelopment are discussed in Section F.5. Cities must be inclusive and not developed as exclusive enclaves for the wealthier.

391. Numerous regional and global examples exist of enthusiastic starts to new towns that result only in an initial phase of infrastructure investment and a largely vacant housing estate remote from social and economic amenities. The demand and required resources failed to emerge.

392. In summary, the development of “New Towns” or “Satellite Towns” is not recommended as they tend to be only single purpose housing estates developed for private sector or political self-interest, promote urban sprawl into valued agricultural and/or environmental lands and divert resources from the much more sustainable development, redevelopment and densification of existing urban areas.

F.3.8. Industrial Estates, Dry Ports and Export Processing

393. There are none currently active, government-supported Industrial Estates (IE) in the Swat Region. Numerous ones existed in the past but have closed with a loss of tax advantages. Both SIDB and KPEZDMC have plans for new IEs in Swat. A new Special Industrial Estate exists in Dargai in the adjacent Malakand District.

F.3.9. Growth Zones and Centers

394. The Swat Region has no known officially designated growth points although the urban centers of Mingora and Kabal as primary growth points, along with Barikot, Khwaza Khela and Behrain as secondary centers would be logical choices.

F.3.10. Green Belts

395. The Swat Region nor its urban centers have not designated any known official Green Belts, although these can be recommended to limit sprawl, preserve agriculture and contribute to the Region’s climate change adaptation and mitigation efforts.

F.3.11. Existing Planning and Challenges

396. At provincial level, the Planning & Development (P&D) Department has the mandate for providing policy input for the Provincial and Sectoral Development Policies. It appraises all development projects, coordinates, and adds value to the project proposals of all provincial departments. The development of the Provincial Annual Development Program is one of the key functions of this Department. Interaction with international partners is another focus of P&D activities. Monitoring and evaluation of projects, interaction with Federal Level institutions and long-term planning are all areas that are part of the Department’s duties. Preparation of provincial statistics and planning for districts also lie within P&D mandate. The Department also oversees the Government’s reform initiatives. P&D Department has undertaken the strategic level planning, including the development of an Integrated Development Strategy, a

Strategic Development Partnership Framework, and a Provincial Growth Strategy (Table 30).[293]

Table 30: Urban planning policies, legislation and guidelines

Sector	Title	Year
Local Government	Khyber Pakhtunkhwa Local Government Act	2013
	The Khyber Pakhtunkhwa Tehsil and Tehsil Municipal Administration Rules of Business	2015
Water	Water National Water Policy	2018
	National Drinking Water Policy	2009
	Khyber Pakhtunkhwa Drinking Water Policy	2015
Environment and Climate Change	National Sustainable Development Policy	2012
	National Conservation Strategy	1992
	Pakistan Environment Protection Act	1997
	National Environmental Policy	2005
	National Disaster Management Act	2010
	National Disaster Risk Reduction Policy	2012
	Pakistan Climate Change Act	
	The Khyber Pakhtunkhwa River Protection Ordinance.	2002
	The Khyber Pakhtunkhwa River Protection (Amendment) Act	2014
	The Khyber Pakhtunkhwa Environmental Protection Act	2014
	The Khyber Pakhtunkhwa Climate Change Policy	2016
	Khyber Pakhtunkhwa Wildlife and Biodiversity (Protection, Preservation, Conservation and Management) Act (and Amendment)	2015 2017
Sanitation and Waste	Hospital Waste Management Rules	2005
	Guidelines for Solid Waste Management	2005
	National Sanitation Policy of Pakistan	2006
Housing, Zoning and Energy	National Housing Policy	2001
	Khyber Pakhtunkhwa Housing Authority Act (and Amendments)	2005 2014 2017
	National Energy Efficiency and Conservation Act	2016
	National Power Policy	2013
	National Energy Conservation Policy	2005
	Building Code of Pakistan – Seismic Provisions	2007
	Khyber Pakhtunkhwa Model Building Bye-Laws	2017
	Building Code of Pakistan – Fire and Life Safety Provisions	2016

397. At the provincial level, the development planning takes place in two steps:

[293] ADB. 2019. Pakistan: Provincial Strategy for Inclusive and Sustainable Urban Growth in Khyber Pakhtunkhwa, Urban Sector Road Map (Draft).

i. **Annual Development Program:** The ADP procedure is competing for a limited amount of funds available for development. The preparation of the ADP is coordinated by the Programming Section of the Planning and Development Department. The procedure is laid down in detail in an ADP call letter sent annually to all provincial departments and their affiliated agencies and authorities, and Chiefs/Heads of technical sections of the Planning & Development Department.

ii. **Departmental Development Projects:** The provincial departments, and their affiliated agencies and authorities have to submit a list of projects with cost estimates to P&D for inclusion in the Annual Development Plan (ADP). The projects are prioritized according to the following criteria:

    a. On-going projects at a fairly advanced stage of implementation.

    b. Foreign-aided projects with high priority.

    c. Projects dealing with emergencies, such as flood relief, etc..

    d. Newly approved projects.

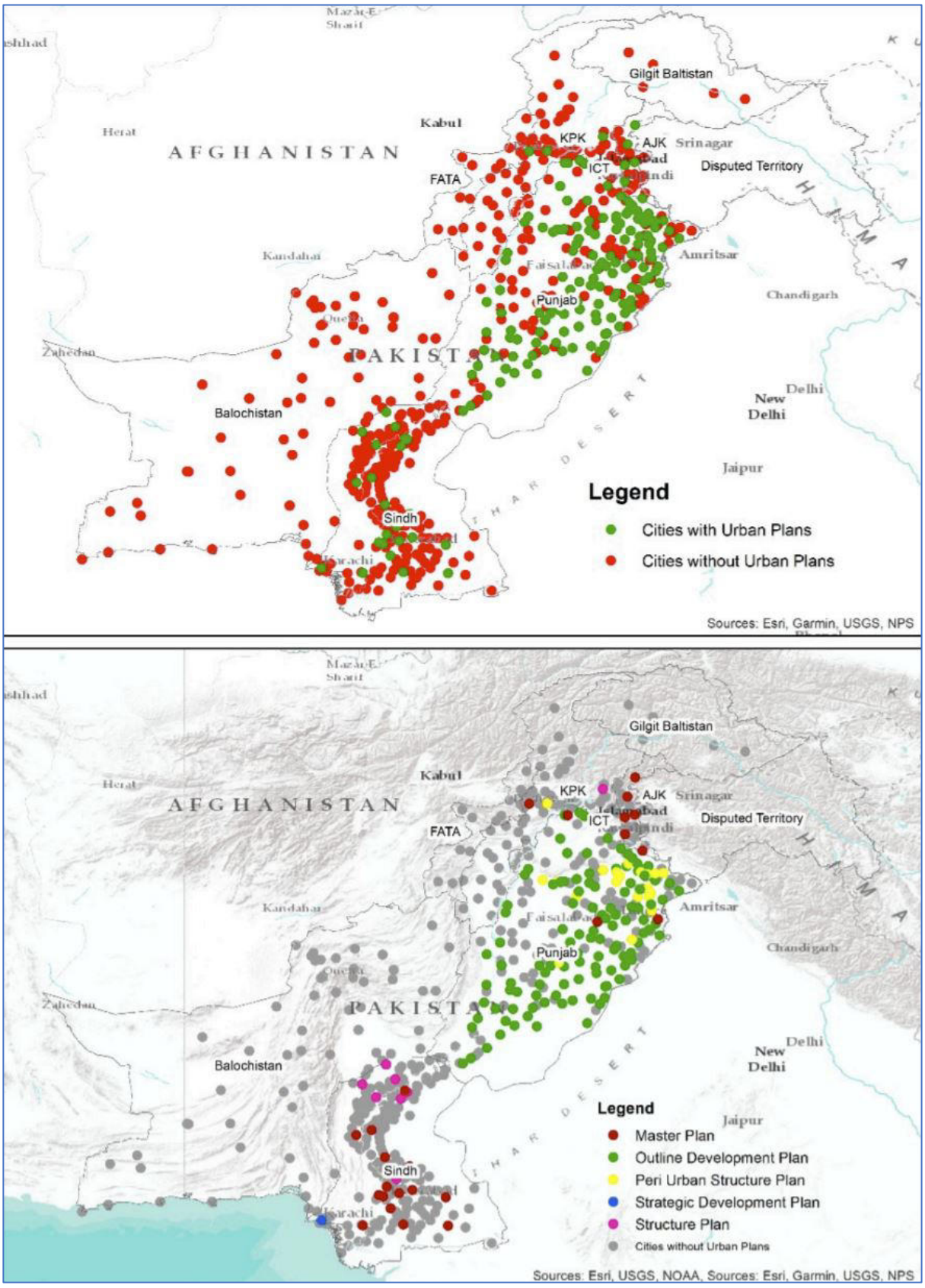
iii. **Special Projects**: Projects are also identified as a result of special policy directives of the Government. These projects initiated under such directives should be taken up on priority, even by postponing/ superseding other projects, if availability of funds is the constraint.

398. What is missing in the above project selection criteria is reference to their consistency with, and support for, higher-level visions, growth strategies and integrated development plans. There is a tendency for these higher-level planning frameworks that should be guiding the selection for all investments to be ignored in the face of politically motivated “special projects” or an agenda driven by external funding sources. This highlights the need for plans, policies and their implementation methodologies to be fully “institutionalized” securing them beyond the whims of short-cutting interference.

399. A recent assessment of urban planning issues in Pakistan identified a series of constraints.[294] The study notes that 83% of urban settlements in Pakistan are growing without a spatial plan (Figure 51).

[294] “Shaping up the Future Spatial Plans for Urban Areas in Pakistan, MDPI, Waheed, May 2020.

Figure 51: Status of urban planning in Pakistan

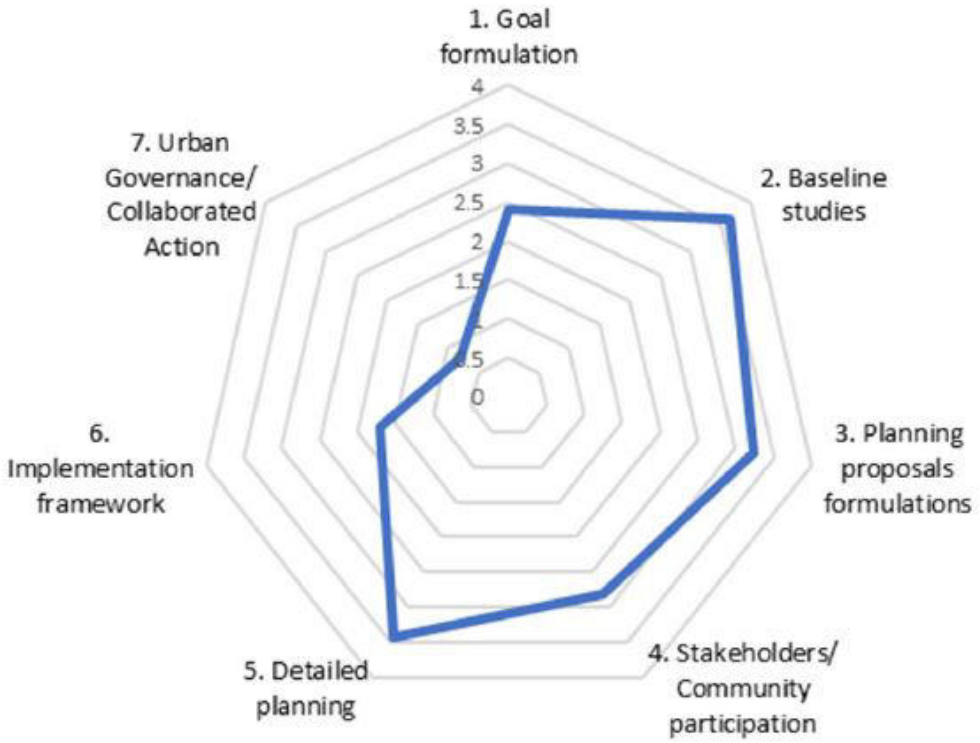


Source: Waheed, May 2020

400. Furthermore, 27 factors were identified contributing to the failure of past plans to have been successfully implemented. Most traditional Master Plans have failed to materialize.

Reasons for failure are grouped in 7 planning stages with the weakest component of the planning process being Urban Governance as illustrated in Figure 52 and summarized in Table 31.

Figure 52: Planning component performance



Source: Waheed, May 2020.

Table 31: Planning component performance

Urban Plan Making Stages	Factor Label	Factors Contributing to the Failure of Plans	Importance (Scale 1–10)
1. Goal formulation	1.1	Clarity of the implementation agency about the plan type, contents and scale	7.35
	1.2	Inability of the agency in prioritizing relevant important themes and ensuring mechanism to assign due priority to the selected themes	7.85
2. Baseline studies	2.1	Absence/wrong collection of relevant data	6.58
	2.2	Insufficient data collection	6.22
	2.3	Inadequate usage of digital planning tools (IT, GIS, PSS and RS)	6.22
3. Planning proposals formulations	3.1	Inability of plan proposals to match with future vision and the absence of mechanism to establish link of proposal with future vision	7.45
	3.2	Absence or Inadequacy of alternate proposals	7.35
	3.3	Inability of plan making process to consider all relevant planning variables	7.04
	3.4	Inaccuracy of future estimates and projections	6.89
	3.5	Insufficient data analysis	6.68
	3.6	Insufficient alternate proposals	6.58
	3.7	High time investment on data collection as compared to synthesize in proposal making	6.43
	3.8	Unexpected changes in the real world	6.22
	3.9	Weak contents and lack of comprehensiveness (thematic & geographic coverage)	6.07
4. Stakeholders/Community participation	4.1	Lack of community participation	7.76
	4.2	Lack of stakeholders' engagement	7.70
	4.3	Inability to effectively ensure incorporation of stakeholders' opinions	7.50
	4.4	More focused on donor driven agenda rather than local agency's needs	5.77
5. Detailed planning	5.1	Insufficient skills of the plan making teams	6.73
	5.2	Faulty plan making approach	6.58
	5.3	Faulty plan preparation process	6.38
6. Implementation framework	6.1	Insufficient capacity of plan implementation agency	8.78
	6.2	Absence of legal backing for plan implementation	8.32
	6.3	Delayed plan approval	8.16
	6.4	Absence of financial model to execute planning proposals	7.91
7. Urban Governance	7.1	Weak enforcement mechanism	9.29
	7.2	Lack of ownership by implementing agency	9.13

Source: Waheed, May 2020.

401. There is variety of issues that are leading to poor spatial development within Swat (and other Pakistan cities). Examples include:

i. Weak Land Market

a. The urban land prices are affected by both demand (e.g., population and economic growth, income) and supply factors (e.g., physical condition, land use and ownership, infrastructure, government laws and regulations). In the urban land market is constrained and cannot effectively respond to demand pressure, hence the land prices tend to be much higher, exceeding their productive value.

b. The illegal land market, land speculation, leads to the creation of informal settlements and slums, inefficient service provision and land administration, which increases the cost for infrastructure.

c. The lack of resources and technical capacity to tackle the issue of land for development (plans and planning instruments).

ii. Urban Infrastructure Gap

a. The growing urban infrastructure deficits in roads, water, electricity, sewerage, etc. and the poor services are increasing the cost and risk of real estate development.

b. The inadequate finance resource flows from higher levels of government and the poorly administered local tax base to support the development of infrastructure.

c. The lack of technical capacity from the Water and Sanitation Agency (WSCC) has limited information on the situation analysis for the current infrastructure.

d. The mismatch between administrative and municipal service jurisdiction boundaries and the lack of transparent processes and coordinated planning between different local jurisdictions are other obstacles to coherent infrastructure development.

iii. Out-of-date Planning

a. Extensive urban sprawl that has become a regular feature of KP Cities.

b. The absence of a settlement hierarchy that has led to the inadequate sometimes inappropriate provision of community facilities and infrastructure and the lack of ‘place-making’.

c. The prevailing “Linear project approach”, rather than adopting a multi-sectoral integrated approach, is weak and nowhere ready to address the country’s urbanization.

d. Lack of an organized implementation system and effective monitoring and enforcement process to provide long-term strategic planning.

e. The current procedures for obtaining planning and building approval are unclear. Pakistan is ranked 98 out of 183 economies globally for the ease of dealing with construction permits.

f. The current issue of food ‘insecurity’ and the lack of a robust agricultural sector in the peri-urban area.

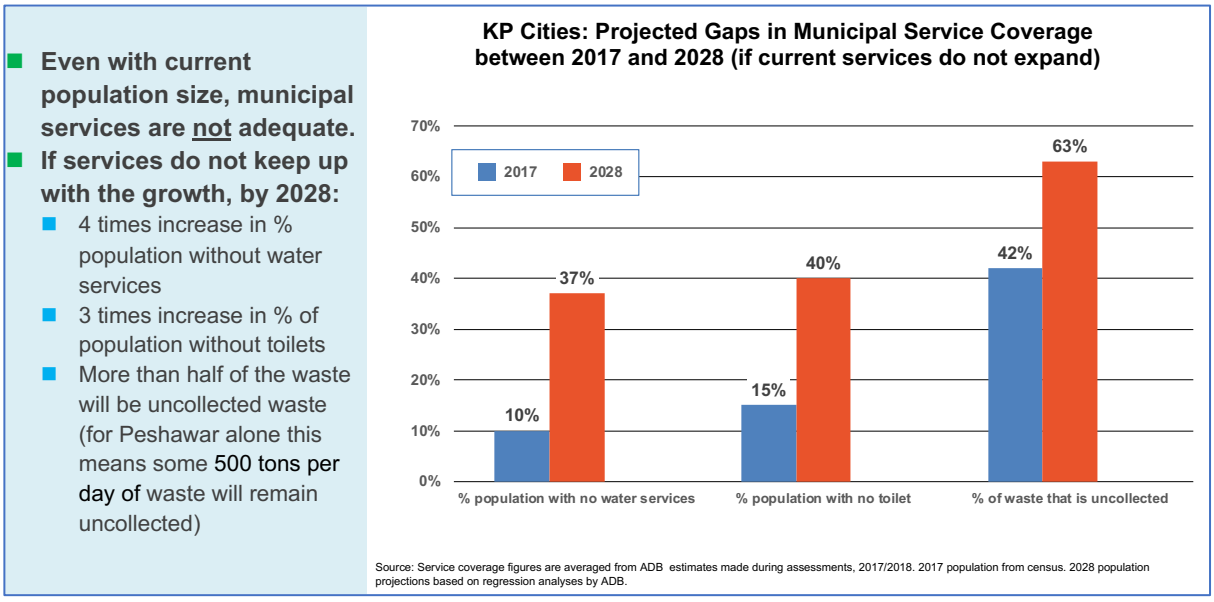
g. The lack of economic diversification in recent times and the need for the private sector to be more involved.

402. In addition, orderly planning and development suffers from lack of enforcement of existing regulations, such as they exist, corruption, and different taxation regimes between urban and rural.

403. The Urban Policy and Planning Unit (UPU) of KP recognizes a number of urban development challenges and deficiencies in the preparation of its Master Plan Project (MPP).[295] First is the potentially widening gap in service provision as urban populations increase and service provision lags which highlights the need for an urgent need for increased investment in sustainably planned infrastructure. More specific identified issues and challenges include:

- Lack of institutional capacity to manage urbanization.
- Un-planned development, absence of zoning, leading to encroachments and slums.
- Urban sprawl, linear or Ribbon development.
- Diminishing open/public spaces (public libraries, parks, walkways, etc.).
- Lack/poor quality of municipal services.
- Low density and unfriendly pedestrian development making public transport inaccessible.
- Unplanned transportation systems with inappropriately located transport and cargo terminals.

Figure 53: Population growth and municipal services gap



Source: Project team assessment.

404. Recommendations to address these issues are discussed in Section F.5.6.

F.4. Key Drivers for Regional Urban Development: Challenges and Opportunities

405. Sustainable regional development requires the integration of both rural and urban drivers, challenges and opportunities. Neither can be addressed in isolation as development in one inevitably impacts the other. Urban areas are recognized as the drivers of economic,

[295] Master Plan Project (MPP), UPU, scheduled for completion in December 2022.

and therefore social, growth and are consequently discussed here first followed by accompanying regional considerations. Proposals to address these challenges and opportunities are presented in the subsequent Section F.5.

F.4.1. Regional Economic Development: Industrial Estates and SEZs

406. Industrial Estates and related Special Economic Zones (SEZ), Export Processing Zones (EPZ) and Prioritized Special Economic Zones (PSEZ) may all have roles in promoting economic development. Potential industrial investors are interested in three main conditions that Industrial Estates can provide:

407. Access to suitable land situated in convenient relationship to raw materials, market connectivity and labor while ensuring environmental sustainability including no negative impacts on adjacent land uses.

408. Fully functional, reliable and affordable infrastructure and services including water supply, sanitation, power, communications (high-speed internet) and transport. Industrial developments have particular solid waste disposal requirements that need specialized treatment, not easily provided within the typical urban environment and often benefiting from the economies of scale where a number of industries can utilize one treatment facility.

409. Attractive and livable host community in order to attract and retain essential human resources at all skill levels. This means a community with affordable housing, accessible health, education and recreational facilities, and a wide variety of consumer goods and services.

410. An established Industrial Estate ready for potential investors seeking a development opportunity can put that city at a competitive advantage.

411. Governments at all levels can play a significant role in promoting the development of Industrial Estates by ensuring comprehensive, transparent and consistent planning, approval and development control processes; partnering with the private sector to market, develop and ensure adequate on-going management and maintenance. provide other incentives such as tax relief of various sorts, keeping in mind that municipalities rely on taxation to keep them running, so there are realistic limits to tax breaks.

412. As with all other developments, Industrial Estates should be developed on the basis of demand, not supply. The “build-it-and-they-will-come” philosophy is not reliable. Demand may come from several sources including:

- An identified sufficient local market gap to justify investing in locally-produced import replacement articles.
- A sustainably exploitable natural resource with potential for value-added processing prior to exporting either regionally or beyond.

413. In response to unsustainable environmental or climate change impacts that require existing industries to relocate from long-established inner-city locations to more sustainable and acceptable outer locations.

F.5. Sustainable Urban Growth: the Way Forward

414. In spite of no national or provincial urban policy in Pakistan and with unmanaged urbanization patterns being the norm, Pakistan is still the most urbanized country in South Asia. However, its general characteristics of low density, sprawling and for the most part single-use zoning are the exact opposite of what the UN's New Urban Agenda considers the ideal sustainable urban form: compact, high density and mixed-use. A brief discussion of the each of these qualities:

- **Compact:** makes maximum use of disturbed land and limits sprawl into adjacent and valued agricultural, environmentally protected and/or otherwise valued natural assets. Compact cities require less infrastructure and provide closer proximity to social and economic amenities with reduced transportation needs.

- **High Density:** as with compact cities, high density accommodates more population and related social and economic activities in a smaller land base thereby reducing impacts on surrounding lands. Municipal infrastructure economics are also based on connecting the maximum number of users to the minimal length of pipe or road thereby generating sufficient revenue to protect capital investments with sustainable operations and maintenance programs. Commercial entities obviously benefit from higher populations within their market catchment area.

- **Mixed-Use:** promotes close and convenient access to daily live, work, shop and play activities with minimal transportation costs. Also allows for greater use of healthier and environmentally beneficial non-motorized transport. Mixed-use development if well-managed, contributes to a more livable city.

415. However, while policies can be and should be put in place to accomplish these goals, the transformation takes time and requires in many cases, a shift in traditional cultural thinking. Specific approaches to achieving more sustainable cities are discussed in Section F.5.8 below.

416. The following are some proposals for managing and tackling urbanization in the future:[296]

F.5.1. Regional Growth Strategies

417. The Khyber Pakhtunkhwa Provincial Government recognizes the importance of integrating rural and urban development in order to develop a sustainable regional growth strategy. This is clear in its discussion of the negative impact of urban sprawl on agriculture when it states that due to rapid urbanization, cultivated land around major urban centers is rapidly being used for housing purposes by various new settlements and housing societies in KP. The government may frame a land zoning policy to regulate this practice and to preserve agricultural base, to ensure the continued production of agricultural commodities. Such a policy should limit the density of development, restrict non-farm use of land in selected areas and limit construction of buildings and structures unrelated to agricultural land uses and activities in these areas.[297]

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[296] Sustainable Urbanisation, UNDP, 2019

[297] "Reclaiming Prosperity in Khyber Pakhtunkhwa, Growing Opportunity", Planning and Development Department Government of Khyber Pakhtunkhwa.

418. Table 32 outlines the logical framework between the Spatial Development Drivers, the principles that needs to be adhered to, the objectives that needs to be reached and the strategies to achieve these development objectives.

Table 32: Spatial development principles, objectives and strategies

	SSDP Spatial Objectives	SSDP Spatial Strategy
Spatial Urban Development	Objective 1: To prepare a City to accommodate the projected population for the next 15'years, integrating infrastructure planning, municipal service delivery, and efficient land use development.	• To promote the integration between agricultural development and urban areas in the peri-urban areas and discourage urban sprawl. • To develop economic and urban clustering for industrial hubs/ residential agglomerations. • To facilitate Integrated Land Management & Spatial Planning • To strengthen the core area and develop a new Urban Development Boundary (UDB). • To prepare, maintain and adhere to comprehensive municipal spatial planning policies and strategies.
Spatial Infrastructure	Objective 2: To provide higher quality service delivery by all sphere of infrastructures to make efficient use of resources, such as water, energy, finance and waste materials.	• To promote the establishment of varied service delivery standards and strategies between various settlement typologies. • To identify key priority areas for short-, medium- and long-term scenarios, to provide a financial investment programmed and the allocation of future infrastructure provision to cater for the population for the next 15 years.
Spatial Resilience Environmental Sustainability	Objective 3: To sustain natural environments minimizing the consumption of scarce environmental resources, to develop a climate change resiliency strategy focusing on mitigation and adaptation measures strategy to increase community and urban resiliency.	• To preserve the municipality's biodiversity and rehabilitate environmentally sensitive areas. • To ensure that the quality of water from rivers, streams and wetlands is suitable for the maintenance of biodiversity.
Socio-Economic Development	Objective 4: To promotes the financial sustainability of infrastructure assets through improved operation and maintenance (O&M), and innovative mechanisms for financing robust infrastructure delivery.	• To identify the investment programmed of the City's municipal service for strategic priority areas. • To develop institutional capacity towards effective land management. • To implement streamlined development application and decision-making procedure. • To promote economic investment nodes and areas.

	SSDP Spatial Objectives	SSDP Spatial Strategy
Spatial Urban Planning Governance	Objective 5: To carry out an institutional and organizational assessment and a possible reform strategy to improve urban sectors like policy, regulation, sectoral urban planning, municipal service delivery, and utility infrastructure.	• To create one planning agency, like the City District Government (CDG) or a new autonomous authority. • To strengthen the legal framework (planning legislation) to enable changes in the design and operation of the planning system. • To promote a well-functioning administrative framework by strengthening coordination among development agencies and relevant stakeholders (people and communities) at all levels (horizontal and vertical integration).

F.5.2. Rural-Urban Linkages

419. Social, economic and environmental linkages between urban centers and surrounding rural areas are strong and require efficient infrastructure connections to ensure that these needs and opportunities are fully realized. Urban areas are the centers of economic growth and consequently the centers for goods and services supplies to rural areas including financial and technical support; typically, the industrial centers for value-added agro-processing industries; marketing and distribution/export centers. the major market for rural agricultural production that is not locally consumed. Rural areas are the source of urban raw materials including both natural resources and agricultural food supply. The flow of all in both directions is key to a sustainable economy. These links are even more important during and following the 2020 COVID-19 pandemic and directly support the KP Government's Economic Recovery Plan 2020-23. To maintain both sides of the link, adequate rural labor is required, and this is coming under threat as a result of rural-urban migration. Rural populations are migrating to the cities in pursuit of better employment opportunities and better access to social amenities. Climate change is negatively affecting agricultural production and pushing more people to the urban areas. This threatens the economic productivity of rural areas and needs to be offset by increased rural investment in those things required to make smaller centers attractive and livable with all the amenities needed to attract and keep a multi-skilled labor force. Identifying and investing in demand-driven industrial development, industrial estates, sustainable natural resource extraction, power generation, and the hierarchy of smaller urban centers that form part of the two-way supply chain anchored in the major cities is required. Non-agricultural rural economic activity such as tourism also has growth potential given the right national security conditions, but also requires investment in linkage infrastructure. In the unique case of the Swat Region with its high potential for eco-based tourism, rural-urban linkages are particularly important to ensure adequate infrastructure and supply of goods and services to the remote areas that are the tourism focus without destroying the character of the areas that are the attraction.

420. Also unique to Swat is the very close proximity of much of the region's agricultural production to the main urban centers. The limited amount of relatively flat land desirable for both settlement and agricultural uses, results in land-use competition wherever that flat land occurs. The result is that what might be typically called 'rural' and located at some distance from urban centers is contiguous with and tightly squeezed against 'urban'. Establishing

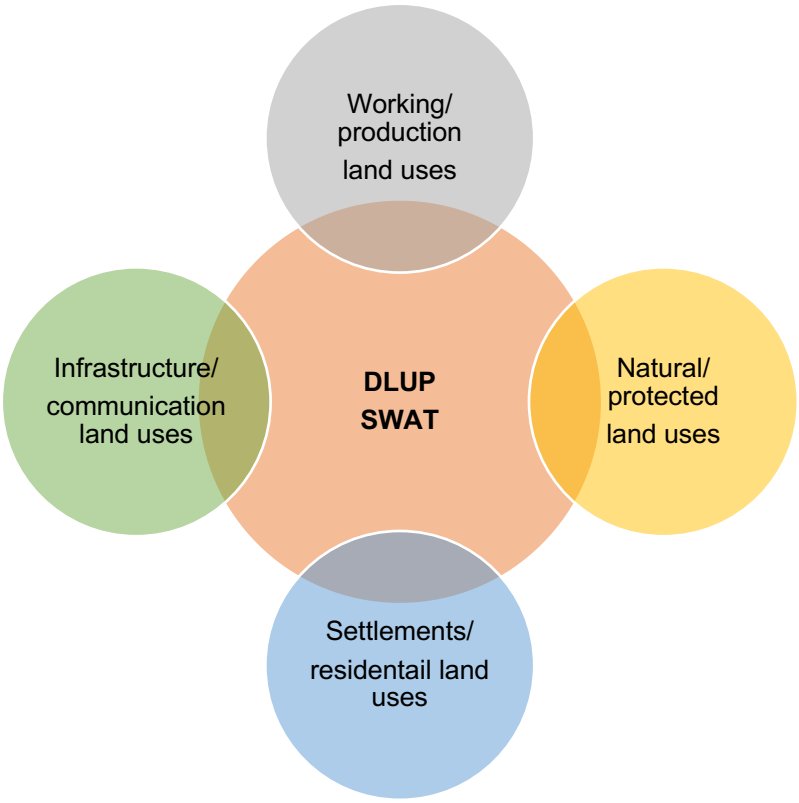
physical linkages is not the issue in this situation with the focus being on preserving the valued and essential agricultural lands from unplanned urban sprawl.

421. However, well developed rural-urban linkages can often lead to increased rural-urban migration. Not only does rural-urban migration negatively impact rural areas by removing essential human resources, but it places additional strain on urban area services and infrastructure and is one of the major drivers of problematic urban sprawl. This, in turn, further degrades rural economic potentials. In summary, rural-urban linkages need a well-developed hierarchy of road connections, rail connections where possible, sustainable and environmentally responsive infrastructure, enhanced secondary and tertiary urban centers, robust ITC networks, and strong financial, technical and energy connections. Section G. further explores rural economic development opportunities.

F.5.3. Regional Land Use Zoning – Recommendations

422. The overall principles guiding regional land use zoning are presented in Section B.2 but can be summarized by the need to maintain a sustainable balance between lands for settlement/urban needs while preserving critical agricultural and valued environmental asset lands. Regional land use zoning should begin by identifying environmentally critical, valued and non-developable lands, and ensure these are safeguarded from any form of ad hoc development or degradation. These may include wetlands and other water bodies; areas subject to flooding, erosion, landslide or seismic activity; valued forest cover that helps prevent erosion and manage water resources. valued recreational/natural heritage lands. Secondly, potentially productive agricultural lands need to be identified and similarly protected ensuring also the protection of water sheds, water and soil resources. Thirdly, provision is required for developing the hierarchy of urban centers in such a way as to serve the rural areas as discussed in Section F.5.5 minimize impacts on protected/non-developable lands, agricultural lands and valued environmental assets. Fourth, unique entities such as rural-based industrial or tourism developments should be identified and equally controlled to ensure no negative impacts on the surroundings while also contributing to regional economic growth. Fifth, planning and development is required for the transport, energy and ITC infrastructure required to support and connect all elements. These must also avoid negative impacts on regional land and water body resources. Regional and local rural governments require the capacities, political will and integration /coordination with urban local governments to ensure that urbanization does not degrade overall regional planning and development potentials. Throughout KP the Urban Policy and Planning Unit (UPU) of the Government of KP identifies four main, high level categories of land use as the basis for more detailed planning (Figure 54).

Figure 54: Four Main Categories of Land Use



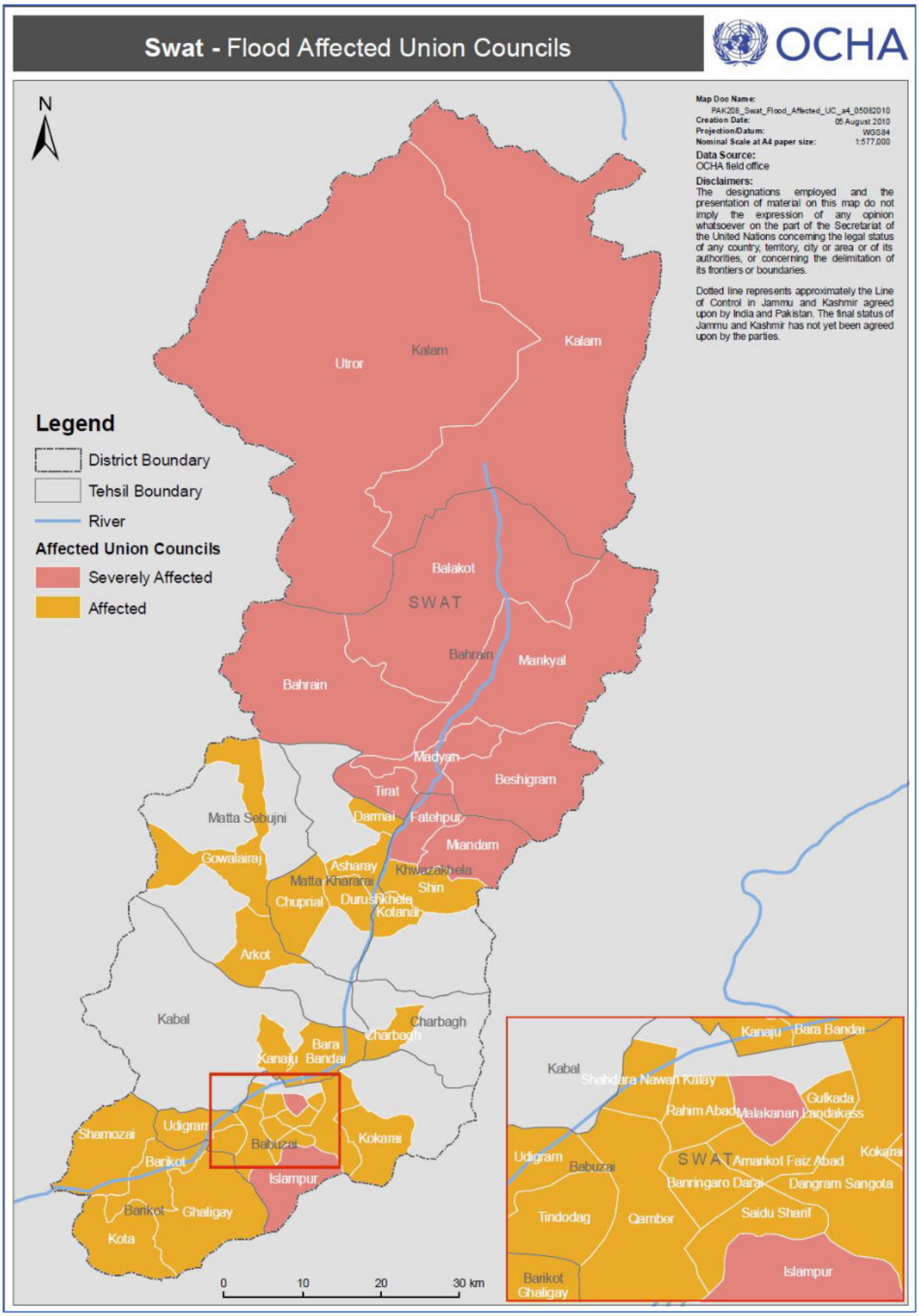
Source: Adapted from GoKP. 2020. Abbottabad Land Use Plan (Draft).

F.5.4. Undevelopable Lands – District/Regional Level

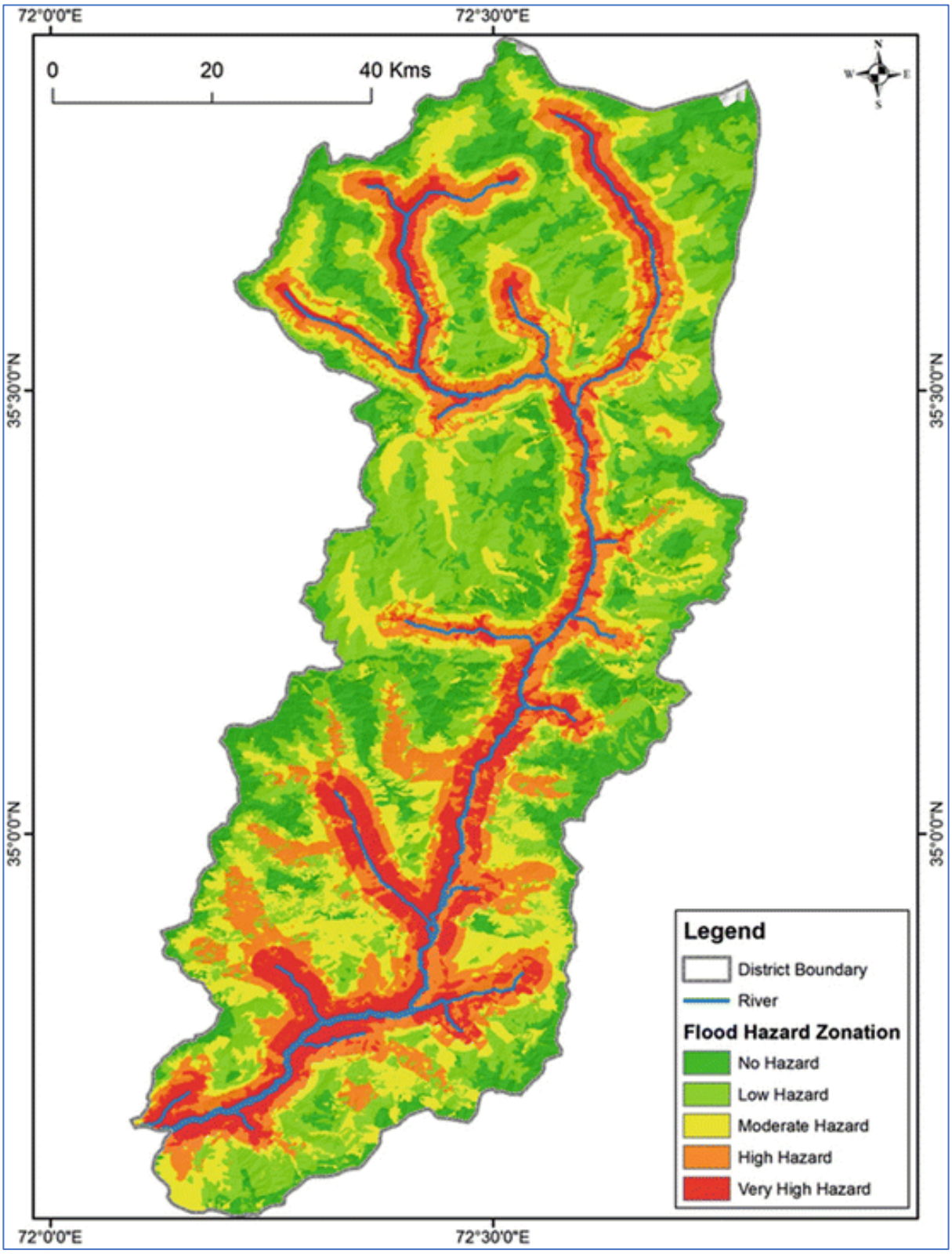
423. The first step in preparing a long-term development and land use strategy is to identify those lands unsuitable for development. Factors rendering lands undevelopable are primarily topographic and environmental including slopes, flood potential, waterlogging, natural drainage courses that need protecting, forest cover or other valued environmental or cultural assets. Preserving critical climate change adaptation and mitigation ground cover such as forests and wetlands are other considerations. Map 11 illustrates park, recreational, forest and wetland/waterbody lands that should remain undeveloped in Swat District. Given the very limited amount of forest cover remaining in Pakistan, development in remaining forested areas should be avoided with limited exceptions such as small-scale, eco-based tourism. Because of the Region's significant topography, flash flooding and fluvial flooding in the Swat River valley where all significant settlements occur are a constant threat and it is in the valleys that all major settlements occur. Map 15 illustrates flood-prone areas of Swat District while Map 16 illustrates river flooding threat zones. Green planted protection buffer zones of between 10 m and 50 m should be left undeveloped along all rural area water bodies to control storm water runoff, filter pollutants and prevent erosion.

424. Slope is another developable versus undevelopable criteria. General guidelines: lands with 0%-15% slope may be suitable for development; 16-30% slope may be developable assuming stable geology, well-managed drainage and appropriate construction. slopes of over 30% should be avoided. Map 17 presents a slope analysis of the Swat District illustrating the very limited areas suitable for development, and these are all along rivers subject to flooding. Smaller pockets of flatter developable land will always be found even in the steep slope zones, but they may be vulnerable to flash floods and landslides. Clearing forests in these areas will exacerbate the flooding and landslide risks.

Map 15: Swat flood-prone areas

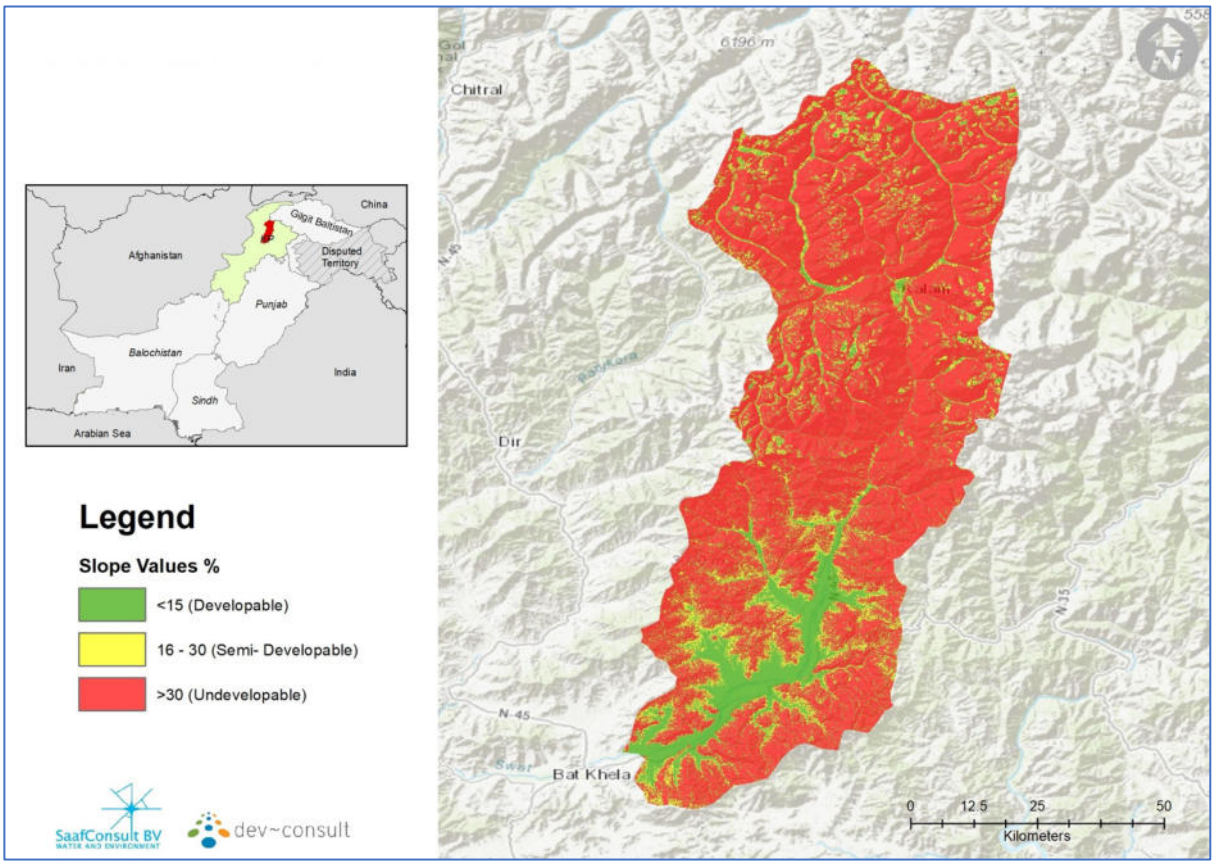


Map 16: Swat District river flood risk



Source:

Map 17: Swat undevelopable lands due to slopes



F.5.5. Proposed Hierarchy of Settlements

425. The proposed hierarchical structure for the Swat Region follows the existing as illustrated in Figure 49 and Table 29 with the addition of specific Industrial Estates, Special Economic Zones (SEZ) and their supporting development, major Tourism destinations, and other unique social or economic growth points. Table 33 suggests settlements that fill the hierarchy's typical roles that each level could play in the hierarchy.

Table 33: Settlement Hierarchy – Roles

Settlement Level	Role	Centre
National, Prov. Capitals	Governance center for all ministries; primary health facilities - regional hospital(s); major post-secondary educational institutions; primary cultural and recreational facilities; financial institutions head offices; major corporate headquarters; prime logistics facilities - import/export, provincial/regional distribution of goods and services; marketing centers.	Mingora
Major City	Centers of decentralized provincial government offices; second tier of major health and education facilities including university and technical school branches; regional goods and services distribution centers; regional raw material collection centers and point of value-added industries; secondary marketing centers. Serve several Secondary Cities.	Mingora

Settlement Level	Role	Centre
Secondary City	Local government centers with some devolved provincial government representation; local distribution centers for goods and services devolved from nearest major city; local logistics collection point for area's raw materials for onward shipping to major city; may include smaller-scale value-added industry and/or locally unique research extraction activities; local hospital; potential post-secondary technical school location. Serve several Tertiary Towns.	Complete following field work
Tertiary (Satellite) Town	Goods and services distribution centers for surrounding rural catchment areas; may be first point of rural raw material collection for onward shipping to Secondary City or directly to Major City; major health clinic and possibly minor hospital; secondary education facilities. In the case of Satellite Towns by the common definition, they are typically commuter residential locations for a nearby major city and maybe local employment centers.	Complete following field work
Industrial Estates, Special Economic/Export Zones	Special purpose developments located strategically with respect to access to raw materials, logistical support, market access. Require support services of either self-contained housing and social amenities or reliance on, typically, a nearby Secondary or Major city.	New to be developed in the Mingora-Kabal area.
Rural Village	Basic goods and services providers to surrounding agricultural and/or other economic activities; basic health center/clinic and primary education facilities.	
Individual Holding	A family/household rural residence most likely engaged in agriculture. Relies on Rural Village for basic needs and closest Tertiary Town or Secondary City for more complex goods and services requirements.	
Service/Catchment Area	A rural area governed and/or serviced by higher level towns or cities and may include individual agricultural holdings or may be wilderness, natural resource, environmentally protected areas with or without tourism or other economic activities.	

F.5.6. Urban Clustering

426. An "urban cluster" or "settlement cluster" typically comprises a hierarchy of settlement types with mutually supporting activities such as raw material source locations; labor sources; a manufacturing/value-added location; a marketing and distribution location. a supporting financial and business headquarters location. In some cases, one location within the cluster may serve more than one function.

F.5.7. Urban Growth Strategies – Recommendations

427. Guiding Urban Planning Principles are outlined in Section B.4. In summary, they aim at achieving urban forms that are: Compact, Dense, Mixed Use. Following on these principles, urban growth strategies for all of Peshawar's urban centers are aimed at addressing a common set of conditions and objectives including:

- Accommodate projected population growth with serviced land and infrastructure.
- Control urban sprawl with sustainable land use management.

- Ensure the elements for a conducive investment environment are in place to promote diversified economic development and competitiveness.
- Integrate the urban center into the Regional hierarchy of urban centers, growth points and rural activities.
- Ensure climate and environmental sustainability.

428. To achieve this, all of Swat's urban centers will need to implement the following set of common actions:

- Urgently control and reduce urban sprawl, and implement increased densification and infill development within the current city limits.
- Reduce single function blocks (including housing developments) through zoning regulations, and increase the floor area for economic uses, recreational and urban green spaces, and public use.
- Avoid expanding on to productive agricultural land, land that is vulnerable to flooding and land that would affect drainage.
- Re-define the city limits to accommodate all these concerns and manage the direction of growth.
- Review and revise zoning regulations as needed, using international urban planning principles as a guide, and enforce the regulations.

429. In practice, this means that city planning authorities in Mingora City, as an example, will need to:

- Discourage the conversion of productive agricultural land in the north to urban occupancy.
- Discourage expansion into flood-prone areas north and north-east of the city, with a preferred axis of development to the south and south-east of the present urban area.
- Encourage development towards the west, east and southern margins of the city to take advantage of opportunities such as regional development corridors, SEZs and transportation infrastructure.
- Consolidate the role of the city center, increasing density in line with planning standards and norms.
- Change the demarcation of city boundaries to incorporate appropriate peri-urban nodes. In this strategy, a dense urban core would be linked by efficient public transport networks to dense, mixed use, complementary sub-centers.
- Increase the proportion of publicly spaces to at least 15 to 20 per cent in line with the planning norms (see Section F.5.9).
- Designated green buffer zones in strategic locations around the existing margins of the city to focus development to selected peri-urban and sub-urban nodes, to preserve

sensitive ecological and hydrogeological resources (for example, groundwater aquifer recharge zones) and to prohibit development in areas prone to flooding.

430. The need to control urban sprawl underlies many of these actions and objectives. The first challenge to limiting urban sprawl is having the political will to enforce - "institutionalize" - approved plans and regulations. This will begin to provide local governments with the resources necessary to fully operationalize planning and development control policies and must apply to both urban local governments and the surrounding rural local governments. The two must act in coordination. One common response is to simply extend the official urban boundaries to incorporate surrounding urban sprawl. Without well entrenched development control, this will not solve the problem as new arrivals will continue to settle in the less regulated surrounding areas and the sprawl continues with its negative impacts and developmental challenges. Taxation levels, where these are implemented and operational, tend to be higher on urbanized land than rural lands. This becomes an incentive for rural local government to permit sprawling development into their jurisdiction even though they may lack to capacity for sustainable planning and development. Provincial level regulation is required to control this and enforce a cooperation protocol between rural and urban entities.

F.5.8. Urban Land Use Planning – Sustainability Recommendations

431. **Urban Form**: Three typical urban forms are discussed in Section F.3. Swat's urban centers tend to be an unclear blend of all three. For most effective and efficient future investment, a clear, informed decision should be made on a city's chosen form as the basis of a comprehensive Integrated City Development Plan. Rather than linear development along the highways or a business as usual scenario, there are numerous social, economic and environmental benefits to the "polycentric" form with a series of well-linked development nodes surrounding a primary core. This creates a series of development nodes each containing all that is required to live, work and play on a daily basis: housing, employment, retail, schools, health facilities, parks and recreational facilities. The benefits include reduced travel distances, reduced urban core traffic congestion, and the ability to incrementally add new nodes in a controlled manner as the city grows with incrementally developed servicing and infrastructure. The core remains the heart of the city and the focal point for governance, the main social, cultural and recreational facilities, major bank and corporate headquarters, and maybe key historical assets that give the city a sense of place. The core will also continue to develop as the city grows, but it does not have to absorb the full needs of the expanding city as these are dispersed to the nodes.

432. **Transport and TOD Development**: Transportation, public transport in particular, is the physical framework of a city and should form the nuclei of multi-centric nodes linking each other to the core through a series of transit-oriented-developments (TOD). Although Mingora is still a relatively small city, it is not too early to begin introducing the approach. Transit hubs - bus, train or multi-model - attract development, increase property and taxation levels and provide accessible employment and services for surrounding residents. Secondary mobility networks for both non-motorized and motorized transport are required to link all parts of the node to the center. Land use planning should encourage high-density and mixed-use development in TODs. Refer to Figure 59 and Figure 60 for conceptual examples.

433. **Mixed-Use Neighborhoods**: Whether cities develop with a single core or multi-centric, a fine fabric of mixed land uses should be encouraged throughout. All neighborhoods should strive to become self-contained areas that meet the diverse needs of local communities in housing, employment and leisure. To this end, a greater proportion of the land use plan

should be allocated to community facilities and services than currently. All of a families' daily needs should be easily accessible without the need for motorized transport. This includes access from home to shops, schools, health facilities and both passive and active recreational facilities including open green space.

434. **Inclusive Residential Planning**: residential areas should be planned with a mix of housing typologies - single-family; low, medium and high-rise - accommodating a full range of socio-economic groups with special attention to more vulnerable and disadvantaged groups and include a mix of owned and rental units.

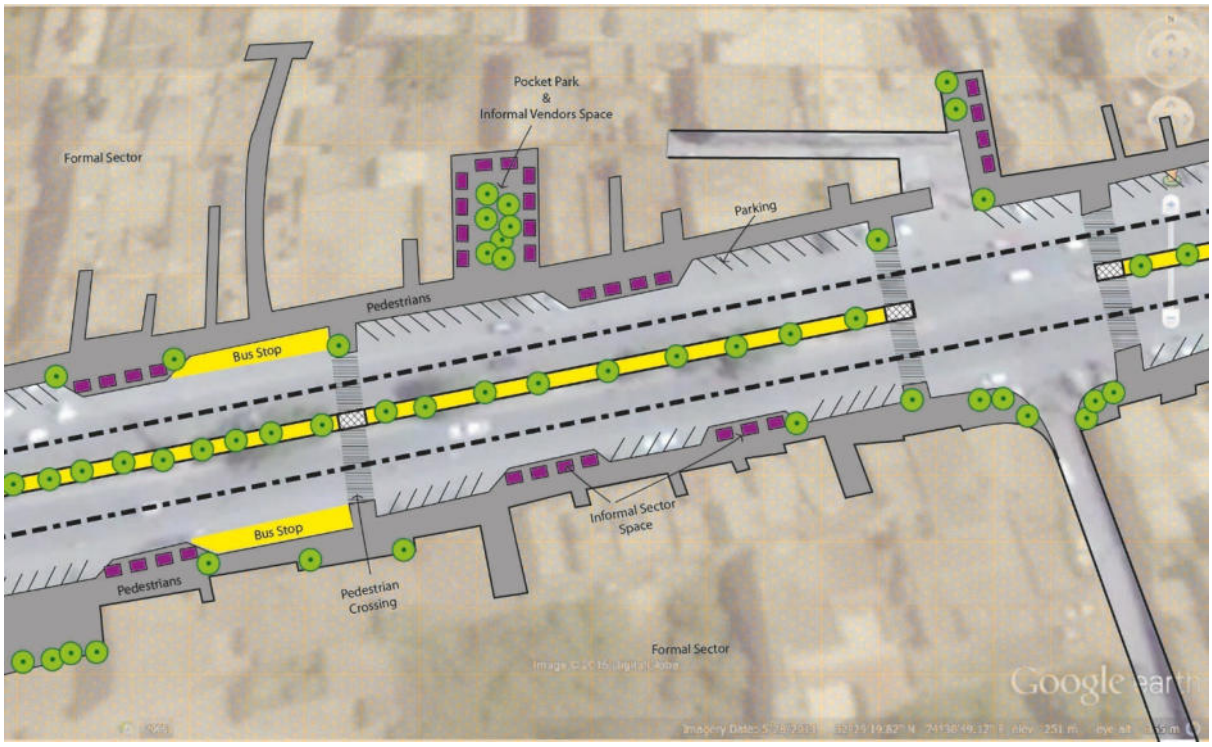
435. **Development Control**: Many or most of Peshawar's urban plans have failed to materialize through a lack of development control; a failure to ensure that what is planned is followed with the required application, review, approval and inspection follow-up. Unplanned ad hoc development results. Development control activities supported by adequate resources - human, technical and financial - should be a priority investment by local government and institutionalized to be elevated beyond the easy influence of vested interests. Development control impedes ad hoc development which is often seen as an impediment to the elite and therefore requires political will and well-known, consistent and transparent development approval processes.

436. **Managed, Multi-Functional Street Spaces**: Urban street spaces are a city's physical framework and serve a multitude of functions. Urban streets are used by motorized transport in all forms from motorcycle to bus and truck; non-motorized bicycles and horse/ox/camel-drawn wagons; parking; pedestrians; informal sector vendors; access to formal sector businesses. service vehicles. Additionally, they are typically main stormwater drainage routes and the corridors for other infrastructure. Streets are important social spaces and have the potential to be climate change mitigation elements with increased urban greenery. However, from a typical planning and development perspective they are thought of only as motorized transport corridors. Ignoring space for all a street's other functions results in the chaos currently seen in most of Pakistan's urban centers and illustrated in Figure 55. The space does not function efficiently for any users impeding social and economic growth. To create the livable and competitive urban centers of all sizes required to promote economic and social development requires investment and integrated management of the city's street network.

Figure 55: Unmanaged street space

437. Figure 56 illustrates an example of redeveloping an urban street to efficiently accommodate the full range of legitimate users.

Figure 56: Re-planned and managed urban street



438. **Smart city growth** calls for close coordination of spatial planning and infrastructure investment. Once the future city boundaries have been agreed on, key infrastructure sectors will need to plan the elements to meet the planning norms for both the city center and the peri-urban areas. Currently, many large residential urban areas lack basic services and community facilities. Public green space and public facilities should aim to increase the overall resilience of the city, such as the integration of open spaces into storm water management systems, the establishment of water retention ponds, facilities for the re-use of wastewater and sewerage, and green infrastructure design (e.g., green roofs). Water-sensitive landscape planning and urban infrastructure design (streets, buildings and services infrastructure) should incorporate social, cultural and economic aspects to reduce fragmentation and support social inclusion. Public facilities should be planned with the catchment areas and capacities used in international planning standards.

439. Specific recommendations for the major urban centers of Swat region for action by the cities' planning authorities include to:

- Consolidate the role of the city center and increase urban density in the built-up areas in line with planning standards and norms.
- Increase the use of the city floor area for economic use, roads, parking, and public spaces and increase the density in current residential areas, including by building up.
- Prohibit development on any land that would impede drainage or is vulnerable to flooding.
- Plan future urban expansion concentrating on densifying three urban corridors (built-up areas along Karakoram Highway (N-35), the Kakul Road and the Murree Road). The strategy proposed is to develop each urban corridor into an intensive, livable

mixed-use area well-connected into the surrounding urban, economic and social facilities.

- Change the demarcation of city boundaries to incorporate appropriate peri-urban nodes.
- Increase the proportion of public spaces to at least 15 to 20 percent in line with international planning norms.
- Aim to increase the overall resilience of the city through the effective use of public green space and public facilities, such as the integration of open spaces into storm water management systems, the establishment of water retention ponds, facilities for the re-use of wastewater and sewerage, and green infrastructure design (e.g., green roofs).

440. One important infrastructure element to support economic growth is improved urban mobility. As an example, Mingora City is built along a several km stretch of the N-95 which handles high volumes of traffic, both local and in transit to-from northern Pakistan. Traffic and other street-space uses are not well managed and consequently inefficient. There is an opportunity to create a BRT route along this corridor with TOD developments encouraged at key stations in support of greater densification in the city's central areas and one step towards better management of the corridor space (Figure 59).

441. **Special Planning Area Designation**: lower-income, informally settled areas often fall outside of formal urban planning and development considerations due to a lack of political will, the perceived complexity of the issue and pressure to direct investments to new areas and infrastructure development. Most Pakistan cities have designated a very limited portion of informal 'slum' areas as official 'katchi abadi' areas. This is the first step towards establishing the structure for targeted formal upgrading investments. It is recommended that these designations be extended to cover as much of an urban area's informal, lower-income areas as manageable redevelopment zones towards which budgets can be designated.

F.5.9. Integrated Urban Development – Recommendations

442. No urban component operates in isolation. Each requires the mutual support of, and integration with, others. In order for an urban area to be sustainable, livable and competitive, planning and development must fully incorporate a broad range of components establishing the network of institutional and physical linkages required to gain maximum efficiency and effectiveness from each investment. As an example, a straight-forward investment in new water distribution pipelines should be designed with a full understanding of the answers to a few basic questions:

- Who will be the direct and indirect beneficiaries?
- How will they access the new service?
- Will it be truly accessible by all who should have access? Physically? Financially?
- How will it potentially stimulate economic growth and diversity?
- What potential growth is it planned to serve?
- Is it planned to accommodate future expansion and capacity?

- Does the project demand-driven and logically support achievement of the city's overall vision and long-term development plan? Or is it supply-driven supporting an ad hoc political desire?
- Is it planned in close collaboration with other sector planned developments to avoid duplication or future disruption: roads, sanitation systems, drainage systems, power and communication lines, etc.?
- Does financial planning include adequate and sustainable resources for robust on-going O&M?
- Who is best suited to manage the system? Government? Private sector? The community? Do they have adequate human, technical and financial resources?
- What environmental and climate change implications may the new system have? A sustainable water source. Resulting wastewater treatment impacts? All recycling opportunities incorporated.

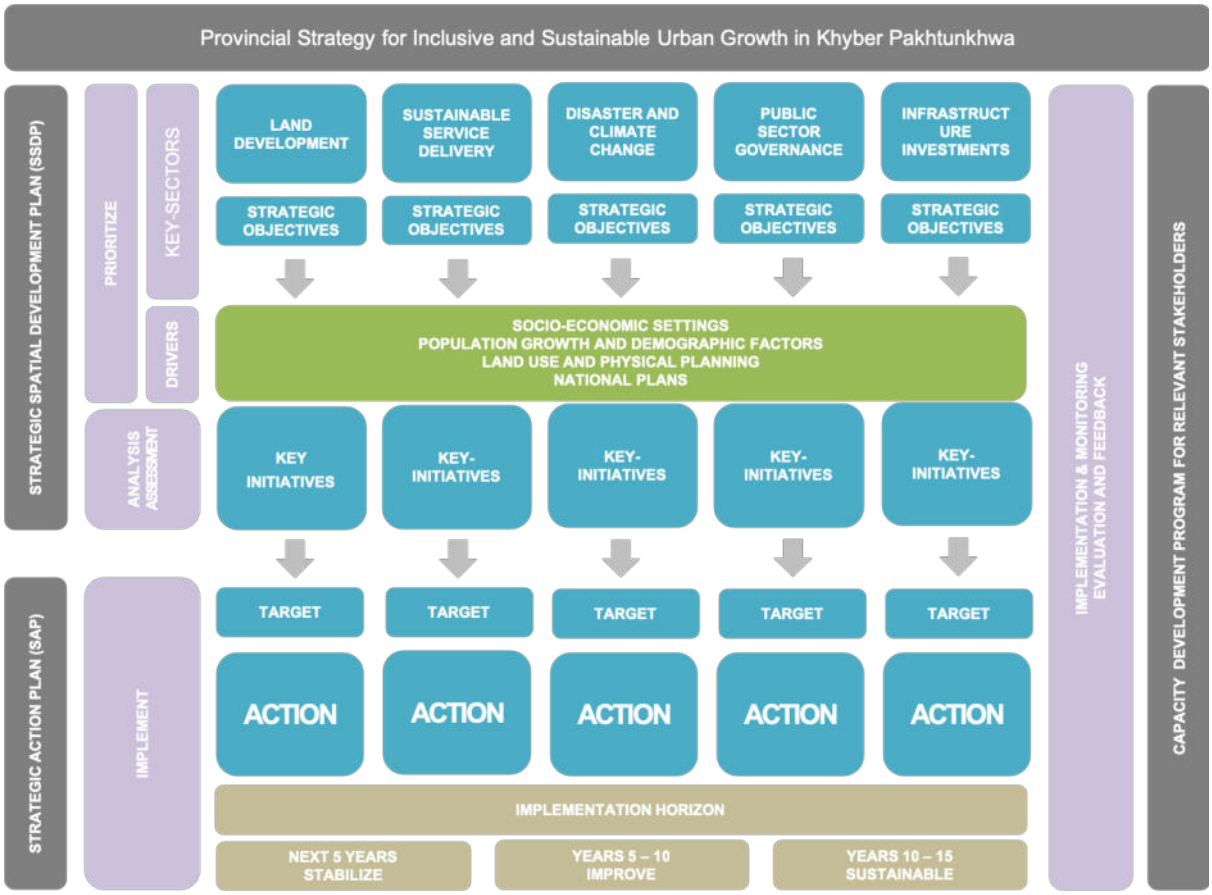
443. Figure 57 illustrates the concept of integration and notes the overall importance of institutional capacity and stakeholder participation to make it work.

Figure 57: Integrated urban development

Source: HABICO.

444. The same integration objectives can be packaged into five strategic areas that address the above objectives and ultimately contribute to the delivery of on-going urban sustainability. These five strategic considerations are summarized in Figure 58 along with the steps involved in transforming the strategies into a series of implementable Action Plans covering short, medium and long-term investment periods.

Figure 58: Conceptual framework for integrated urban sector development



445. Integration must also happen at a higher level. Traditionally, planning for urban development has been conducted at individual sector-level without consideration of the linkages and overlaps with other sectors, such as agriculture, natural resources, energy or regional connectivity. Several drivers demand a new approach based on sustainable integrated planning, including optimization with sectors beyond the traditional sphere of the urban footprint.

F.5.10. Urban Densification – Recommendations

446. Regional and District land use strategies discussed above focus on accommodating urban development while preserving productive agricultural and valued environmental lands. To achieve this, it means that urban development must minimize urban sprawl, maximize compactness and increase density. All of the reviewed Land Use Plans (2013-2033) promote increased urban densification to protect surrounding agricultural lands and improve infrastructure provision. The draft KP Land Use Plan (2013-2033)[298] is one example. It promotes densification stating that:

> *As the city's population continues to spiral upward, Urban Peshawar, already home to about 2 million people, has no choice but to build up.*
>
> *Recognizing the need for more vertical living-space to cope with increasing urbanization in the capital, the city administration and the provincial housing*

[298] Government of KP Land Use Plans for most districts produced for the period 2013-2019 with some updates.

agencies should build and also, encourage/facilitate the developers to build apartments for residents to move into them.

447. Although the quote refers to Peshawar, the strategy is equally applicable to all major urban centers in Pakistan including Mingora. Table 34 analyses land requirements if the UN density standard of 15,000 per/km^2 is applied compared to higher average future densities of 20,000 and 25,000 per/km^2. Mingora is already slightly above the UN's suggested sustainability rate of 15,000 per/km^2 but leaves scope for further densification with the introduction of higher-rise development. In all cases it is assumed the core density will be approximately twice that of outer areas. Higher densities are required for a sustainable urban future. A business-as-usual approach will not achieve the social, economic or climate-change adaptation goals desired or required. This section proposes ways of advancing beyond business-as-usual and achieving these goals through higher density development with reduced need to expand the urban footprint.

448. A similar situation is found in other major urban areas in the Swat Region. Recommendations for increased density as a principal are stated, but not reflected in future boundary recommendations and growth strategies. A continuation of business-as-usual prevails

449. KP's Urban Policy and Planning Unit (UPU) acknowledges the need for greater density and puts forward a proposal to increase residential building heights to the ground floor plus 3 additional floors to accommodate more people on a given site. This is in the right direction, but a minimal step. Provision for significantly higher residential and commercial buildings, while new in the context, will prove necessary to meet future infrastructure and land demands.

Table 34: Mingora population, land and density scenarios

Projected Population	Density Target Options per/km2	Land Required km2	Notes
2017 Population			
331,091	14,914	22	Existing in 2017
2020 Population			
369,662	11,000	34	See Notes 1 and 2
	15,000	25	See Note 3
	20,000	18	(less than existing)
	30,000	12	(less than existing)
2025 Population			
446,479	11,000	41	See Notes 1 and 2
	15,000	30	See Note 3
	20,000	22	(existing)
	30,000	15	(less than existing)
2030 Population			
542,715	11,000	49	See Notes 1 and 2
	15,000	36	See Note 3
	20,000	27	
	30,000	18	(less than existing)
2035 Population			
663,871	11,000	60	See Notes 1 and 2
	15,000	44	See Note 3
	20,000	33	
	30,000	22	
2040 Population			
817,129	11,000	74	See Notes 1 and 2
	15,000	54	See Note 3
	20,000	41	
	30,000	27	
2045 Population			
1,011,894	11,000	92	See Notes 1 and 2
	15,000	67	See Note 3
	20,000	51	
	30,000	34	

Note 1: Population Refer to Table __
Note 2: Projected target by KP to 2033
Note 3: UN urban target
Pop. data source: Population and Housing Census, 2017, GOM, BOS.

450. Table 34 shows that if the UN's target density of 15,000 per/km^2 is accepted, it will be necessary to continue expanding Mingora's urban area from the present day onwards. However, given the unique situation of Mingora's surrounding topography and immediate land use competition with the very limited amount of prime agricultural land in the Region, the case

can made for promoting significantly increased densification. It is acknowledged that the current situation of unplanned sprawl beyond existing boundaries may require some adjustment to incorporate selected sprawl areas in order to provide urban services and collect necessary taxes and user fees. At the same time, a significant cultural mind-set shift is required to accept a rapid transition from existing urban form to a more hi-rise oriented one. Moves towards higher-density and restrained urban sprawl are essential. Increased density can be achieved through urban redevelopment, including high-density TOD developments, infill, land-pooling or land sharing. Each is discussed below but all require the political will and institutional capacities and commitment to implement. These also all represent changes to the historic “business-as-usual” approach and therefore must be accompanied by robust public communication and participation programs to manage a mind-set shift. Taxation regimes and accompanying investment incentives are also useful tools to achieve the objectives. Underlying all innovations must be a demand-driven market to encourage new development. A government mandated supply-driven approach attempting to change the face of the city without an actual social and economic demand will fail. To support private sector investment in any of these densification approaches requires accompanying government investments in upgraded infrastructure to ensure the extra capacities are available. An efficient and transparent land market is also required so that property transactions and registrations can happen smoothly. Equally efficient, consistent and transparent development approval processes are also essential to not discourage investment.

451. **Redevelopment**: this simply refers to redeveloping poor condition or under-developed properties. Assuming there is a market demand, redevelopment can be encouraged through a robust property tax system. Lands are taxed at their development potential according to the applicable land use bylaws, not according to the actually existing improvements on the property. Therefore, a low-density, poor quality and low-revenue property will have difficulty paying the tax and must either redevelop or sell to someone who can. This increases density, increases taxation to the local government and lowers per-capita infrastructure costs. Redevelopment and infill as discussed below should both be aimed at increasing urban density for the reasons discussed above. With this comes the opportunity for compact mixed-use developments with a combination of residential, commercial, recreation, cultural, public green space and a finer network of motorized and non-motorized mobility options.

452. Lower-income, informally developed areas can be redeveloped through establishment of special interest zones as discussed above. Expanding Pakistan’s designation of ‘katchi abadi’ zones with formally allocated annual budgets for upgrading and redevelopment would lay the groundwork for further private sector investment in these areas. Successful global examples exist of similar initiatives including Brazil’s “PRECEIS” program piloted in a number of cities which did exactly this with 2% of annual urban budgets dedicated to infrastructure, social and economic amenities, and environmental improvement.

453. **Infill Development**: refers to developing undeveloped lots within a built-up area. This can be undertaken as a private sector investment in residential, commercial or other revenue-generating development, or by the public sector as an open green space to enhance neighborhood livability while contributing to climate change adaptation efforts. In the case of private sector development, this can again be encouraged through a robust property tax system which essentially penalizes people for allowing serviced land to remain undeveloped. Figure 59 illustrates infill densification converting some inner-city agricultural parcels to high-density development thereby helping conserve more valuable out-lying agricultural lands. Transit-Oriented Development (TOD) is one approach supported by the Government of KP for densification and transport improvements in all of its draft Land Use Plans (2013-2033). Figure

60 illustrates a conceptual example of urban densification in Swat using a (TOD) approach developing multi-use, higher-density centers around main transit hubs. Integrated into these is a combination of residential, commercial, recreation, cultural, public green space and a finer network of motorized and non-motorized mobility options.

Figure 59: Example of urban densification and infill

454. **Land Pooling:** land pooling may be used in very low-density areas lacking infrastructure and with significant undeveloped open space. This will typically be useful in more peri-urban contexts and can help reduce sprawl. All property owners agree to pool their lands which are then re-planned to create space for new infrastructure. Existing residents remain where they are with no resettlement, but with the new infrastructure, sub-division of lands accompanied by new infill development becomes more economically attractive. The original landowners gain infrastructure and revenue from property sales. Again, all of the necessary institutional instruments must be in place and operational. Property tax will again be a motivator.

455. **Land sharing:** this process may be applied in higher-density, informally settled areas, often inner-city where there is a demand for higher-density development, but the desire to avoid significant involuntary resettlement. A parcel of settled land may be purchased in cooperation with the sitting residents and through a participatory process a minority portion of the land is cleared for high-density redevelopment leaving the majority of residents in place. The displaced minority may then be accommodated either within the new development if appropriately designed or resettled nearby in a fully fair and transparent process. This allows

a developer to locate where the market is, increases local government taxation, increases overall density and if a mixed-used development may also create local employment opportunities. Local government may offer development incentives in the form of increased allowable floor-area ratios to off-set the limited site footprint being developed.

Figure 60: Example of urban densification and TOD

F.5.11. Competitiveness

456. It goes without saying that for an urban area to become a regional or national leader it must be competitive. It must offer those qualities that an investor and potential employees want. It is the role of local government with appropriate higher government support to create that condition. An urban area must be livable for both investors and the human resources it needs to attract and retain. This includes many elements such as a clean, green environment, a safe environment, well developed, reliable, maintained and affordable infrastructure and services, and social amenities including education, health, recreation and cultural. The city must be well connected to both raw materials and markets. Governance, including development application, approval and control procedures must be in place, known, transparent, consistent, and operating efficiently. The land market and related transaction and registration processes must also function efficiently and transparently. Investors and residents normally do not mind paying property taxes and user fees if they are receiving the services they are paying for. Taxation is essential if a local government is to maintain all the elements required to be livable.

G. REGIONAL PHYSICAL CONNECTIVITY

G.1. Regional Connectivity

457. Swat is a distinguished northern region of the Khyber Pakhtunkhwa province located on north side of Peshawar Valley and lying on Northwestern corner of Pakistan. It is accessible through M-1 from Karnal Sher Khan Interchange in Nowshera District of KP and also from GT Road at Nowshera city through N- 45 leading to Mardan City followed by Chakdara for connection to Swat through -95 (Chakdara-Mingora - Kalam Road). Swat is also accessible through famed silk route of Karakoram Highway from Behsham to Khwazakhela via Shangla Top. A few more routes are available from Dir and Bunner sides as well.

458. The region comprises of narrow winding valleys within enclave of high-rise hills and mountains of Swat. Mingora, the capital of the region, placed closer to south end of region and closely sited ribbon shaped series of settlements along Swat River are emerging as a complex urban agglomeration. With some exceptions of high-level hill/mountain stations like, Tall, Shahdrai, Fazal Banda, Shangla Top, Top Seen, Malam Jabba, Chinar Bagh, Pareena and Kalaid Kandro most of settlements are located along the banks of River Swat and its tributaries deep in the valley. Along Swat river, settlements of Barikot, Mingora, Mangalore, Chahar Bagh, Khwazakhela, Matta, Chakdara, Baidar, Bazkhela, Kala Kot, Bagh Dheri, Bacha Abad, Dama Lai, Madyan, Behrain, Mankyal Kalan, Matlitan and so many others are located on both sides along mainstream of Swat River. Whereas Chamtali, Behr, Shakand, Azim Abad, Seer, Shinkand, Jukhtai, Khair Abad, Utrar, Shangwati, Shakh Dara, Chuperyal, Aghand, Koz, Shansar, Carsamai, and Kal kaley are located along various tributaries of Swat River.

459. Having limited space around for urban extensions current settlements within the valley has witnessed abnormal growth and congestion of mass scale on account of high potential of tourism industry and partially due to migration; as a consequential impact of disturbance on western borders of the country. Resultantly abnormal urban/rural sprawl has taken place all along roads running along river streams and sub-valleys. As such the settlements developed so, are experiencing growing pressure on utilities and transport infrastructure and services. Irregular population growth of closely located settlements is causing long conurbation along the available road corridors linking neighboring regions and rest of the country in the south.

460. Further on account of recently developed Phase-1 of Swat Expressway up to Chakdara; outside the limit of Swat Region, and its further planned extension to Fatehpur within Swat Area would no doubt facilitate quick access to Swat but it is likely to cause massive congestion on existing road network in the valley. Speedy delivery of mass volume of traffic on already congested network would further complicate the travel distribution and management issue. Therefore, there are two main challenges of urban and rural settlements control mechanism and road congestion as a result of greater emphasis on Tourism industry and likely growth of congestion thereof. Swat is likely to experience massive agglomeration during coming decades. Growing tourism industry and huge potential for its expansion is far beyond the capacity of available infrastructure and organizational capacity to handle the challenges. The development initiatives; no doubt shall bring expanded business activities, but resultant urbanization process, growing congestion and consequential environmental degradation shall remain challenge for times to come.

G.1.1. Road Network Resources

461. Having population of 2.55 million, Swat region is linked through metaled road network of 974.351 km. It constitutes route length of 127 km of N-95, and 30 km of N- 90, 58.20 km of provincial highways and 346.90 km of rural access roads. Area of region being 5,337 Sq.km, Road density of Swat is 0.1825. Swat road density is low as compared to Provincial figure of 0.300 and 0.320 for Pakistan, simply because Swat being a mountainous region, population mostly remain concentrated within narrow valleys resulting limited number of roads that could be developed and consequential road congestion on available network. Road network coverage, through standard width of rural access roads is significantly low.

G.1.1.1. Road Network Connectivity

462. Mingora city together with neighboring settlements of Kabal, Saidu Sharif, Derai, Bara Banda, Manglor, Chaharbagh, Shakdara, and Mingola and large-scale growing conurbation along N-95 and surrounding links, together with sparsely populated rural settlements in the surroundings would ultimately form Greater Mingora. To ensure economic growth and equitable access to region resources and social services, sustainable physical connectivity is essential amongst above stated settlement entities within and beyond regional boundaries. Quality of physical connectivity focuses precisely on the physical network of corridors through which the mobility of resources flows every day. The main components that reflect the effectiveness of this road network is the coverage required to support the daily traffic generated by the needs of the inhabitants, as well as the quality offered through infrastructure to accomplish safer and more efficient service connections.

463. N-95 and N-90 are two primary corridors that link the region with surrounding regions and the countryside beyond. N-95 originates from Chakdara town; located in Malakand district, just outside Swat Region, for its destination to Kalam through the region is considered the backbone of both regional and inter-regional connectivity to middle and southern parts of Khyber Pakhtunkhwa province. From Chakdara; connectivity to central regions of KP is consolidated through N-45 for its connection with N-5 (historic Gt Road) and Phase-1 of Swat Expressway that links with M-1 through Kernal Sher Khan Interchange. Connectivity with western region of upper Dir is facilitated through Kalam Utrar Road falling in the highlands of the region in the north. N-90 originating from Khwazakhela for Behsham located on KKH provides inter regional connectivity from middle of Swat region with Shangla, Kohistan, Batagram and Abbottabad regions of KP. N-95 through N-45 and N-5 provide connectivity with international border crossing point (BCP) of Torkham for Afghanistan on west side and Islamabad, Lahore and BCR Wagha for India. Whereas; N-90 links KKH at Behsham for connectivity to BCP at Khunjerab for China in the North and M-1 and N-5 for connection to Islamabad and Karachi/Gwadar ports in the south.

464. Madyan Matta Chakdara Highway also controlled by Provincial Highway Department, runs parallel to N-95 on right side of Swat River. It is an important inter regional route providing connectivity of freight and travelers through less congested route to Swat Valley**.** Kalam Dir Highway provide connectivity of upper areas of Swat Region with upper Dir and Chitral accessible to border crossing point **of Arundu** to Afghanistan**.** Apart Barikot Sowari Road, Mingora-Sultanwas Sowari Road, Kabal Gulabad Road, and Tatano Toormang Road are inter-regional routes as all provide inter-regional connectivity of Swat with Malakand and lower Dir Region. But, in spite of the physical connectivity all these four roads pass through hilly and mountainous ranges traversing high altitudes, therefore, their character is more or less of rural access roads and therefor least traffic is observed for inter- regional mobility.

Table 35: Inter-regional Highways of Swat Region

S. #	Name of the Road	Total Road Length (km)	Road Length within Swat (km)
1.	N-95 (Chakdara – Kalam)	135.0	127.0
2.	Madyan-Matta- Chakdara	88.3	83.1
3.	N-90 (Khwazakhela- Behsham)	64.0	27.6
4.	Kalam- Dir	110.0	41.7
5.	Barikot- Sowari	49.40	14.0
6.	Mingora - Sultanwas - Sowari	51.0	22.8
7.	Kabal – Gulabad (at N-45)	38.3	18.1
8.	Tatano Bandai - Toormang (at N-45)	38.7	16.6

Source: Consultant's GIS-based calculations

G.1.1.2. Region's Road Network Assessment

465. Current level of road connectivity of Swat Region is described above. This section defines the assessment of Individual roads available in the region, identification of gaps in the performance and how best the road network connectivity can be enhanced to accomplish better mobility across the region and beyond.

G.1.1.2.1 Swat Expressway

466. Recently inaugurated Phase-1 of Swat Expressway originating from M-1 at Kernal Sher Khan interchange falling in Peshawar Region and terminating at Chakdara Town located in Malakand District is the most convenient approach route for Swat Region. Swat Expressway is an access controlled four-lane divided highway with facility of hard shoulders. Portion of Phase-I falling in mountainous area is under construction. A couple of tunnels stand constructed, but approach length from Mardan side is being constructed. Second stage of Swat Expressway is planned to be constructed from Chakdara to northern parts of the swat district mostly on top of hills but parallel to N-95. Phase-1 of expressway has no doubt provided convenience and time savings to travelers from M-1 to Chakdara but it has also resulted in congestion on N-95 on account of large influx of traffic accumulating on capacity restrained N-95. So far feasibility of expressway is not accessible, it seems difficult to comment on suitability of 2nd phase of the Expressway. Nevertheless, provision of second phase may not assist in reducing the road congestion but is likely to result in accelerated growth in congestion and environmental degradation on account of relatively better handling capacity of expressway and resultant speedy traffic delivery into capacity restrained road network of mountainous regime. Therefore, it is essential to revisit the feasibility of Phase II not just from buildability point of view but from operational perspective and specific consideration for alleviating overcrowding and increased carbon footprint as result of vehicle crowding on capacity restrained road network.

G.1.1.2.2 National Highway (N-95)

467. N-95 starts from Chakdara falling on N-45 in Malakand District. It is the primary route that provides connectivity to Swat with Peshawar, rest of the provincial regions and the country as a whole. Road length of N-95 from Chakdara to Kalam is 135 KM, whereas within the regional boundary, it is 127 km long. N-5 is a two-lane (7.32 m) single carriageway road having 1.8-meter shoulders on both sides with right of way of 18.29 meters. However, right of way and lane widths decrease as the valley start becoming narrower. In Madyan city right of way

is 10.67 meter. Highway from Madyan to Kalam have average right of way of 10.67 meters and travel way of 6.10 meters. Surface quality of the road is quite good, however, sign postings, and road markings are lacking. At many places narrow bridges still exist that create road bottlenecks and need to replace with widened bridge structures. At some other places, temporary equipment bridges are installed, where old bridge structures stand eroded during recent floods. Same needs to be replaced with new bridge structures to enable free flow of traffic on damaged road section. In the last reaches between Madyan to Kalam, road pavement is recently built and lot of bridge sites are under construction process. As soon as the road enters the Swat region, it is flanked with uncontrolled commercial development and remains usually blocked on account of linear conurbation and commercial activity all along the road right up to Khwazakhela town. It looks as if; with exception of a few green patches, almost half the road length is urban in character and liable to blockades and congestion. National Highways and Motorways Police is operating on motorways and other important National Highways but not operating on this important route. Local police is well placed and mostly visible in Mingora city only but least posted on regular basis on any section of the highway. Therefore, traffic enforcement within the capital city of the Mingora is quite visible but remains totally absent on highways and rural access roads.

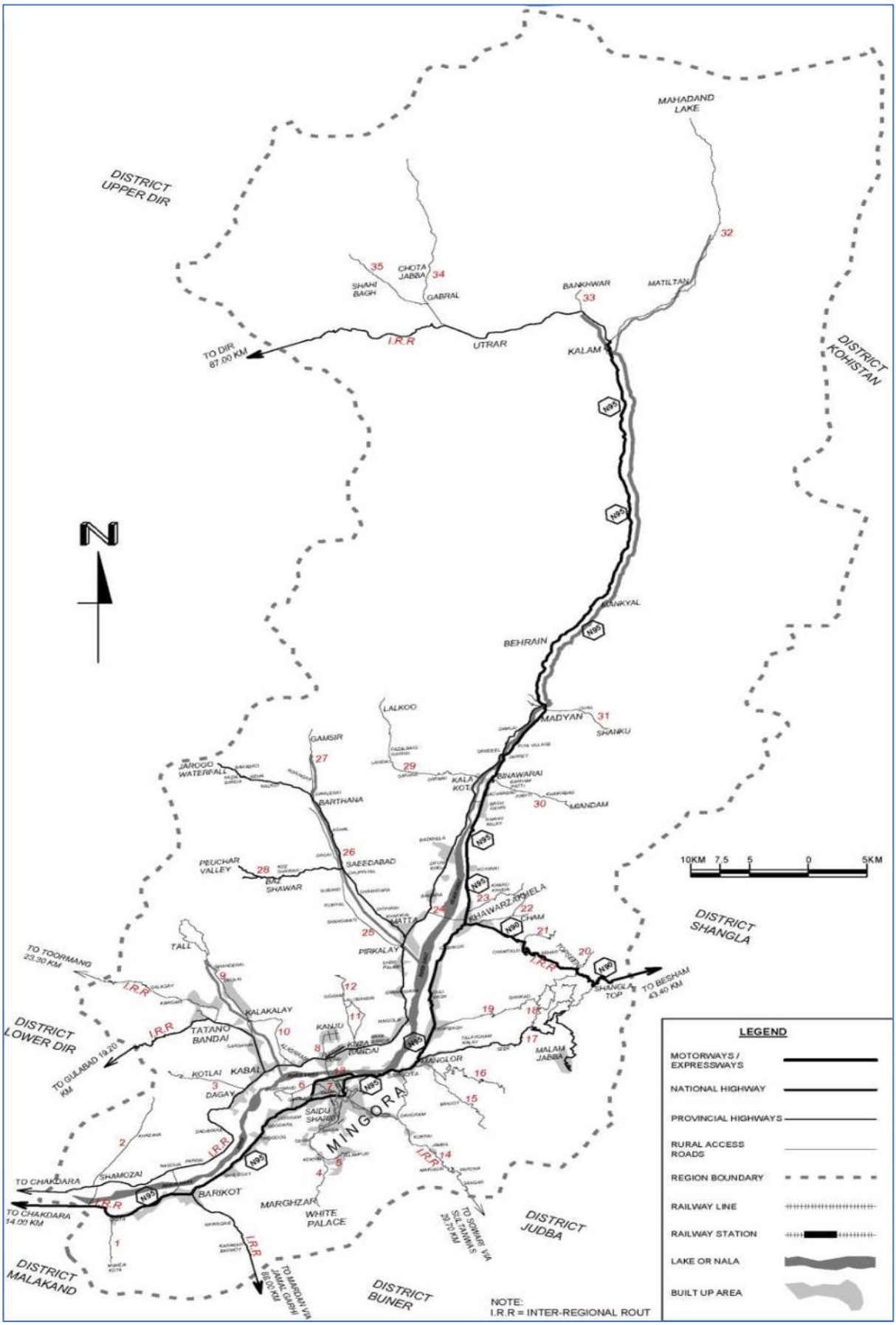
G.1.1.2.3 National Highway (N-90)

468. N-90 starts from settlement of Khwazakhela situated at a distance of 30 Km from Mingora on its north. Passing through the picturesque mountains of Shangla top and Alpuri, the road connects with Behsham city at a distance of 64 km, later falling on KKH in Shangla District. It is a two lanes single carriageway without the provision of hard shoulders with right of way of 18 meters. It experiences congestion within city limits of Khwazakhela on account of uncontrolled roadside retail commercial activity. Since the road connects scenic mountainous places and important CPEC route, it remains fairly busy. However, safety conditions on the road are poor on account of frequent sharp turns; least equipped with guard rails, requisite signage/ road surface markings and treatments against the roadway departures. No bus service is observed operating on this road, however specifically hired mini -bus coaches are witnessed. Local freight traffic is operating on this route. Concrete safety barriers, installed on river sides are far below any standard, therefore, need to be replaced with standardized guard rails or kerb barriers as part of counter measures program against rural roadway departures. An important inter-regional route needs upgradation through realigning some of its critical sections and improvement of road safety conditions instead of replacing through proposed E-90 Expressway, as planned by National Highway Authority.

G.1.1.2.4 Madyan Chakdara Road via Matta and Kabal

469. Route length of 88.3 km long Chakdara Madyan through Matta is an inter -regional provincial highway running on right side of Swat River. Section of this highway is also known as Airport Road in the suburbs of Mingora. It is two lanes single carriageway asphalted road, flanked with 1.22-meter concrete shoulders. Its carriageway width is 7.32 meters and its right of way varying between 13.72m to 20.12m. The road remains busy within the urban settlement accommodating Saidu Sharif Airport and within limits of other main settlements like Matta, Kabal and others. N-95 being too busy Madyan Chakdara is the preferred route for freight traffic. Its road surface/ pavement condition within exception of few patches is excellent. Being less trafficked road, it is preferred route for commuters. However, like other roads it does not accommodate any pedestrian facility as it passes through urbanized settlements.

Map 18: Swat region road network



G.1.1.2.5 Malam Jabba Road

470. The road leading to skying resort of Malam Jabba located on mountain top originates from Manglore, a suburb of Mingora falling on N-95 at a distance of 9 Km from the city center. It is newly built two lanes road flanked with paved shoulders and right of way of 14.5 meters. It is well marked and provided with sign postings on important road turns. Most of bridge sites are under construction process; however, road is in operation through installing temporary bridge structures. Being a mountainous road, concrete kerb installed on outer valley side are bellow standard and unsafe. Being an important and busy route during skying season, entire road length needs to be reviewed through a conduct of safety assessment, identification of likely roadway departure sites and preparation of a comprehensive mass action program of countermeasures against the roadway departures.

G.1.1.2.6 Kalam Dir Highway

471. Kalam Dir Highway provides connectivity of Swat to famous tourist destination of Kumrat Valley, Upper Dir, Chitral Regions up to BCP of Arundu for Afghanistan. The road is in poor condition and closed for light traffic as taken up by KPHA for its upgrading and reconstruction. It is being built as two lanes single carriageway width of 6.10 meters and additional width of 1.22 meter on both sides for concrete paved shoulders. As discussed with Subdivisional Officer of the Department, the road shall provide for all required road safety appliances but not standardized roadside barriers and concrete kerb, on the identifiable spots of roadway departures. Being an important route, it is suggested to carry out the road safety audit of the proposed road design and improve upon the road safety provisions accordingly.

G.1.1.2.7 Kabal-Tatano Bandai-Gulabad Road

472. Technically Kabal-Tatano-Bandai road is an inter-regional road connecting Kabal area; a suburb of Mingora lying on Madyan-Matta- Chakdara Road, with Chakdara on N-45 in Malakand District. Passing through hill tops, practically it is a rural access road by all means. The road's ROW varies between 9.14 to 16.76 meters Its carriageway width varying between 4.27m to 6.10m. Its two lanes wide road with varying width of 2.13m to 3.05m and paved shoulder width of 1.20m on both sides. Pavement condition is good between Kabal to Tatano Bandai, road improvement is in process between Tatano Bandai to District Dir boundary between Swat and Dir on hilltop. The old sections of the road are devoid of superelevation, signage, guardrails and /or roadside kerb barriers for safety of vehicles at sharp curved road sections.

G.1.1.2.8 Other Regional Roads

473. Apart from interregional routes as explained above, and host of rural link roads and tracks, following are some important road links that serve the region.

Table 36: Other regional roads

S. #	Road Name	Connecting Destinations	Route Length (km)
1	Thalang-Chorkhai Road	Kota(N-95), Manzai Kota	8.10
2	Shamozai-Khazana Road	Shamozai, Khazana	11.30
3	Dagay-Kotlai	Dagay (Shamozai Road)-Kotlai	9.00
4	Saidu sharif-Marghazar Road	Saidu sharif, Marghazar	14.20
5	Islampur Road	Kokrai (Marghazar Road), Islampur	2.70

S. #	Road Name	Connecting Destinations	Route Length (km)
6	Takhtband Bypass Road	Takhtband bypass, Takhtband 2	3.20
7	Banr Tahirabad Road	Banr, Tahirabad	2.40
8	Mingora Kanju Road	Mingora, Kanju	8.30
9	Shahderai Road	Kala Kalay, Tall	16.30
10	Maloch Road	Kala Kalay, Aligrama	8.80
11	Lalobandai-Jatkot Road	Kuza Bandai, Lalo Bandai	5.90
12	Sigram Road	Kuza Bandai, Sigram	9.80
13	Mingora Bypass	Mingora City	5.60
14	Sangota-Dangram Road	Sangota (N-95), Dangram	7.60
15	Manglor Banjot Road	Manglor, Banjot	11.70
16	Manglor-Towards East	Manglor, out post	18.40
17	Manglor-Malam Jabba Road	Manglor, Malam Jabba	30.60
18	Shinkad-Top Seen Road	Malam Jabba Road, Shinkad-Topseen	13.50
19	Char Bagh Shinkad Road	Char Bagh at N-95, Shinkad	13.00
20	Topseen-towards North	Topseen, Outer Village	3.00
21	Chamtalai-Batkela Road	Chamtali, Batkela	2.10
22	Cham Road	Khwaza Khela, Cham	9.20
23	Khwaza Khela Dab Road 91	Khwaza Khela, Dab-91	8.60
24	Khwazakhela Matta Road	Khwazakhela, Matta	1.00
25	Gurrah Road / Jamal-ud-din Khan Shaheed Road	Peer Kalay, Barthana	19.30
26	Fazal Banda Road	Matta, Jarogo Valley Waterfall	29.60
27	Gamsir Road	Gwalerai, Gamsir	6.30
28	Gat Road	Saeedabad, Peuchar Valley	15.10
29	Bagh Deri Road	Kala Kot, Lalkoo	17.60
30	Miandam Road	Binawrai, Miandam	8.90
31	Chail Road	Madyan, Shanku	6.80
32	Ushu Road	Kalam, Maha Dand Lake	34.10
33	Bankhwar Road	Kalam Dir Road, Bankhwar	2.80
34	Gabral Road	Kalam Dir Road, Gabral Valley Road	19.80
35	Gabral-Shahi Bagh Road	Gabral, Shahi Bagh	9.80

G.1.2. Connectivity through Railways and Air Travel

474. Swat region has no railways within its territory; however, it is connected with nearest station of Dargai located between Chakdara and Mardan; an hour's drive from Mingora. As of today, nearest station of functioning railways is Nowshera Junction located on ML-1 in Peshawar Region. It is around two hour's drive from Mingora city.

475. Swat has its own airport in the name of Saidu Sharif Airport situated between villages of Dharai and Kanju situated across the Swat river opposite Mingora city. It handles only two domestic flights for Peshawar and Islamabad. For international flights Swat relies on Peshawar

and Islamabad international airports which stand connected through N-95, through N-45 and N-5 and Swat Expressway and M-1.

G.1.3. Interregional Connectivity

476. Swat Region is connected with surrounding regions, provinces and territories through following road links:

- National Highway N-95, running close, and mostly along left side of Swat River from Chakdara town of Malakand District connects all major settlements of the region including Mingora, Khwaza Khela, Madyan, Behrain and Kalam. Between Madyan and Behrain N-95 remains on east side of the river. On the south, N-95 connects with N-45 at Chakdara that further links with Dir and Chitral regions in the north-western direction. From Mirkhani on way to Chitral, N-45 is connected; through Chitral Jalalabad Road to a border crossing point at Arundu for Afghanistan. On south-east side, N-45 links to cities of Mardan and later to Nowshera on N-5. N-5 provides connectivity to Peshawar and further to border crossing point with Afghanistan at Torkham. On eastern side N-5 leads to Islamabad; the capital city and Lahore for Border Crossing point at Wagha for India and Karachi in the south-west for port facility. At Chakdara' N-95 is also linked to M-1; through Swat Expressway providing connectivity through all parts of the country.

- Parallel to N-95 on west side of Swat River runs a provincial Highway complementing, north -south regional connectivity through Madyan Matta Chakdara Road. Compared to N-95 road is lightly trafficked hence favorite route of freight traffic.

- National Highway N-90 initiating from Khwazakhela facilitates Swat connectivity to KKH(N-35) at Behsham for further connectivity to border crossing point with China at Khunjerab Pass in the north and Abbottabad and rest of the country towards south.

- Road from Kalam to Utrar leading to Sheringal in Upper Dir Region connects with N-45 at Dir for connection to Chitral in the north-west and Chakdara in South East.

- Apart from above there are a few other routes to provide inter regional connectivity. Since all such routes pass through mountain passes at significant heights, role of such roads remains more of rural access roads. Such category of roads includes Mingora Sowari Mardan Road connecting district Judba, Bunner and Mardan, Barikot Jamal Ghari Mardan Road connecting Swat with Bunner and Mardan Districts, Kabal Gulabad Road for connectivity with N-45 in Lower Dir, and Kabal Tatano Bandhai Toormang Road connecting N-45 in Lower Dir.

- An additional Expressway is planned to be developed by National Highway Authority to connect Khwazakhela with Behsham as an alternate route to N-90.

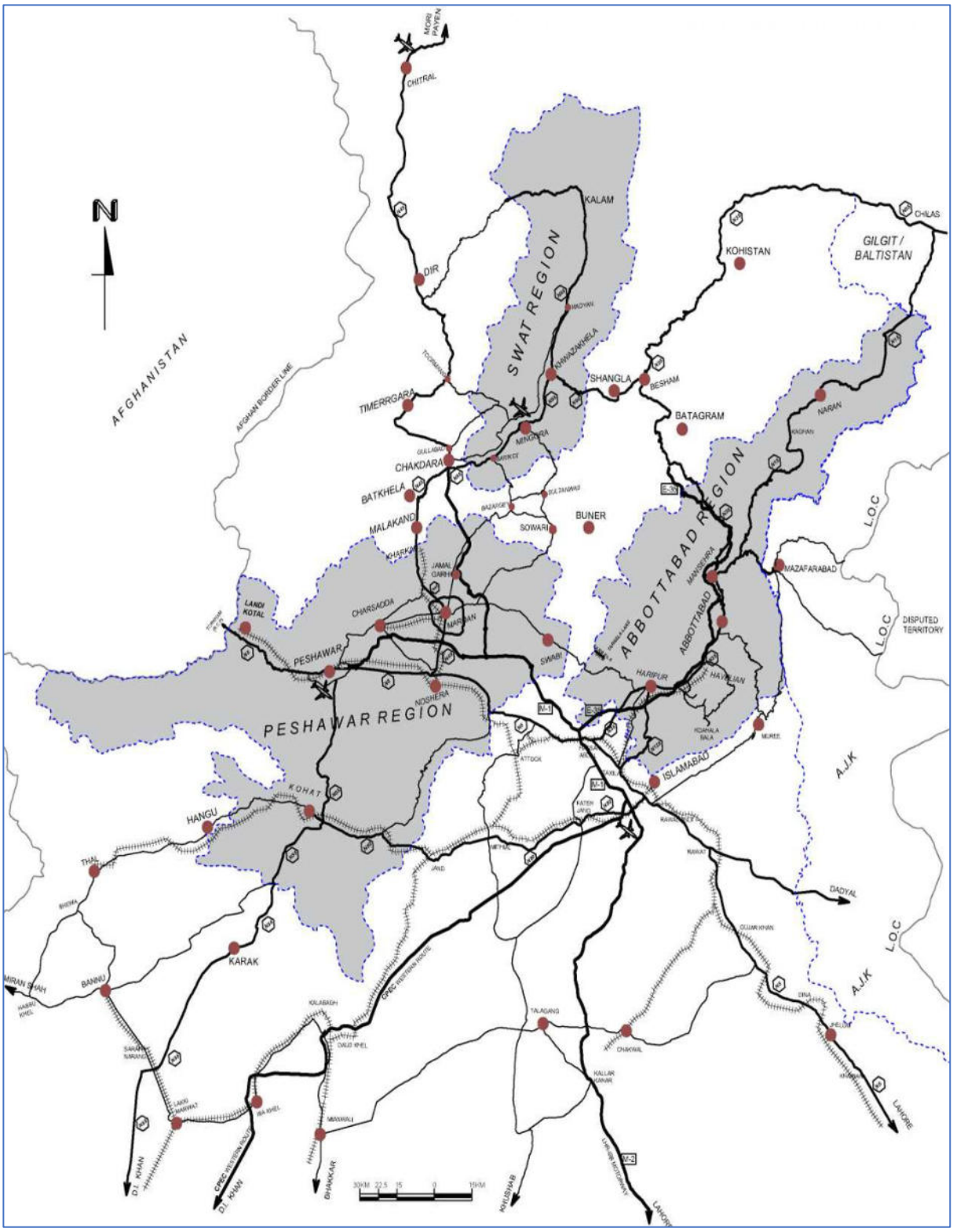
- There is another planned proposal from KP Provincial Government to construct 4 lanes divided expressway from Chakdara to Mingora via Shamozai (right side of the river). Proposed 40 km expressway shall supplement N-95 and Chakdara Shamozai Kabal Mingora section of Chakdara Matta Madyan Highway.

G.1.3.1. Connectivity with CPEC and CAREC

477. N-90 originating from Khwaza Khela town of central area of Swat is connected with CPEC at Behsham on KKH and CAREC financed part of E-35. Whereas N-95 is connected

with KPEC (Khyber Pass Economic Corridor) through Swat Expressway and M-1 at Peshawar for BCP at Torkham intended for destinations of Kabul and Central Asian States.

Map 19: Inter-regional surface and air connectivity



G.1.4. Registered Motor vehicles in the Region

478. As per 2017 Development Statistics, the Swat has 50,932 registered motor vehicles in the region. Motorcycles/ Scooters are dominant with population of 31 percent of overall district figure. Whereas private car/ Jeep is 20.17 percent of the total registered motor vehicles. Three-wheeler rickshaw is 12.39 percent of total vehicles as compared to 0.02 percent of motor cabs/ taxis. Number of vehicles registered with Excise and Taxation Department is not comparable with vehicles operating within the district boundary of Swat as lot many vehicles are operating without registration.

Table 37: Registered motor vehicles in Swat district (2017)

Khyber Pakhtunkhwa	M/Cycle/Scooter	Car/ Jeep	Tractor	Bus / Minibus	Taxi	Rickshaw	Wagon	Truck	Other	Total
Swat	15,793	10,276	2,424	1,140	9	6,309	4,806	3,702	6,473	50,932
Percentage share within district	31.01%	20.18%	4.76%	2.24%	0.02%	12.39%	9.44%	7.27%	12.71%	100.00%
KP	873,755	197,221	49,101	47,016	1,861	69,398	90,131	57,638	298,775	1,684,896
Percentage share in KP	1.81%	5.21%	4.94%	2.42%	0.48%	9.09%	5.33%	6.42%	2.17%	3.02%

Source: KP Development Statistics 2019.

G.1.5. Region's Mobility Challenges and Drivers of Change

479. Most important challenges of Swat region are its enormous potential for tourism, its location, topography and its formation, consequential settlement's growth in valleys and limited capacity road links experiencing growing road congestion within and around the urban settlements and region's network during peak tourist seasons. Both N-95, together with parallel route of Chakdara Madyan(S-3B) and to lesser extent N-90 highways are the backbone of regional mobility. Since the region lies in neighborhood of CPEC route linking northern areas of Pakistan and Khunjerab Pass border crossing to China, it is expected for N-90 to start experiencing congestion through the year around, but more severely during summers when tourists visit the valley in masses. As the CPEC gets operational, road congestion is likely to become more alarming.

480. Recently inaugurated Swat Expressway has no doubt resulted in travel time savings and convenient accessibility to the region but on the other hand it has multiplied the road congestion on already problematic N-95 on account of process of swift delivery of traffic from the Expressway at Chakdara. Resultantly it, keeps it extremely busy form its start at Chakdara to the settlement of Khwazakhela situated in the middle of the region. Roads to Malam Jabba and link to upper Dir from Kalam are also experiencing congestion partly because of road capacity issue and more importantly there is absolutely no control on private vehicles ownership. Road from Kalam to Dir is under construction whereas link from Kalam to Maha Dando Lake is yet to be paved. Fastly growing vehicle ownership coupled with rising tourists' traffic is contributing towards road congestion, mounting vehicle emissions, escalating carbon footprint and consequential environmental degradation are key issues associated with Swat region.

481. KP government has also planned to construct Phase II of 79 Km long Swat Expressway from Chakdara to the north to terminate at Fatehpur. Proposed alignment is proposed to be running on higher altitudes on mountain tops as compared to N-95 and S.3B running down through the valley. Proposed Phase II shall no doubt spread the traffic and result in lowering the road congestion from the main access to the Swat, but congestion issue is likely to be simply transferred from access road (Swat Expressway phase ii) to the regional distributors. Problem is likely to continue acerbating unless usage of public transport as a major means of access to swat is not adopted and usage of private cars is not controlled. Construction of Phase II of the Expressway and growing car ownership in the region and lack of any sustainable policy on tourism traffic would result in high degree of road congestion and environmental degradation at the expense of natural beauty of the region.

482. Higher degree of individual car ownership is on account of non-application of custom duty on all imported vehicles for Swat residents. Therefore, all types of vehicle brands from abroad are available at much cheaper rates as compared to any other district of KP or any other part of the country. Any move to discourage the use of private car would require an appropriate strategy other than the levy of custom/ import duty. That may include road pricing, strict controls; through declaring areas banned for parking and heavily charged parking wherever deemed feasible.

483. Answer to the above-mentioned issue lies in discouraging the use of private cars, diesel operated vehicles, and encouraging usage of electric operated, public transport buses and individual vehicles on main routes and shared services journeys to higher altitudes and remote valleys. Such a policy decision has to be part of the Region's Mobility Strategy and Tourism Policy. For local population private vehicle usage need to be gradually replaced

through electric operated fleets. Regular bus operations are suggested on Chakdara-Kalam, Kalam – Dir and Khwazakhela routes with connected shared mobility services to rural destinations. Government in collaboration of private concerns need to invest in alternate energy sources; preferably hydro, wind and solar and provision of frequent charging points all along highways and adequately placed tourism spots and rural communities.

484. Roadside linear conurbations on highways need to be strictly controlled through exercise of development control mechanisms and roadside parking within urban limits to be checked and heavily charged to avoid road congestion. On Highways access management need to be exercised on all major urban settlements through capacity enhancement of local authorities and administrative reforms to improve urban governance.

485. Swat region is largely mountainous and most of region's road network follows the rout alignments along streams and mountain sides with winding configurations facing roadway departures and high speeds on newly built roads. Any counter measures to overcome this issue and relevant road safety applications are generally lacking throughout the road network. In nutshell road network and system as a whole is safety deficient requiring serious efforts to make it safe through safe system approach.

G.1.5.1. Articulating Regional Mobility Strategy (RMS)

486. Recognizing the opportunity and responsibility to improve movement of people and goods and in particular mobility enhancement during tourism seasons within the Swat Region, the office of the Deputy Commissioner, Swat is proposed to be initiating the Regional Mobility Strategy (RMS), essentially required to understand the opportunities and implications associated with future major transportation and community investments, and to prioritize those investments. Changing views, needs, and expectations for greater neighborhood and regional connectivity and livability are motivating communities to re-examine traditional and innovative transportation solutions. Since the Deputy Commissioner office is least staffed to deal with technical matters, it is more appropriate for the provincial Transport Department to post the representative of Directorate of Transport called Secretary District Regional Transport Authority (DRTA) as per law, under the direct supervision of the Deputy Commissioner office for coordinating all transport related activities at regional level.

G.1.5.1.1 Purpose of the Strategy

487. Provincial Department of Transport funded and stakeholder driven, RMS is suggested to focus on improving project design with multimodal solutions that contribute to both transportation mobility and economic vitality for the residents of the Swat Region. RMS will identify opportunities that provide a path forward for decision making, design and funding prioritization for projects that will promote economic development in the region. It will evaluate infrastructure, policy, and technology opportunities at the regional level. It shall also address the road congestion during peak periods of tourism industry.

G.1.5.1.2 Expected Outcomes

488. RMS is suggested to evaluate infrastructure, policy, and technology opportunities at the regional level that would:

- Decrease travel times
- Increase connectivity

- Decrease road congestion
- Improve level of service
- Increase network reliability and job opportunities
- Provide additional modal opportunities
- Decrease emission levels and carbon footprint
- Preserve community character, cohesion and quality of life
- Identify projects for funding and implementation
- Promote economic development opportunities.

G.1.5.2. Establishing Transit Route from Chakdara to Kalam

489. Apart from controlling urban sprawl happening all along N-95 and parallel route of Chakdara Matta Madyan Road, it is high time for capacity enhancement of the corridor. Addition of Swat Expressway has no doubt provided a relief, however, sever congestion is noticeable on N-95; from its entry point in Swat to Khwazakhela town; current limit of urban conurbation along the highway. To serve the area more effectively for towns of Kota, Barikot, Ghalegay, Timadagh, Dahdra, Kabal, Mingora, Saidu Sharif Airport Area, Manglor, Charbagh, and all settlement on both sides of Swat River up to village Konia and Drushkhela on N-95,it is suggested to be connected through independent transit route to be developed along both banks of Swat River up to Drushkhela in the first phase and to extendable to Kalam in Second stage. New alignment on both sides of river is suggested for transit, because all above said settlements have emerged all along the alignment of N-95 utilizing it for commercial activities and leaving least space for road widening for exclusive use of buses. Proposed 2-lanes transit route is suggested to be flanked with cycle tracks and footways close and within the limits of urban settlements only.

490. So apart from developing quite a few linkages in these settlements to transit line required to for access to the transit route, situation requires a shift in the strategy to improve the capacity of N-95 and S-3B. As the travel requirement would increase, it is appropriate to service the demand through shared mobility. Entire corridor needs to be investigated for a transit initially between Chakdara to Drushkhela and future extension to Madyan and connecting shared services for traversing and feeder routes. Shared mobility services could be pedal cycles for short trip lengths and long distance travelling through bus or minibus operation and/or variety of other types of services.

G.1.5.3. Capacity Enhancement of the Inter regional Road Network

491. Apart from improving the capacity of urban road network; covered in G-2 section, it is important to improve the capacity of key interregional access routes entering the swat region from different directions. KP Government is keen to build Swat Expressway Phase II, instead priority should be to consolidate the three gateways to the region: N-95,including Chakdara ,Matta Madyan Road, N-90 and Kalam – Dir Road, through provision of hard shoulders for separating the movement of two wheelers, roadside drainage, footways within areas of roadside human settlements and dedicated bus bays for public transport stoppages. Proposed improvements must also include counter measures against spots of roadway departures; as explained hereafter, and conventional road safety measures to make road journeys safe.

492. Some of other inter regional routes are under improvement by CWD, all these route improvement proposals need to be re-examined through road safety assessment and road safety audit requirements to improve accessibility to touristic resorts and safety assured journeys and to diminish congestion on main inter regional routes.

G.1.5.4. Road Safety

493. Safety deficient road network, hostile traffic mix, poor operating environment, unsafe driving behavior has given rise to exceptionally high number of road crashes on Pakistan roads. Punjab Emergency Medical Services reports a road crash in everyone and half minute interval on Punjab roads. Swat region is not an exception. In KP the EMS is newly introduced, it has established branch in Swat but same is too new to show some effectiveness. Safety conditions on the part of driver / vehicle licensing, road engineering, and risk led road behavior are critically alarming. Most of regions main road network is generally in shape as far as road surface and pavement quality are concerned but lack facilities for vulnerable road users i.e., pedestrians and two wheelers. Most of National and Provincial Highways lack hard shoulders. In hilly terrains sharp road bends are devoid of roadside guard rails and protective kerb remain altogether missing. Curved portions are seldom accompanied with requisite warning signage and other counter measures to protect roadway departures (RWD). Driving Licensing system is faulty and enforcement laws are poorly applied. Most of the drivers on the road don't possess driver license. All these issues contribute towards a bigger problem of exceptionally high level of road crashes requiring a comprehensive approach to ensure safe travelling.

494. A comprehensive proposal to introduce road safety at provincial level is already suggested as part of the Peshawar Regional Plan. Two most relevant interventions at the level of swat regions pertain to (*i)* improving driver licensing standard on the part of Driver Licensing Authority (DLA) at district level and (ii) ensuring safer roads in line with the 2018 National Road Safety Strategy and National Road Safety Engineering Guidelines. Provincial and districts road authorities are required to carry out road safety assessment of the road network under their jurisdiction, identify probable sites of **roadway departures (RwD)** and road cashes happening on almost all hilly roads in the region. A program **Focusing Rural Roadway Departures** (FRWWD) must be suggested, to introduce counter measures against roadway departures for implementing through region-based mass action program. NHA to be approached and coordinated for similar actions on National Highways in the region.

G.1.5.5. Focusing Roadway Departures

495. Emergency Medical Services (EMS) of KP, Gilgit Baltistan and Azad Jammu and Kashmir (AJ&K) claim roadway departures and vehicle tumbling into roadside ravines / river streams, as a significant cause of road crashes in hilly terrains. Absence of adequate countermeasures for such problematic road sections was recently observed during site visits to some of intercity and regional roads in hilly sections of the region.

496. It is not a unique phenomenon for Pakistan, it happens everywhere having similar roadway and roadside configuration. Each year, USA reports about 12,000 fatal crashes when vehicles veer out of their travel lanes in rural areas. Road authorities in the developed world target this deadly problem through a program 'focus on rural roadway departures (FoRRRwD)'. With a similar mission, KP government needs to reduce the potential for roadway departure crashes on all rural roads by increasing the systemic deployment of proven countermeasures.

497. A roadway departure (RwD) crash happens when a vehicle leaves the traveled way (crossing an edge line or a centerline). These crashes, comprising run-off-road (ROR) and cross-median head on collisions, tend to be more severe than other crash types. Inattention or fatigue, an avoidance maneuver, or traveling too fast, are the common reasons a driver may leave the travel lane. Roadway and roadside geometric design features (e.g., lane and widths, horizontal curvatures, side slope, and clear zones) play a significant role in whether or not human error results in a crash. To achieve Toward Zero Deaths Vision, the Federal Highway Administration's (FHWA's) in States and road authorities in Europe, are implementing countermeasures to mitigate RwD crashes.

498. Several strategies to reduce the number of ROR crashes have been identified by the American Association of State Highway and Transportation Officials (AASHTO) including:

- Pavement edge line installation
- Centerline and shoulder rumble strip installation
- Pavement marking enhancement
- Shoulder drop-offs elimination
- Safer slopes design
- Object removal/relocation within the clear zone
- Object delineation using retro reflective tape
- Barrier design improvement
- Horizontal curve geometric improvement
- Skid-resistant roadway surface provision

G.1.5.6. Road Assets Management

499. As per regions topography, its basic road infrastructure stand developed. With a few exceptions, it hardly requires new alignment or construction of new roads. However, it is essential to consolidate the current network, and manage its maintenance for better operation. ADB has extended assistance for capacity building on part the of KP road authorities in Road Assets Management System (RAMS). Therefore, CWD and KPHA instead of spending maximum of their allocated budget on new road construction, need to consolidate and roll out road assets management program as per Ministry of Communications (MoC) recently endorsed guidelines on RAMS and improve upon the quality of operation and management of the available road assets. Same needs to be demonstrated in Swat Region.

G.1.5.7. Improving Rural-Urban Connectivity through Eco- Mobility

500. Majority of region's population lives in rural areas. As per 2020 estimates Swat district has population of 2,548,862, whereas its urban areas have population of 731,965 while rural area accommodates 1,816,897 which is 71.283 percent of district population. In this sense, both rural and urban areas deserve clean, affordable, accessible and safe mobility. Sustainable mobility is vital for maintaining the environmental and economic well-being of both rural and urban areas and to ensure access to services for both inhabitants and visitors.

Despite this, policies and efforts for sustainable mobility are usually focused on the urban areas, overlooking mobility between urban and rural areas and also mobility within rural areas. Eco Mobility can support connectivity between rural areas and cities.

501. For the last few decades, in Pakistan, urban – rural links are increasingly growing, nevertheless, rural connectivity is an ongoing challenge. Furthermore, a particular challenge concerning rural-urban connectivity is the first and last mile travelled. This challenge is more severe in case of rural hilly and mountainous terrains because these distances are usually much larger.

502. 'Eco Mobility offers the possibility for rural-urban connectivity through integrated, socially inclusive, and environmentally friendly transport options.' These might include integrating walking, cycling, public transport and other climate and people friendly innovative modes of transport for these areas. Especially relevant, intermodal passenger transport offers a solution to rural-urban mobility possibly combining road, rail, waterborne or cycling mobility options. Regions rural areas offer a significant potential for electromobility in these areas in combination with renewable energy sources. Small scale hydro and solar energy are evidenced in similar neighboring regions.

503. In addition, rural areas could become more eco-mobile allowing a series of strategies such as providing car share stations, Minibus/ taxi ramps and electric charging points in a strategic location with the appropriate capacity for the area. It would also allow for other forms of ride sharing including paratransit to discourage use of personal transport. Rural- urban connectivity could also be improved with the provision of cycle paths; wherever feasible, that join to the next urban or rural communities and important service points such as schools. Transit stations of the proposed transit lines of N-90 and N-95 for Swat may house shared mobility services like pedal cycle or electric scooter for rural destinations.

504. To conclude, Eco Mobility for the Region's rural- urban areas can allow a better access to education, health and leisure services, offer new job opportunities and encourage the development of economic activities, including tourism. Most of all, it works as an enabler for people and communities to be part of the global marketplace connecting rural areas with towns and cities.

505. Combining Prime Minister's 'Tree Plantation Program along cycle tracks to villages can bring positive change in eco-mobility and green cover of the region at large.

G.1.5.8. Sustainable Regional Mobility Plan (SRMP) for Touristic Region of Swat

506. The SRMP is proposed to contribute to tourists and residents using more sustainable transport modes for their leisure and everyday trips. The main objective is to collect mobility and tourism information in one place and to share resources and data between different regional actors as well as tourism stakeholders.

507. The measure also addresses mobility during high tourism season events to solve sever road congestion witnessed on N-95, N-90, Malam Jabba Road, various rural access roads and other tourists' spots during tourism seasons.

G.1.5.8.1 Implementing Sustainable Mobility

508. Proposed framework to implement sustainable mobility is outlined as follows:

G.1.5.8.1.1 Strategic Transport Network Design Study

- The regional government (Deputy Commissioner's office) to own and present the Strategic Regional Integrated Transport Plan through representative of provincial transport department; a 'Directorate of Regional Transport'(DRT). The plan to include air, and land transport to Swat Region and further travel details to touristic destinations.

- Designation of a central terminal place within or outside the region 'Tourism Centre' and Region's 'Mobility Hub', for parking of individual vehicles of tourists, being the last station for individual vehicle journeys. It must be a well-placed commercial complex; housing hotels, parking and offices of DRT and organizations dealing with mobility and tourism industry. It must deal with all information on tourism and mobility and to act as a control center for both.

- Perform the conduct of detailed analyses of public transport supply and demand and to present a proposal to increase the efficiency of public transport service. It needs to form the backbone of the bidding process for interurban or inter regional public transport services in the region. As of today, for Swat there are three most suitable places for developing 'mobility hubs', outside the regional boundaries which include Chakdara in Malakand for main Swat areas, Dir for Kumrat valley and tourism destinations in northern parts of Swat and Behsham from KKH side for central Swat destinations.

G.1.5.8.1.2 Sustainable Regional Mobility Plan (SRMP)

- An Action Plan for Sustainable Mobility in Swat Region is required to seek the approval of competent forum. It must provide the regional government with an instrument that links the short-, medium- and long-term action strategy for infrastructure and transport development within the Region, improving accessibility throughout its territory and providing more sustainable mobility and transport to residents and visitors.

- During the development of SRMP, the Regional Government must study population needs and the network layout, and conclude any significant obstacle to accessing public transport.

G.1.5.8.1.3 Traffic Plans for Annual Tourist Events

- These include but not limited to:

    - Tourist traffic plans to be prepared as an outcome of the SRMP. – these must be prepared and finalized by March every year. In parallel DRT Centre should start implementing commercial strategies to promote public transport use during big events.

    - Launch of a web-based platform for better involvement of citizens and tourists

    - The DRT start preparing the tender process for this measure. The objective is to have a single platform that contains all vital mobility-related information for tourists and residents.

G.1.5.8.1.4 Tourist/Mobility Info Point and Web Application

- As stated above the Tourism Center shall be the central mobility point, which shall be improved overtime. It shall be handling all information and activities from one point.

The Centre would develop its own mobile application to be officially launched and notified.

- This app will contain information related to tourism, road works, the public transport network, and other services. It will be geared at tourists and residents and constantly updated. It will be further expanded for inclusion of other modules related to mobility and transport, such as recharging points for EV, mobility sharing services, and more.
- Tourism Center shall perform activities for promotion for big events and arrange for publicity material and complete information on services at the center and region at large i.e., hoteling, parking of individual transport, public transport services to tourism destinations, shared mobility services for last mile, weather etc.

G.1.5.8.1.5 The outcomes of the measure:

- Increase the share of tourists that use more sustainable transport modes.
- Better cost-effectiveness of transport services.
- Better satisfaction with transport services.
- Info tourist/mobility info point in Abbottabad Region.
- Congestion management through enhanced utility of public transport and shared services
- Emission free environment for tourism spots.
- Employment and economic growth.

G.2. Urban Mobility

G.2.1. Mingora City Mobility

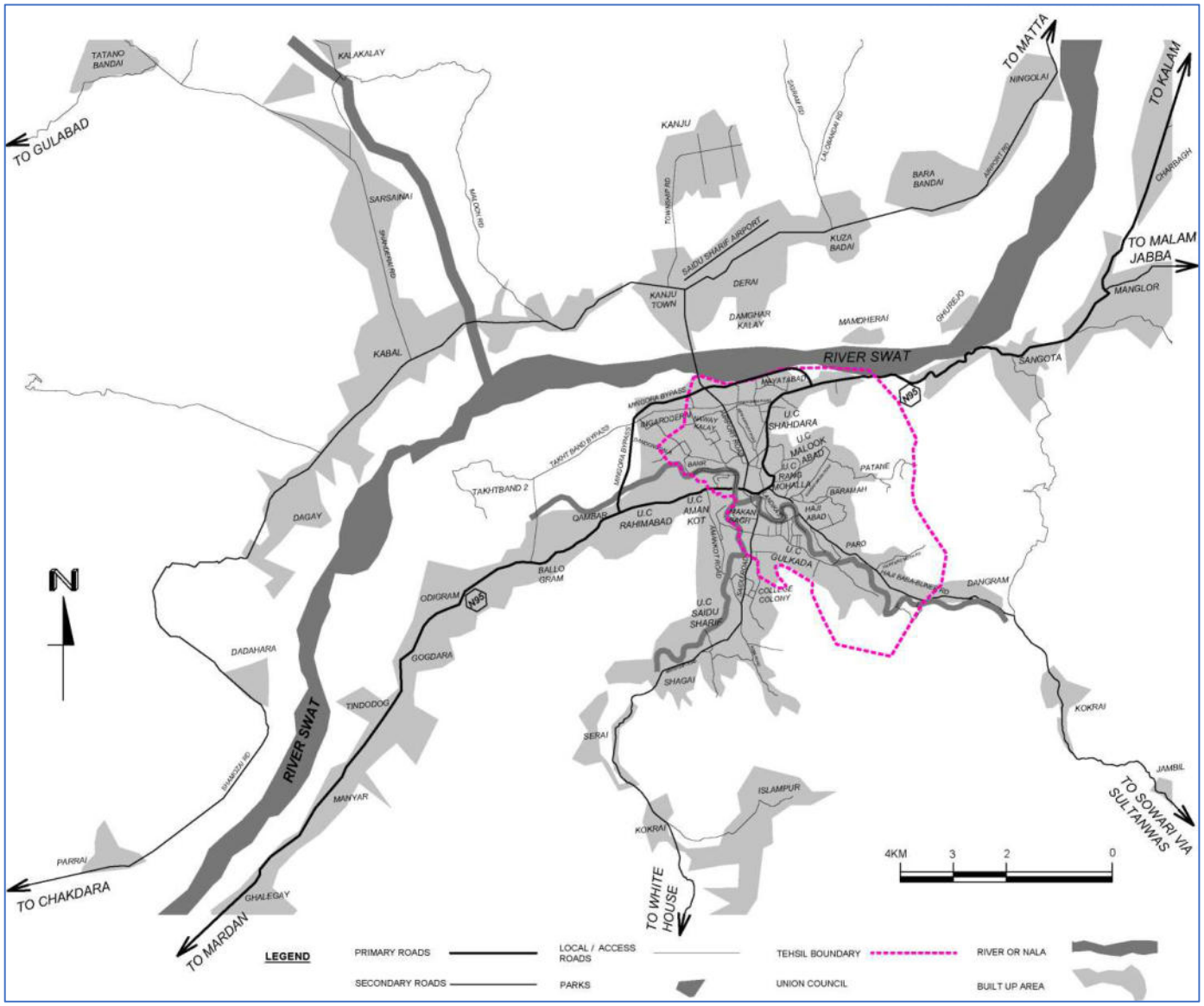
509. Mingora city, the regional headquarters of Swat with population of 369,662 (2020 estimates) people, is located at a distance of 41 Km from Chakdara town; situated on N-45. Mingora is the only major urban settlement of the region. It is developed in the wider section of the valley along Swat River. Its official boundary is quite small. But least controlled recurrently growing roadside development has resulted in long narrow urban strip all along N-95. Within the confines of its municipal boundaries the city itself seems fairly laid out. Same is the case of its adjacent urban settlements of Saidu Sharif, Union Councils (UCs) of Rahimabad and Amankot. Its main road network is adequately provided and successfully maintained with a few exceptions. N-95 passes through the city center and rest of the road network is laid out as per topographical features of meandering sub valleys. Most of its suburbs; are located outside its official municipal limits but well connected through radiating out road links to suburban valleys. Almost all main urban roads are 2 lanes single carriageways with ample side spaces for paved shoulders mostly used for roadside parking. A bypass to city is provided and is well functioning providing relief for through traffic. City connection to the Regional Airport situated on right bank of Swat River is well maintained through Airport Road and Bridge across the river. Public bus terminal is ideally located close to city center, whereas number of privately owned and operated long and short distance coaches and minibus terminals are scattered around, mostly abutting on N-95.

510. City road network usually remains busy, traffic conditions are usually reported to be congested on account of comparatively high degree of vehicle ownership and their concentration at the region's capital on account of, quality shopping and commercial activities, fairly decent education and health facilities and acceptable level of hoteling and tourism. Traffic Police is fairly active and delivers but overall city mobility suffers in the absence of, any traffic management plan, and custom-made public transport service. City mobility suffers on account of poor configured road infrastructure, wide-ranging absence of pedestrian facilities, poor road junction layouts, ill-defined parking and deficient traffic control and management mechanism, contributing heavily towards poor city functioning. Responsibility for road infrastructure lies with engineering department of the municipality with least understanding of traffic engineering, control and management issues.

511. Apart, poorly trained and risky drivers behavior, rare helmet wearing and seat belt usage, most of drivers operating without any driving license, underdeveloped EMS for timely post- crash response, all contribute significantly towards unsafe mobility conditions.

512. Capacity deficient organizations, lacking planning and building control mechanism, and overall absence of Traffic Engineering & Management organizational support for city functionality and mobility management and host of other related causes has resulted towards low quality and safety deficient mobility services.

Map 20: Mingora road network



G.2.1.1. Public Transport Operation

513. City public transport mostly relies on shared car service used as a taxi, three wheelers and small size Suzuki's operating on short distance routes. Limited seater Mazda buses and Toyota Vans are operating for close by region's towns of Chakdara, Khwazakhela, Matta, Madyan, Behrain, Kalam, Behsham and Shangla. Long distance intercity routes buses and quality bus operations are available from Mingora to all main destinations like Peshawar, Islamabad, Lahore, Multan and Karachi. All buses, coaches and vans operate from main bus terminal in the city center and privately operated terminals along N-95. There are no formal Taxi/Three wheelers ramps as waiting spots on the city road network. Arbitrary and Ill organized stoppages and halting points on N-95 and other intercity links create traffic bottlenecks and generate mobility and road safety issues. Absence of road recessed bus bays and bus halting stations cause road blockages and disturbance to smooth travelling and urban mobility.

514. City public transport is suggested to be reorganized through introduction of city bus service at the level of Greater Mingora covering both city areas and suburban growth all around. City bus service could further be rationalized through shared facility of pedal cycles/ electric scooters linked through well connected pedestrian ways and cycle tracks on cross routes. Introduction of formal bus scheme need to be supported through parking management throughout central areas to discourage the usage of private cars during busy hours.

G.2.1.2. Key proposals to improve city mobility

515. City mobility is suggested to be improved through targeting road congestion abatement, bringing functional improvements in transport infrastructure, services, and organizational capacity to charge qualitative city governance for achieving healthy urban living and economic growth.

516. City mobility improvement measures include 'Implementation of traffic management and safe road system program' to advance city mobility through:

- Improving links, and junctions' layouts and traffic control systems, on all primary and secondary roads of the city through small scale configuration enhancements.
- Provision and improvement of footways, and suitably placed pedestrian at-grade crossing facilities appropriately linked throughout the city along all primary and secondary roads, commercial streets and road links to parks and city spaces. Transform Mingora city and its suburbs as walkable city.
- Reorganize and improve City/ Intercity Bus Terminal for its improved functioning.
- Provide designated spaces for placing ramps for shared transport. Encourage shared mobility and taxi service. Bring transformational change for better usage of shared services through strict control & formidable parking charges for individual vehicles.
- Instituting parking management scheme for the city through declaring road lengths banned for parking and suitably designated spaces for charged parking and areas/roadsides for free parking.
- Facilitate and improve hard shoulders along all primary and secondary roads for usage of two wheelers/ roadside parking as per site specific requirements.

- Ensure provisioning of city-wide safe road system through conduct of comprehensive road safety assessment and execution of relevant mass action program covering road delineation/ lane marking, signage and roadside guard rails as deemed essential.

- Implement and ensure road safety on streets of Mingora through:

    - Implementing 2018 National Road Safety Strategy and recently initiated National Road Safety Action Plan to adopt safe system approach to reduce fatalities and injuries on city roads.

    - Adopt Ministry of Communications endorsed Road Safety Guidelines on 'road safety management, driver licensing, vehicle testing, road safety engineering, improving post- crash response, controlling high risk road- user behavior i.e., non-wearing of helmet and seat belt, and adoption of updated road safety law by the provincial government.'

- Build and strengthen organizational capacity in area of 'urban development' through revamping and training in areas of 'urban planning and building control', 'road building, and traffic engineering / management', to keep the city infrastructure functional through Assets Managements Approach.

G.3. Regional Connectivity: the Way Forward

G.3.1. Regional Mobility Sub-Sector Priority Projects

517. Following sub-sector projects, in order of priority, are identified as most suitable for investment, to help improve regional mobility in Swat Region.

i. **Swat Region's Mobility Study**. The foremost activity required to be carried out for bringing improvement and transformational change towards regional mobility is to launch a comprehensive regional mobility study aimed at improving mobility infrastructure and services for growing mobility demand as a consequence of CPEC routing passing close by the region, tourism industry and regions growth potential. Study shall help assessing the level of service of the available infrastructure and services, to understand the opportunities and implications associated with future major transportation and community investments, and to prioritize those investments.

ii. Study outcome shall result the production of **Regional Mobility Strategy** incorporating greater role for public transit, shared mobility and innovations in micro-mobility, Sustainable Regional Mobility Plan and Tourism specific Mobility Development Framework, initiative of Eco-Mobility for Urban Rural Connectivity, priority projects to improve inter regional connectivity, and Strengthening Road Assets Management and capacity building of road agencies. Study is expected to cost around USD 0.50 million.

iii. **Regional Transit Study**. Second most significant study requirement is the conduct of transit study at the regional level and to introduce prioritized regional transit operation aimed at mobility improvements for the region and urban centers alike. It is proposed to made part of Region mobility Study.

iv. **Road Network Safety Assessment Study**. Being a serious most issue of poor road safety situation, where speeds are uncontrollable and roadway departures are common on account of topography of the region, it is most imperative to initiate safety

assessment of the road network and potential sites of roadway departures. All types of rural roads are proposed to be assessed and a program for implementing counter measure sites are to be identified for improvement. Study is expected to cost USD.48,000.

v. **Inter-Regional Connectivity Priority Projects**. Some of the mobility corridors are vital to improve inter regional connectivity on priority basis. These include N-90 and Kalam Dir Highway. N-90 is required to be upgraded through addition of paved shoulders, footways for sections falling within existing human settlements and application of road safety measures all along the road. Kalam Dir Highway is being improved. Proposed design of the road needs to be reviewed through Road Safety Audit and implementing the consequential improvements. Other routes improvements including 39 km of Jatano Bandai-Toormang Road (Dir area), 54 km of Mingora-Sowari Road (district Bunner) and 74 km of Barikot- Bazar Gai Road (district Bunner) are also important for enhancement of regional connectivity (Map 21). Approximate cost of these projects is USD 80 million.

G.3.2. Urban Mobility Priority Sub-Sector Projects.

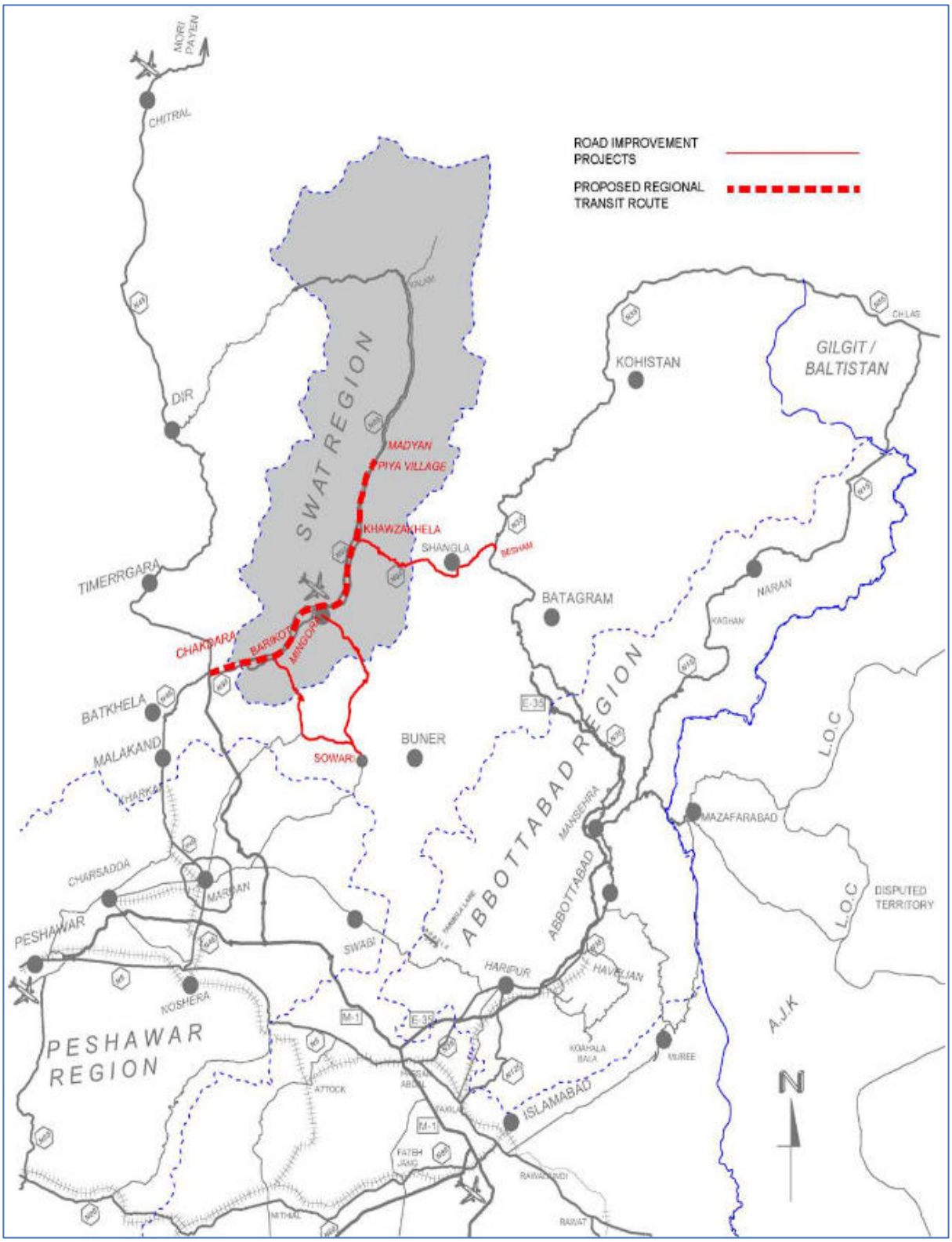
518. Following Sub-Sector Projects for Urban Mobility improvements are considered for Swat.

i. **Urban Transport Planning Study** for agglomeration of Great Mingora comprising of existing Mingora, Saidu Sharif, and Rahimabad, Balogram, Doigram, Tindodog, Manyar, Sangota and Manglore on N-95, Dagay, Kabal, Kanju town, Kuza Bandi, Bara Bandi, and Mangolai, on Chakdara Madyan Highway. Proposed transport study would be an important contribution towards transforming this agglomeration into high density development and prioritized walking and cycling city. One of the important outcomes of the study would be Urban Mobility Management Plan. Implementing the urban mobility management plan would largely contribute towards improvements in organized city circulation, improved environmental conditions and healthy urban living so important for growth of tourism, trade and urban and regional economy.

ii. **Implementation of Urban Mobility Management Plan**. This shall include but not limited to, small scale improvement of city road links, improvement of junction configurations, appropriate road signage, reorganizing street flows in most suitable patterns, parking management, traffic signaling and control, taxi/other shared mobility ramps, large scale improvements towards building/upgrading of footways and cycle tracks through city and establishing /training of Mobility Management Units staff. Proposed program (study and works) would cost around USD. 12 million.

iii. **Improvement Plan for Mingora Intercity Bus Terminal**. Another important outcome of the Urban Transport Planning Study would be comprehensive review of current practice of variety of intercity bus terminals and project plan for reorganizing the main terminal. Project for improvement of the bus terminal shall cost around USD 0.50 million.

Map 21: Swat regional connectivity improvement program



H. URBAN ECONOMY

H.1. Comparative Advantage of the Region

519. The Swat District is known for the exceptionally beautiful environment and plentiful remains of the Gandhara Kingdom, attracting national and potentially international tourists. Mingora is its main urban and commercial center. The District also has a sizeable agricultural production and a role in KP's mining and quarrying operations.

520. Although agriculture is critical to a large share of the population, cities are the main creators of economic wealth and generate over 70% of the KP Gross Domestic Product (GDP).[299] Today, KP is one of the most attractive investment hubs of Pakistan and a base for various large and small businesses in sectors like auto components, engineering, IT, BPO, biotechnology, pharmaceuticals and food processing. These opportunities attract skilled and unskilled human resource from the adjoining tribal districts and southern districts of KP.

521. The industrial base in Swat is limited in size compared to industrial activity in Peshawar city but more diverse than the industrial bases of Nowshera and Mardan (which are heavily concentrated on marble processing). The main industries in Swat are marble and rubber and plastics, followed by cement, rice. This industrial diversity gives the Swat District some resilience against sectoral business cycles but manufacturing overall is struggling. Moreover, the export value of Swat-based industrial production is neither high nor showing positive trends.

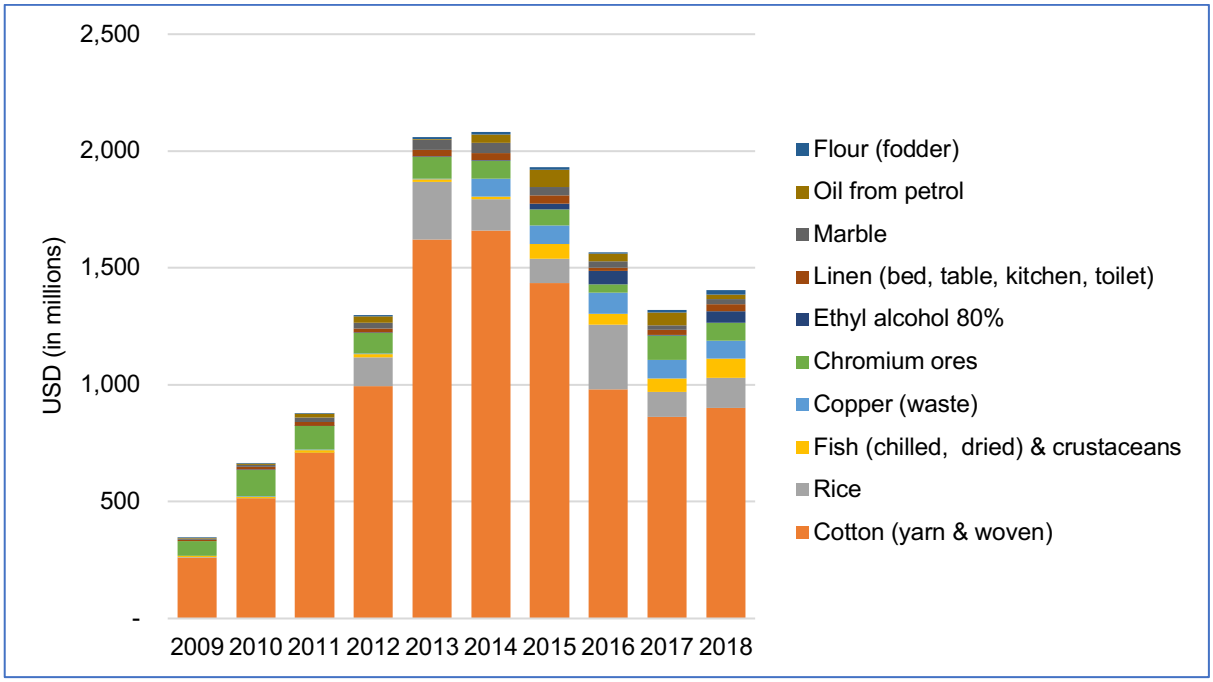
522. The tourism sector all but disappeared between 2007-2009 with the arrival of the Taliban. Security has now improved to such levels that Swat is now (cautiously) being recommended by 'off-the-beaten path' tourism websites that tout the people's hospitality along with the environmental beauty.[300] The mountains, forests, and meadows provide wonderful backdrops to any holiday and lend themselves to eco-tourism and hiking and climbing offerings. Combining the environment with Swat's long and diverse cultural and religious history, the District should be a top-tier destination for national and international visitors.

523. To determine the comparative advantage of Swat in terms of the economic activities in which it performs strongly compared to other regions, the main exports of Pakistan provide a starting point for analysis.

299 MoF 2019 Economic Survey of Pakistan 2018-2019. Ministry of Finance.

300 https://www.offbeattravelling.com/swat-valley-pakistan/.

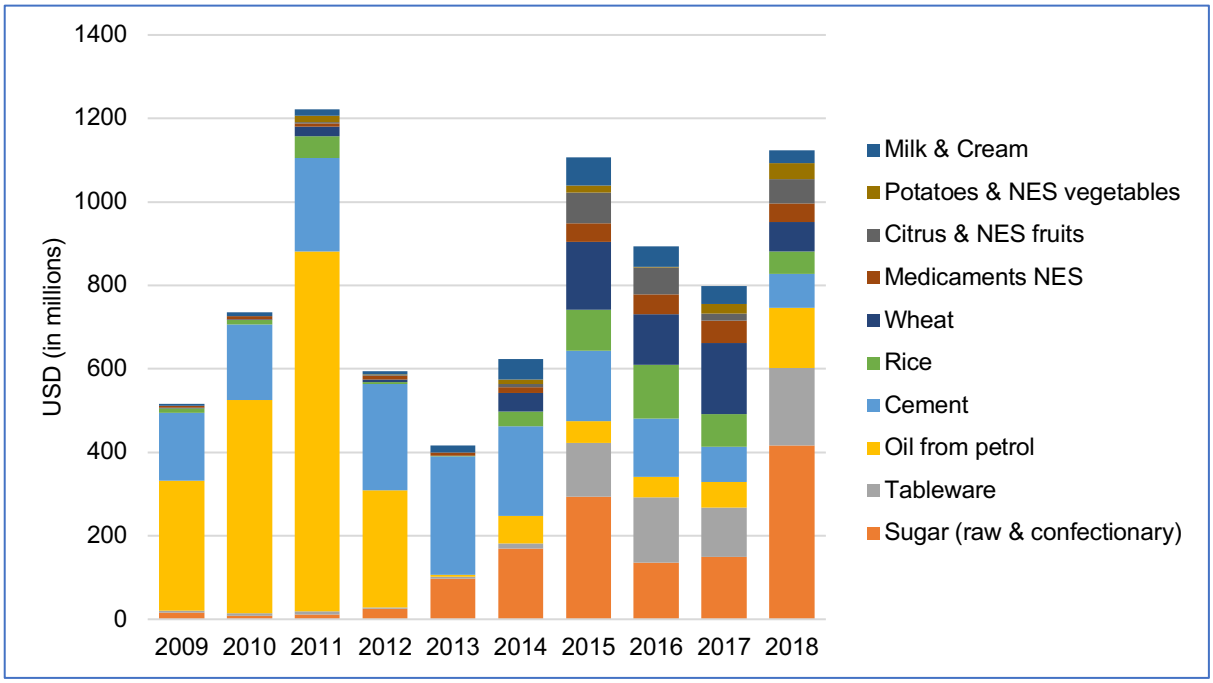
Figure 61: Top-10 exports to China (2018)



Source: State Bank of Pakistan Export Receipts

524. The top-10 export goods to China, Pakistan's second-largest export partner, in 2017-2018 are: woven cotton and cotton yarn, rice, fish and crustaceans, copper waste, chromium ore, ethyl alcohol, linen goods, marble, oil and flour for non-human consumption. Of this top-10, cotton products make up 64%, followed by rice (9%). All other goods each are 6% or less of the value of the top-10 exports to China.

Figure 62: Top-10 exports to Afghanistan (2018)



Source: State Bank of Pakistan Export Receipts.

525. The top-10 export goods to Afghanistan, Pakistan's fourth-largest export partner, in 2017-2018 are: raw sugar and confectionary, tableware, oil, cement, rice, wheat, assorted

medicaments, assorted citrus fruits, potatoes and assorted vegetables, and milk and cream. Of this top-10, raw sugar and confectionary make up 37%, followed by tableware (16%), oil (13%), and cement (7%). All other goods each are 6% or less of the value of the top-10 exports to Afghanistan.

526. Several export goods represent a trade value of over USD 100 million. Cotton exports have been volatile in the past years but appear to have stabilized around a value of USD 900 million in 2018. This is double the export value of raw sugar and confectionary (USD 417 million) but these export commodities have shown tremendous growth from USD 149 million in 2017. Tableware exports have shown solid growth to a value of USD 185 million. Rice exports to both China and Afghanistan have been fluctuating wildly but combine to a value of USD 183 million. Oil exports to China peaked in 2015 but exports to Afghanistan have been holding steady, with a significant jump to USD 144 million in 2018.

527. Traditionally strong export sectors appear to be struggling. Exports of cement peaked in 2013 but appear to have stabilized at USD 80 million to USD 85 million. Wheat (human and non-human) exports declined sharply in 2018 to USD 70 million from USD 171 million the year before. Marble exports declined in value to USD 20 million from their USD 44 million peak in 2014.

528. The export sectors that are relatively small but also showing increasing value of the years are: medicaments, assorted citrus fruits and vegetables (incl. potatoes), milk and cream, copper waste, chromium ores, linen products, fish and crustaceans, and ethyl alcohol.

529. If KP and Swat specifically are comparatively strong in any of these export goods, these are sectors that can support sustained economic growth and development. Particularly if the comparative advantage exists in sectors that are large and/or growing.

H.2. Productive Sectors

H.2.1. Agriculture

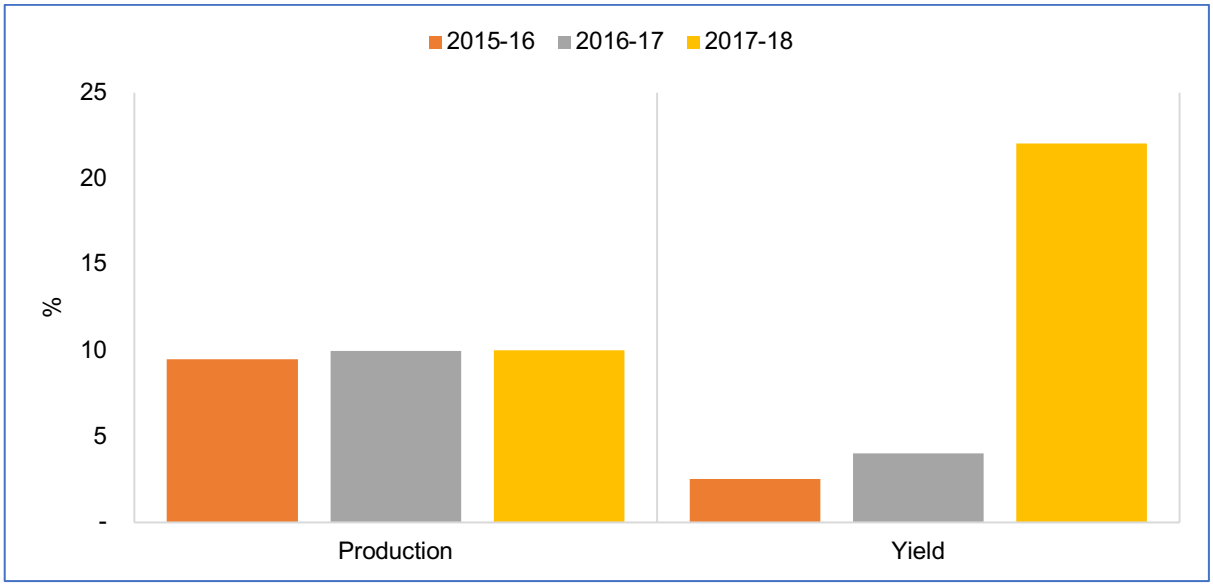
530. Around 30% of KP land resources are cultivable (GoKP 2011). KP produces 6.3% of Pakistan's sugar cane and respectively 4.5% and 1.4% of its wheat and rice output. It is unknown what share KP produces of Pakistan's total production of assorted fruits and vegetables.

531. Most landowners in Swat have small tracks of land suitable only for subsistence farming. Soil may be tilled using mattocks and terraces are constructed to prevent soil erosion. Despite the significant labor investments and costs, soils are of poor quality and yields are insufficient. Farmers overfertilize and overuse their plots, further reducing soil quality.

532. Wheat production does take place in Swat, at a relatively high level of output. Farms have moreover been achieving yields that are above the KP average and appear to be increasing. Sugar cane is not produced in Swat.[301]

[301] KP Development Statistics 2019.

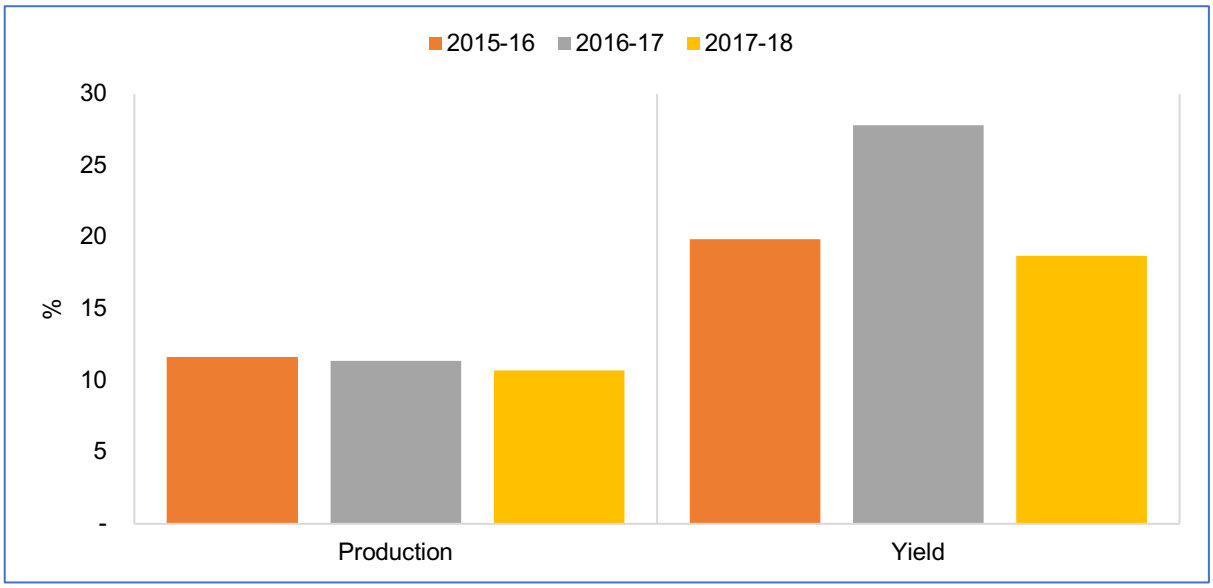
Figure 63: Share of KP production and relative yield – wheat



Source: KP Development Statistics 2019.

533. Rice production in Swat is significant at approximately 10% of total rice production in KP. Moreover, rice farms in Swat are very efficient.

Figure 64: Share of KP production and relative yield – rice

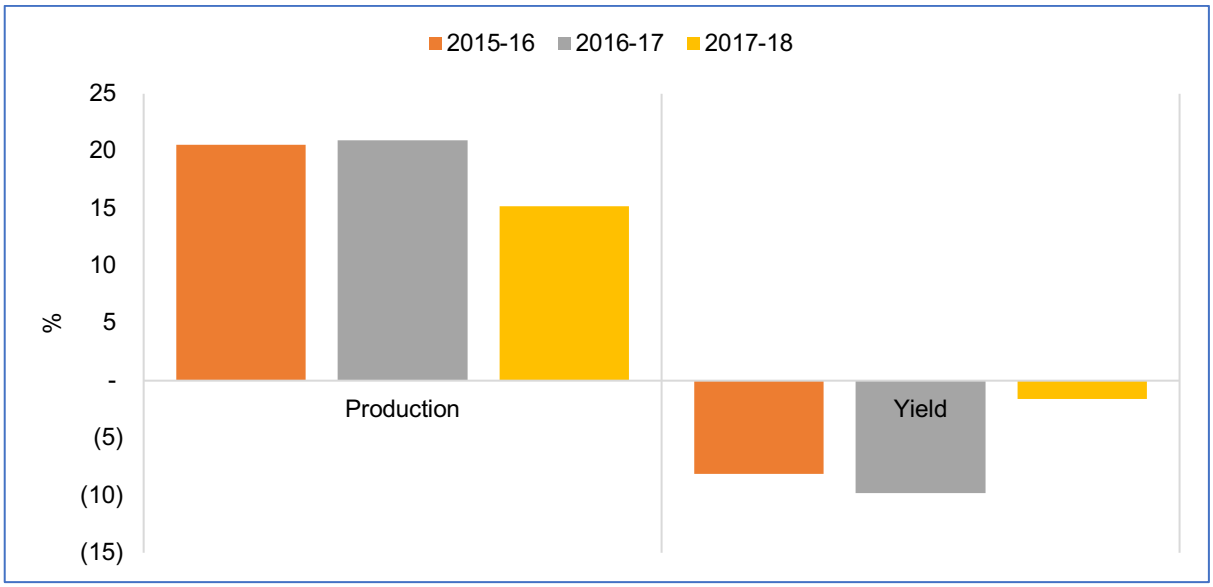


Source: KP Development Statistics 2019.

534. Rabi (winter) vegetables are used as a proxy for the production of potatoes and assorted vegetables. Swat produces a significant share of the rabi vegetable output of KP. The active farms, however, are comparatively inefficient and may benefit from better production techniques.

535. The altitude and remoteness of rural lands in Swat makes the region very suitable to develop agriculture around potatoes and potato seed, as these are factors that inhibit disease and pathogens.[302]

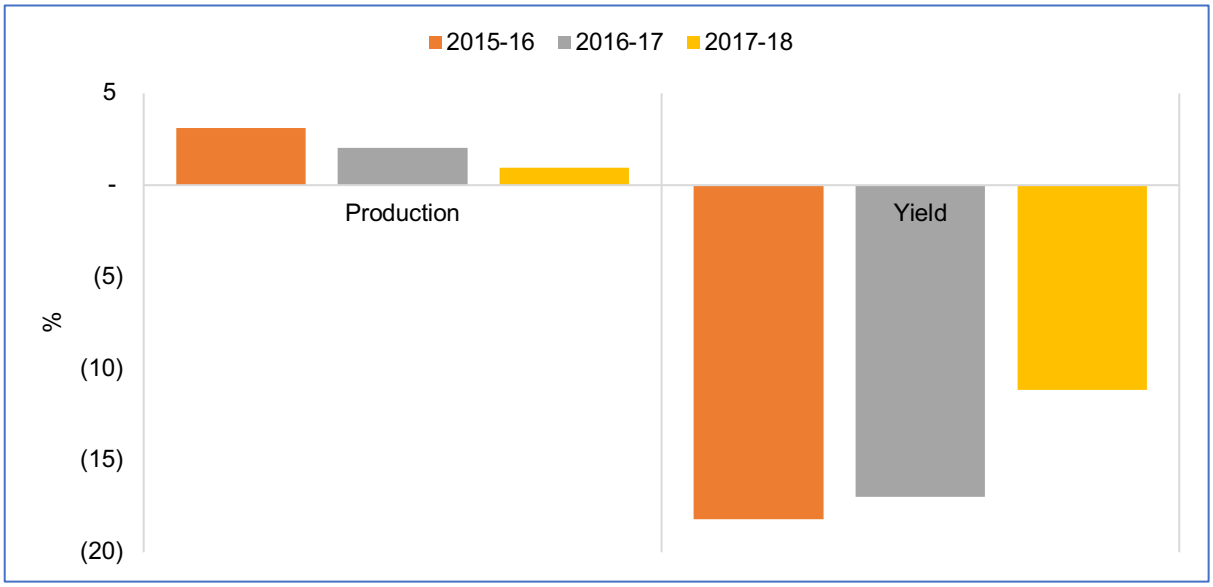
Figure 65: Share of KP production and relative yield – rabi vegetables



Source: KP Development Statistics 2019.

536. Rabi fruits are used as a proxy for the production of citrus and assorted fruits. Swat is well-known for fruit production, including peaches, apples, plums, apricots, persimmon, and walnut. Production data for rabi fruits indicate, however, that yields are low compared to the KP average.

Figure 66: Share of KP production and relative yield – rabi fruit



Source: KP Development Statistics 2019.

537. Livestock plays an important role in the lives of farming communities of Pakistan as it ensures food security and is a source of income. The region has many weekly markets on

[302] GoKP 2019. Tribal Decade Strategy.

regular basis that take shape of bigger centers for 2-3 weeks near Eid-ul-Adha. The sector faces different challenges hampering its growth that include:

- Non availability of modern abattoirs.
- Improper and unhygienic storage facilities of meat at abattoirs and airports.
- Absence of managed atmosphere-controlled containers for transportation and lack of adequate freezing facilities.
- Controlled retail price of meat leading to slaughtering of unhealthy and old animals.
- Lack of specialized butchery skills for meat grading and handling.
- Lack of International certification (Global GAP, HACCP).
- Frequent slaughtering of young calves because of high input costs.
- Lack of organized cattle fattening facilities.

538. Honey has significant potential to increase the income of poor households. Small-scale producers typically produce 5-15 kg of honey annually, usually for their own consumption and selling any excess. There is strong international demand for indigenous honey, causing traders to prefer selling to tourists and exporting to realize higher prices compared to selling in local markets. Outdated knowledge, techniques and equipment are holding back yield increases but modern processing and packing equipment is unavailable. Progressive honey processors cannot optimally use modern processing plants due to a lack of supply, raising their costs. Honey producers have trouble placing bee colonies on farms and may encounter problems at checkpoints when transporting beehives.[303]

539. The Malakand region is endowed with conditions for producing high-quality honey. The region has more than 500 honey-producing bee colonies with a capacity of about 900 tons of honey per year.[304] Honey produced in Swat is very popular and many locals are beekeepers. Swat honey is sold in the local markets as well as roadside stalls.

540. The poor law and order situation of past years set back honey production. It was very difficult for farmers to transport their honey for processing and most of the produce would spoil en-route to purification and packaging centers situated outside the Malakand region. Around 80% of honey farms closed, leaving their owners in a state of despair in the worst-affected areas of Malakand Kalam and Shangla.

541. The river Swat serves as a permanent fishery for the area by providing fish throughout the year, while its tributaries are used for fishing only in spring.[305] Mahasher (carp) is common in lower areas and trout is abundant in upper areas where the water is very cold.[306] There is a

303 https://www.dawn.com/news/1234013

304 SMEDA report 2016

305 "Swat Economy", The Khyber Pakhtunkhwa Tribune, 2011, http://kpktribune.com/index.php/en/swat/swateconomy.

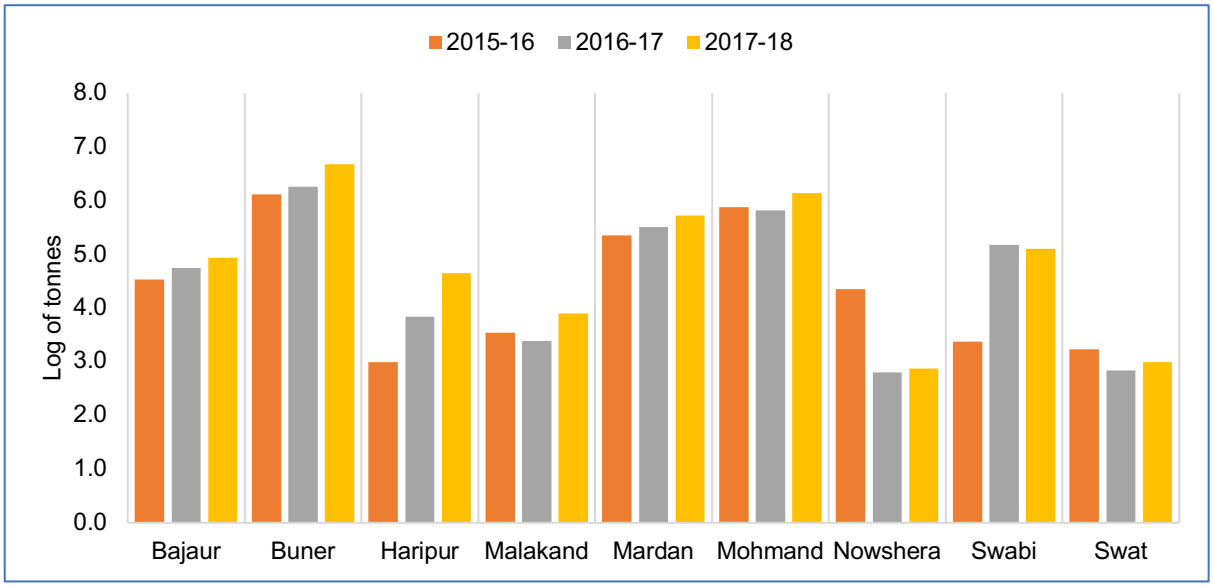
306 Improvement of Food Production in Swat Valley: The Express Tribune, May 28, http://tribune.com.pk/story/713923/swat-valley-environmental-catastrophe/.

large fishery in Madyan where trout fish are reared. Swat District has around 25 trout fish farms.

H.2.2. Mineral Extraction

542. The main production of marble in KP occurs around Buner and Mohmand, with the northern areas of Buner being closer to Mingora than Mardan (though the quality of roads and therefore transport time and costs have not been evaluated). Production around Bajaur is small but growing, whereas marble production in Malakand and Swat appears small and stable.

Figure 67: Marble production



Source: KP Development Statistics 2019.
Note: Logs used for visual purpose.

543. Only a minor share of (un)processed marble tiles were exported in 2011 and the potential international demand was far larger than actual exports achieved at that time.[307]

544. The industry is fragmented and mostly low-tech, which has been linked to resource waste of up to 70% representing an annual value loss of $60 million-$70 million in 2011.[308] Furthermore, cutting marble tiles is done with locally-made, uncalibrated machines that produce tiles with width variations of 1-2 mm and non-straight edges.[309] The international standard includes tile width variations of no more than 0.5 mm and straight edges, suggesting that Pakistani marble tiles are a lower-tier product in the international market.

545. Increasing efficiency in the marble industry by adopting modern techniques for mining, cutting, and polishing is critical. International competition is eroding the market value per excavated unit, and sub-standard finishing limits the sector's potential to increase its share in

307 Mansoor Y, Syed NA, 2012. Pakistan Marble Industry Challenges: Opportunities for China in Pakistan." *Journal of Independent Studies and Research* 10:43-59.

308 Warren, Lorraine and Nouman, Muhammad (2013) Opportunities and challenges for the marble mining industry in North-West Pakistan: a systemic analysis of low-tech innovation. *British Academy of Management 2013 (BAM2013), Liverpool, United Kingdom. 09 - 11 Sep 2013.* pp. 1-74 .

309 Mansoor Y, Syed NA, 2012. Pakistan Marble Industry Challenges: Opportunities for China in Pakistan." *Journal of Independent Studies and Research* 10:43-59.

the international market for high-value finished products. Consuming a large but finite resource stock for low-value production processes is an unnecessary waste.

546. Pakistan Stone Development Company (PASDEC) has set up several mechanized quarry projects and provided training to hundreds of quarry operators, achieving increased awareness of modern mining technologies. It has also established a machinery pool in Risalpur that has allowed mining companies to rent modern mining machines and is planning to set up Common Facility Training Centers with cutting-edge marble processing machinery.

547. Mines in Swat District are contributing to groundwater pollution.[310] Mines that are located in landslide zones pose a risk to the environment and to the safety of local communities. Both underground and open-pit methods are employed, and the techniques in use are crude and indiscriminate. Miners are poorly paid and work in dangerous and unhealthy conditions.

548. Its location places Mingora well for other mining (e.g., granite) and quarrying activities. Nearby granite-producing Districts include Kohistan, Lower Dir, and Upper Dir, although the road network means that mine output in these Districts may equally well be brought to Mardan or Mansehra.

549. The Swat District is also known for gemstones as emerald, quartz and epidote are present in the area as well as mined and traded. The Swat emeralds are considered among the best emeralds in the world.

550. The production of four types of minerals (limestone, marble, dolomite, and emerald) for the district is reported. Table 38 reveals that the emerald is produced exclusively in the district with the 100 percent share in the province, while the provincial shares of other minerals are very low.

Table 38: Mineral production in Swat

Mineral	Tons	% of KP production
Limestone	6,827	0.06%
Marble	1,410	0.10%
Dolomite	810	0.50%
Emerald	695	100%

H.2.3. Oil, gas and energy

551. There is tremendous potential for an energy sector in KP, as it has the potential to generate 50,000 MW of hydroelectric power.[311]

[310] Iqbal M, Akbar F, Ullah S, Anwar I, Khan MT, Nawab A, Bacha MS, Rashid W, 2018. The effects of marble industries effluents on water quality in Swat, Northern Pakistan. *Journal of Biodiversity and Environmental Sciences* 13:34-42.

[311] GoKP 2014 Integrated Development Strategy 2014-2018.

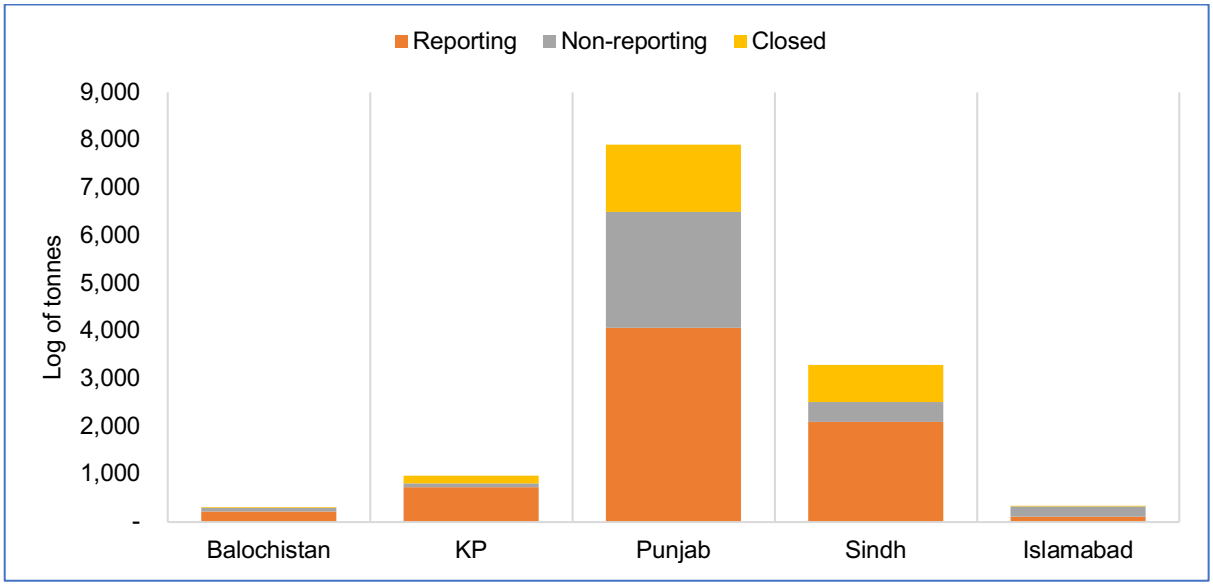
552. The Swat River has potential for several run-of-river projects, ranging from 10MW to 200MW.[312] There is a total potential of 1,000MW.[313] Feasibility studies have been completed for the 88MW Gabral-Kalam project. The 84MW Gorkin-Matiltan project is under construction.[314] GoKP is contacting investors to develop $425 million hydroelectric run-of-river power projects. The executing agency is the Pakhtunkhwa Energy Development Organisation (PEDO).

553. Other forms of renewable energy have not yet achieved significant scale in KP.[315]

H.2.4. Industry

554. Industrial activity in KP is low compared to the main industrial Provinces, Punjab and Sindh. GoKP identifies the geographic location of KP as an important barrier for industrial development in the Province.[316] Its distance to ports imposes high transport costs on (imported) inputs and outputs. These costs reduce the competitiveness of KP goods and commodities compared to other nations except neighboring Afghanistan.

Figure 68: Industrial units per province (2017-18)



Source: KP Development Statistics 2019.

312 https://www.dawn.com/news/1534370.

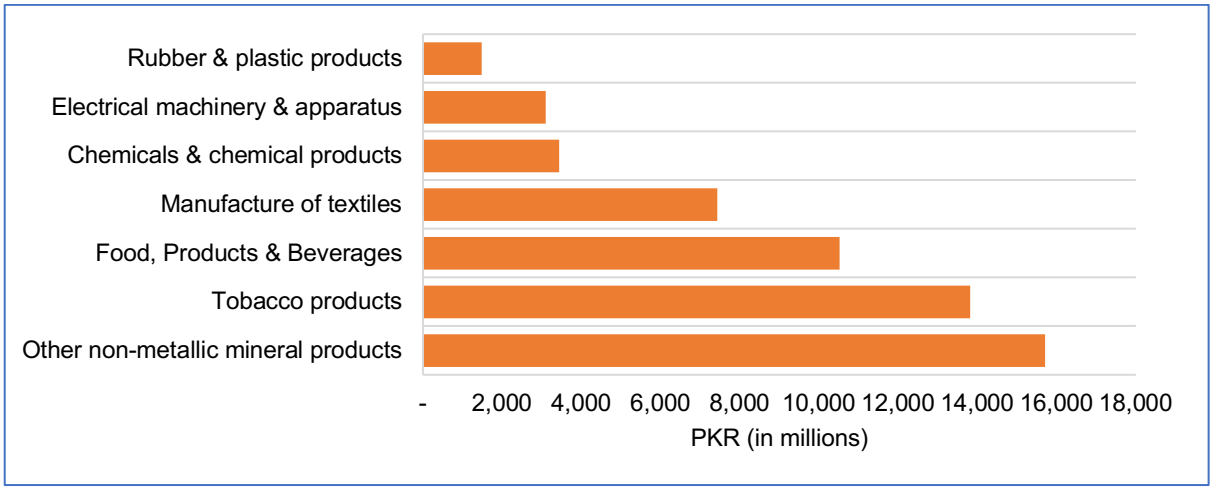
313 Sabir M A, Rehman S S, Umar M, Waseem A, Farooq M, Fariduulah, Irshad M, 2014. Assessment of hydro power potential of Swat, Kohistan Himalayas: A solution for energy shortfall in region. *Water Resources* 41:612-618.

314 https://www.dawn.com/news/1566803.

315 GoKP. 2020. Abbottabad Land Use Plan (Draft). Peshawar: Urban Policy Unit, P&D Department, Government of Khyber Pakhtunkhwa.

316 GoKP 2011 Economic Growth Strategy. Government of Khyber Pakhtunkhwa.

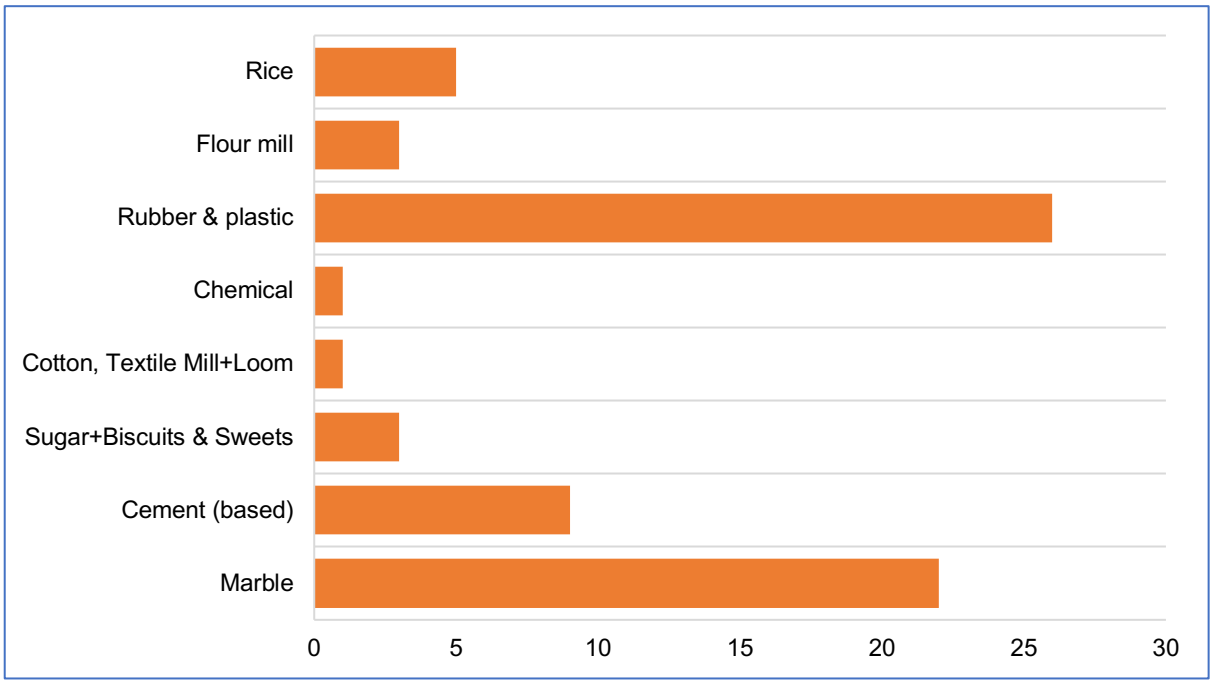
Figure 69: KP Industries with highest value-added (2005-06)



Source: KP Development Statistics 2019.

555. Of the industrial units in Swat, 22 are active in marble processing. Cement is still a large export sector. In Swat, there are 9 units active in cement and related manufacturing.

Figure 70: Running industrial units per sector



Source: KP Development Statistics 2019.

556. Three plants process sugar cane and/or produce biscuit and sweets.

557. Swat has several units in rubber and plastic production. Swat has 26 industrial units, putting the number of units on par with Peshawar city (28 units). Swat furthermore has one chemical plant.

558. Swat has 3 flour mills and three units processing sugar can and/or producing biscuits and sweets. Five industrial units are dedicated to processing rice. One plant processes cotton.

559. Swat has a tradition in the silk industry, but it suffered during the insurgency. Only 75 out of about 350 silk units that were closed due to military operations have started working again.

560. Swat is aiming to develop a silk cluster with common facilities do dyeing, washing, and pressing silk. The Silk Centre has the capacity to process 3,000 meters of fabric in 24 hours, enough to meet the demands of the existing silk industry in Swat.[317]

561. Although these industrial data appear promising, there is an important caveat: by and large, the industries in Swat are struggling. This is discussed further in section H.6.

H.3. Inter-regional Linkages

562. For regions and cities in KP, economic development is particularly important since the only alternative for many residents is subsistence agriculture. With only a small base of manufacturing and services, the region and cities suffers from widespread poverty. Demographic trends, such as population growth, urbanization, and the youthful age profile of the population, point to the fact that poverty alleviation is likely to be an even more serious task in the years to come.

563. To make KP competitive for investment and development, cities are going to play a vital role. Cities offer virtuous cycles of growth, where residents demand goods and services, which tempts businesses to provide goods services and thus jobs. In turn, the prospect of jobs causes people to move to cities, further stimulating demand and offering a wider labor pool for businesses.

564. For further rural-urban migration and urbanization to be successful in terms of employment and income growth, manufacturing and services need to grow fast enough to absorb the increasing supply of labor. KP will have to invest in multiple cities to ensure a geographically balanced rate of urbanization and the creation of a “system of cities” that have sufficiently large economies to start a virtuous growth cycle. In a system of cities, each urban agglomeration can take on a specialized role in the network that can lead to faster job creation and higher productivity growth for the region.[318]

565. In the adoption of a strategy for the achievement of any meaningful development, a well-planned physical infrastructure is of great significance. To bring about progress and to increase economic activity, it is necessary to have a well-laid system of roads. The density of roads in regions are not too far below the national average but the overall road availability is inadequate because of rugged terrain. This makes the road network one of the main obstacles to economic growth.

566. Although these industrial data appear promising, there is an important caveat: by and large, the industries in Swat are struggling. The existing industries established in Swat are either closed or on the verge of closure. This is discussed further in section H.6.

317 SMEDA report 2016

318 World Bank (2014), “Pakistan Urban Sector Assessment: Leveraging the Growth Dividend from the Urbanization Process”. A background paper for the World Bank’s South Asia Urbanization Flagship Report.

H.4. Regional Economic Development

567. KP has the third-largest economy in Pakistan and, in the past, has constituted around 10% of the national GDP.[319] With national GDP at USD 314.6 billion in 2018 (World Bank Open Data), GDP in KP in 2018 would roughly be USD 31.4 billion.

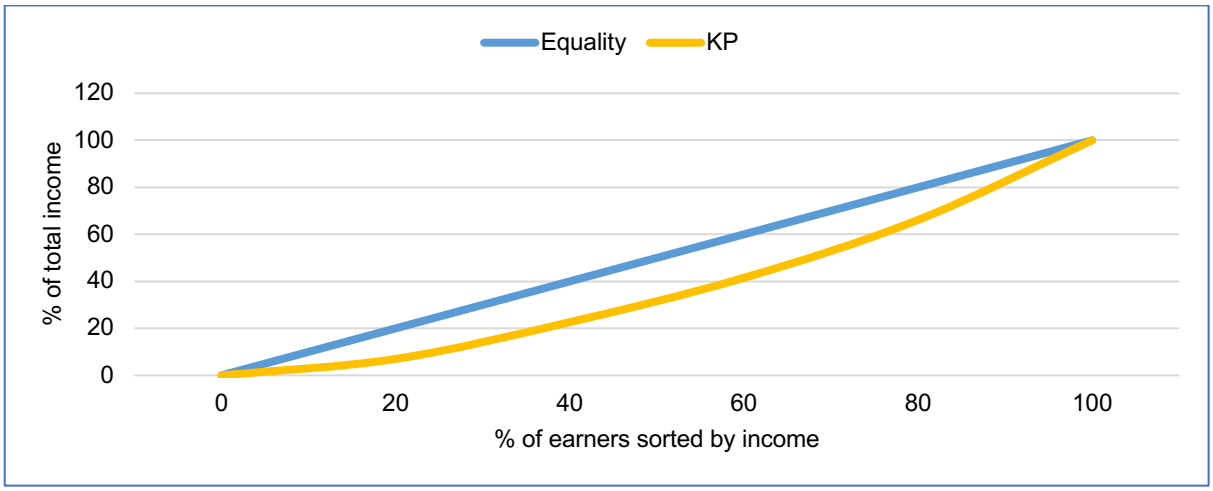
568. The economy of KP has not yet developed to a complex, high-value structure, however. Agriculture currently creates 21% of GDP in KP and, together with livestock, contributes to the livelihoods of 83% of the rural population.[320]

569. As was shown earlier, the manufacturing sector is small compared to Punjab or Sindh. It is also focused on processing local inputs from agriculture and mining. A few industrial units for chemicals, rubber, plastics, and electronic goods are active primarily in Peshawar.

570. The PBS Labor Force Survey 2017-18 showed that the informal sector in KP is very significant. Informally-employed persons in KP amount to 52% of the labor force. The largest sectors with informal employment are construction (25.4%) and wholesale, retail trade, and vehicle services (28.2%). These are also the largest informal employing sectors at the national level.

571. The same survey shows that underemployment, i.e., those working fewer than 35 hours per week although they are (actively) available for more work, is also high. Of the underemployed persons in KP, 41.7% report to be self-employed. A further 25.9% are contributing family members, and 32.1 % are employees. These percentages are also similar to the national numbers.

Figure 71: Income inequality in KP



Source: PBS Household Integrated Economic Survey 2015-16.

572. Income equality is another hallmark of developed economies. Income equality is when each part of the population earns a share of total income equal to the size of that part. Dividing the population in quintiles (i.e., 20% shares), each quintile earns 20% of the national income.

319 GIZ. 2017. Sector Study on Demand-Driven Competency-Based Training in Potential Sectors of Khyber Pakhtunkhwa. Islamabad: GIZ.

320 GoKP. 2014. Khyber-Pakhtunkhwa Integrated Development Strategy 2014-2018.

573. Considering the overall population of KP, income inequality expressed as an approximation of the Gini coefficient is 0.26, which is in a similar range to developed economies of the world. Nationally, income inequality is slightly worse at 0.31.

Table 39: Approximations of the Gini coefficient

Pakistan	KP		
All	All	Urban	Rural
0.312	0.264	0.463	0.173

Source: PBS Household Integrated Economic Survey 2015-16.

574. Distinguishing between the urban and rural population highlights a few important caveats, however. The income gap between high- and low-wage earners in urban centers in KP is much higher (0.46) than the national average and much closer to income inequality in other developing countries. The very equal distribution of income in rural areas (0.17) of KP is likely an unfortunate outcome of widespread poverty more than anything else.

H.5. Trade and Enterprises

575. Khyber Pakhtunkhwa possess a historical significance in trading being the International route connecting South Asia with the Central Asia and Europe. The international road border crossings between Pakistan and Afghanistan are mostly through KP, while it is also indirectly linked to Iran and China. The famous border crossings between Pakistan and Afghanistan through KP are Khyber Pass, Nawa Pass (Bajaur), Angur Ada (South Waziristan), Ghulam Khan (North Waziristan), Kharlachi (Kurram) and Tari Mangal (Kurram). The border crossing from Kurram connects Pakistan to Iran via Afghanistan. Moreover, the Karakorum highway (silk route) that connects Pakistan and China passes through the Hazara region of the province. The strategic location of KP province makes it important with respect to the regional interconnecting corridors such as China Pakistan Economic Corridor (CPEC) and Central Asia Regional Economic Cooperation (CAREC).

576. The Swat region is very significant with respect to trade due to its connectivity with China through the silk route via Besham, district Shangla. The road access to Swat has recently been improved by the construction of Swat Expressway that connects the Peshawar – Lahore Motorway to Swat through Chakdara. An extension of the Swat Expressway was approved by ECNEC in July 2020 up to Fatehpur that would run through Chakdara, Matta, Mingora, Saidu Sharif, Khwaza Khela. Swat has served as a major trading hub for the Malakand Division and a historical trade route for China. Chinese products are sold in local markets that attract tourists.

577. The main road steers through the main cities of the region and has resulted in the appearance of roadside markets. These roadside markets are also popular amongst the tourists as the region is one of the most visited tourist destinations of the country.

578. Islampur, a small village near Swat city, is a center of textile weaving that produce shawls known as Swat shawls. There are around 200 weaving units in the village that is one of the favorite places of tourists visiting Swat. The produce is sold in around 20 shops inside the village as well as in the main markets of the city. The textile cluster mostly produce shawls for women but also produce the traditional shawls worn by men.

579. The region is also a source of medicinal and aromatic plants that are collected by locals and sold to the dealers having offices in the local markets.

580. The trading enterprises are spread in different parts of the region with some major markets that are listed below:

i. Main bazar, Mingora

ii. Fruit & Vegetable market, Madyan road

iii. People Chowk, Mingora

iv. Naway Kalay Shahdara Mingora

v. Besham Road Khwaza Khela

vi. Muhammad Khan Bazar Matta

vii. Madyan Bazar

viii. Kabal Bazar

ix. Swat shopping center Qambar Mingora

x. Islampur textile weaving cluster

H.6. Industrial Estates/Special Economic Zones

581. The organized industrial establishments of Khyber Pakhtunkhwa comprise of industrial estates, export processing zones, and special economic zones (SEZs). The industries established are mainly developed and managed by the Khyber Pakhtunkhwa Economic Zones Development & Management Company (KPEZDMC) while there are some industrial estates under the control of Small Industries Development Board (SIDB).

582. Special Economic Zone (SEZ) is a blanket term for various types of specialized zones with specific types of enterprises operating in a well-defined geographic area where certain economic activities are promoted by a set of policy measures that are not generally applicable to the rest of the country. The concept of SEZs may be old but the first modern zone is said to have been established in Brooklyn, New York's Navy Yard in 1937.[321] China formally started it in 1970s and established around 2000 SEZ till date. The experience of SEZ is considered highly successful and it provided attractive incentives to FDI.

583. The Government of Pakistan introduced SEZs through the SEZ Act promulgated on 13 September 2012 though some may argue that the Gadoon Industrial Estate established in 1987-88 was the first informal SEZ in the country as the investors were offered unprecedented incentives for establishment of industrial units that lasted for a couple of years. The SEZ Act 2012 provides a well-designed framework to establish and manage the industrial zones. The law provides SEZs to be set up by the Federal or Provincial Governments themselves or in collaboration with the private sector under different modes of public-private partnership or exclusively through the private sector.

584. The Khyber Pakhtunkhwa Economic Zones Development and Management Company (KPEZDMC) was established in 2015 as a section 42 company that is wholly owned by government of Khyber Pakhtunkhwa. The company aims to develop and manage world class

[321] World Bank report on Special Economic Zones 'An operational review of their Impacts'

industrial estates in the Khyber Pakhtunkhwa to help organizing and establishing planned and rapid industrialization in Khyber Pakhtunkhwa. Rehabilitation of the existing industrial estates is also part of the objectives of this company. The company took over the industrial estates developed and owned by the Sarhad Development Authority (SDA) on abolition of the later that was established in 1973 as well as the sole Export Processing Zones (EPZ) in the province located at Risalpur, Nowshera that was developed and managed by the EPZ Authority. The SEZ offers fiscal benefits including a one-time exemption from custom duties and taxes for all capital goods imported into Pakistan for the development, operations and maintenance of a SEZ and exemption from all taxes on income for a period of ten years.

KP Small Industries Development Board

In order to promote and develop industries in KP with particular reference to small and cottage industries, a Small Industries Development Board has been set up under the KP Small Industries Development Board Act, 1972. The Board has the following powers and functions:

i. Render assistance in the establishment and development of cottage, small and other industries.

ii. Give loans for the purposes of small, cottage and other industries.

iii. The general direction and administration of the Agency.

iv. Prepare and submit schemes to Government for the development of cottage, small and other Industries.

v. Laying down policy for the promotion of small industries in the Province.

vi. Sponsoring industries to be set up in the small industries estate.

vii. Taking over and running schemes, project and training intuitions as may be transferred to the Board by Government.

viii. Organizing co-operative societies in furtherance of the purposes of this Act.

ix. Taking appropriate measures for integration of small industries with large industries.

x. Undertaking census and surveys of cottage, small and other industries.

xi. Organizing trade associations and taking other appropriate measures for promoting and marketing the products of cottage and small industries.

xii. Organizing fairs, pavilions, sales and display, of products of cottage and small industries.

xiii. Establishing service centers and common facility centers for specific industries or groups of industries.

xiv. Establishing, in special case and with the prior approval of the Government, small and cottage industries, in less developed areas.

xv. Establishing small industries estates.

xvi. Establishing artisan colonies, design centers, workshops, institutes for promotion and development of handicrafts.

xvii. Taking appropriate means for promotion and development of sericulture.

585. The Small Industries Development Board (SIDB) was created through an act of NWFP Parliament in 1972 to promote small industries. Since then, SIDB has established nine Small Industrial Estates in the province. Besides, SIDB has established training and manufacturing centers for Wood working, Automotive, Carpet, Knitting, Weaving, Stitching and Leather Goods. Small Industries Development Board has established 10 Small Industries Estates (SIEs) throughout the Province, wherein infrastructures facilities such as roads, drainage,

water supply, sewerage system, electricity, Sui gas and telephone etc., have been provided for the establishment of industrial.

586. Currently there is no IE or SIE in Swat even though the area has seen industrial activity due to tax benefits awarded when it was declared a tax-free zone during the merger with Pakistan in 1969. Industries were established on private lands adjacent to residential areas. These industries mainly comprised on textile units followed by cosmetics and plastic manufacturing units.

587. The conflict in 2009-2014 contributed to the closure of many manufacturing facilities in Swat, along with a general lack of competitiveness. A KPEZDMC plan to establish a SEZ at Swat and SIDB is in the process of land acquisition for the small industrial estate that is expected to be launched in 2-5 years. This SEZ will need to be accompanied by an analysis of the (non)competitiveness of local manufacturers as well as a strategy and plan to avoid future closures.

H.7. Services Sector

588. The capacities of existing and incoming workers in manufacturing need to be strengthened to realize the potential profitability of additive manufacturing and other frontier technologies. Skilled trainers, regardless of nationality, must be available and accessible to ensure that the labor force is able to adapt to current and emerging trends in the sector.

589. The construction of Mingora till Nangolai Expressway Phase II has been proposed by the Provincial Government of KP, to provide best communication facilities to District Swat and Shangla and to attract more tourists to the area. Regionally district Swat is also known as mini Switzerland's of the world due to its worth seen sceneries and natural waterfalls. It is in the North West of the country. The Constructions of the Express way from Phase II of the project is also a significant step towards the achievement of the goals fixed by the provincial government in providing roads communication facility which will lead to enhancement of the Government revenue through tourism, easy access of products of Swat District to different areas of the country as well as to develop the marble industry.

590. The tourist destinations in Swat districts are jampacked especially during summer season but in winter as well. The main destinations include Kalam, Bahrain, Miandam, Madyan, Fizagut, and Malam Jabba. In winter tourists come to enjoy snowfall and visit Malam Jabba, which has a skiing resort.

591. The development of the Malam Jabba Ski Resort was a joint effort of Pakistani government and its Austrian counterpart. The resort was leased out by Government of KP to a private entity Samsons Group in 2014 for a period of 33 years. The private company rehabilitated the ski resort as well as the hotel. The hotel is being managed by PC Hotels and Malam Jabba has resulted into a favorite tourist resort of domestic as well as foreign tourists. It has a ski slope of about 800m with the highest point of the slope 2804m (9200 feet) above sea level.

592. Modern facilities including roller/ice-skating rinks, chair lifts, skiing platforms, telephones and snow clearing equipment are available at the resort. These are one of the tourist attractions of the area.

593. Two stations at Malam Jabba provide the facility of chair lift for tourists and couples for their enjoyment. This chair lift can elevate approximately 56 passengers at a time to the height

of 10500 feet. Inside the Malam Jabba resort, the facility of indoor games and other ice games are available. In winters, six to eight feet snow falls around the resort.

594. The internet services started in early 1990s in Pakistan that has developed at a rapid pace and currently close to 30 percent of the population is broadband internet users. This translates into 62 million citizens of the country having access to high speed internet. The e-commerce market has also witnessed phenomenal growth recently in Pakistan where local and International e-commerce companies have captured a sizable market share. There are hundreds of retailers; ranging from clothing outlets to electronic equipment stores; fresh fruit and vegetables to cooked and baked items are now using websites to sell goods to customers.

595. The emergence of several online marketplaces, such as Daraz.pk and OLX Pakistan, has made it easier for retailers to sell goods on the web. Simultaneously, a number of new online businesses have also propped up with different marketing approach including Zameen, Pak Wheels, Food Panda, etc. This development of e-commerce industry has resulted into a major shift in penetrating market and an opportunity for new entrepreneurs to start business through minimum investment in marketplace. At the same time, it opens up new avenues of enterprise creation for women as a solution to the conservative culture and higher level of barriers for them to do business or shop. E-commerce not only brings ease of business but also to shop comfortably through online markets.

H.8. Communication

596. Located in Himalayas, Swat district is a major tourist attraction in Pakistan much celebrated for its scenic beauty. Unfortunately, it got notoriety in world media during the height of terrorism in Pakistan, particularly from 2007 to 2010 when it became a Taliban stronghold. Fortunately, peace has been fully restored to the area and tourists have made a steady comeback. Teeming with tourists during the summer season, Swat's valley has regained its status as a tourist hub.

597. Though the district does not generate much negative news any longer, the media interest in the region has not waned completely. Residents in the region take keen interest in national affairs, watch almost all major television networks and read all major newspapers. Like other parts of the country, state owned broadcasters as well as privately owned radio and television stations command a large audience in the region.

598. Television is the dominant media platform in Pakistan, with more than three-fourths of adults (76.2%) watching weekly. Though this figure is higher in urban (89.3%) than rural (69.3%) areas. Television use also increases substantially with Pakistanis' education level.[322]

599. Cable is the most common form of TV service in urban areas of Sindh, Punjab, and Baluchistan (in urban KPK, it is about as common as use of terrestrial antennas). However, in most of rural Pakistan satellite services and/or use of terrestrial antennas remain more common.

600. About one in six Pakistanis (16.5%) listen to the radio at least weekly. Notably, young Pakistani adults are most likely to listen to the radio weekly or more – 21.2% of those age 15 to 24 do so, with weekly listening trending downward by age group to just 10.4% among those 55 and older. More than two-thirds of weekly radio listeners (71.2%) say they tune in via the

[322] Contemporary Media Use in Pakistan, Pakistan Research Brief, Gallup, 2014

FM waveband, though AM use is also relatively common at 29.7%. About one in eight weekly listeners (13.3%) report using shortwave radio.[323]

601. Where television is available, people rely on it as the major source of news and information. However, rural population continues to rely heavily on radio for information and entertainment. This is particularly true for the mountain villages where cable networks are unavailable. Young urbanites also listen to the radio, often on their mobile phone. But they usually tune in for music and entertainment, rather than news and information.

602. The government-run Pakistan Television Corporation (PTV) retains a monopoly on free-to-air terrestrial broadcasting. As a result, only PTV can be watched without any cable or satellite service; accordingly the channel attracts a good part of the overall TV audience. Private TV channels are only allowed to broadcast on cable, satellite and the internet. Many privately owned television stations broadcast news and current affairs programming.

603. There is no regional television channel located in the district. Most private news channels have their teams, comprising journalists and cameramen, in Swat. Most television channels distribute their programming through private cable networks. These cable services include Swat Cable, Haji Cable, Naveed Cable and Ali Cable.

604. Popular Pashtu channel Khyber TV has a regional set up for Malakand based in Mingora. The channel produces live programs from Swat, mainly covering politics and current affairs. Cable channels also produce local programs.

H.8.1. FM Channels

605. Despite wider access of television sets and mushrooming of television channels, radio has not lost its significance. In fact, it has been able to win a newfound appeal thanks to FM channels that air programmes locally in high quality audio signals. Unlike television, FM channels give listeners flexibility to tune in to their favourite programs while doing other work.

606. Radio remained a medium of choice for many areas of KP and erstwhile FATA during decades of conflict and terrorism and this appeal was not limited to news only. Radio soap operas enjoyed a wide audience and, according to some studies influenced attitudes among their listeners. Radio also provides entertainment through music, drama, talk shows and live sports commentaries. Unfortunately, illegal FM stations run by terrorists played a major role in disrupting law and order during the Taliban insurgency in Swat.[324]

607. Apart from news and entertainment, the FM channels also cover social issues including health, education and sanitation. Because of this wider appeal and low cost, these channels have become important source of public service messaging. The government departments often use FM channels for announcements and public service messaging on health and development issues.

608. There are three FM channels in Swat including one managed by Pakistan Broadcasting Corporation (PBC). Other two include Radio Swat and campus Radio managed by the University of Swat.

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323 Contemporary Media Use in Pakistan, Pakistan Research Brief, Gallup, 2014

324 Role of FM Radios in News and Information: A study of FM Radios in Peshawar, Khyber Pakhtunkhwa, Rahman Ullah, New media technologies, Volume 8 • Issue 2, April / June 2018

Table 40: List of FM stations in Swat Region

S #	FM Station	Geographical Coverage
1.	FM 98.0 – Pakhtunkhwa Radio	Swat
2.	FM 100.0 – Radio Swat	Swat
3.	FM 100.4 – Swat University Campus Radio	Swat

Source: Pakistan Electronic Media Regulatory Authority:
http://site.pemra.gov.pk/uploads/licensing/fm/List_Of_Commercial_FM_Radio.pdf, and
http://site.pemra.gov.pk/uploads/licensing/fm/List_Of_Non_Commercial_FM_Radio.pdf.
https://www.radio-asia.org/fm/fm.php?itu=Pakistan&region=kpk.

H.8.2. Newspapers

609. There are 115 publications registered in KP, out of which 111 are dailies while 4 are weekly publications. Out of these publications, 89 are printed in Urdu, 21 in English and 5 in Pashtu. However, many of these publications are printed in insignificant quantity and some may have gone out of print. Out of these publications, 50 publications are members of the All Pakistan Newspapers Society (APNS), which shows their status as authentic publications.[325]

610. Peshawar and Islamabad editions of national and regional newspapers are circulated in Swat. No major newspaper is printed in the district. However, six local newspapers are published from Swat.

Table 41: List of newspapers and magazines publishing from the Swat Region

S #	Newspaper	Place of Publishing
1.	Awaz-e-Swat	Swat
2.	Azadi	Swat
3.	Chand	Swat
4.	Shamal	Swat
5.	Khabarkar	Swat
6.	Salam	Swat

Source: Directorate General of Information and Press, Government of Khyber Pakhtunkhwa.

H.8.3. Press Clubs

611. The Swat Press Club is an organisation of journalists and professionals working in media in the city. Press club has a membership of 62 working journalists affiliated with both print and electronic media. The press club is led by an elected cabinet consisting of a President, Vice-President, General Secretary, Joint Secretary and Treasurer. There are press clubs in each Tehsil of Swat as well.

H.8.4. Digital Communication

612. In Swat, broadband service is provided by PTCL which is available in all important cities and tourist destinations. 3G and 4G Wireless internet connectivity is also available through all major cellular companies.

[325] List of APNS member organizations, https://www.apns.com.pk/member_publication/index.php.

613. All large hotels in Swat make extensive use of internet to do get reservations. Some tour operating companies also offer package tours online. However, many small businesses are lagging behind and vacation rental online marketplace has not picked up yet.

614. Pakistan's tele-density is 78.84% where the main contribution is by the mobile sector with penetration crossing 76.4%. Growth in broadband has been rapid in both subscription and usage. The country has a total broadband subscriber base of 76.3 million, i.e., 39.25% and 3G/4G penetration is 38.25%.[326]

615. However, many gaps still exist. According to The Inclusive Internet Index 2020, Pakistan fell into the last quartile of countries, overall ranking 76th out of 100 countries (24th out of 26 Asian countries). Besides a low level of digital literacy and poor quality networks, the country also scored poorly in the affordability indicators.

616. Digital marketing is fast gaining popularity in KP. Development of this sector is important because markets of many goods and services produced in KP are located outside the province. For example, KP is a major tourist hub for the whole country and attracts international tourists as well. Apart from the regular businesses, a number of major firms and start-ups use various digital platforms to market their goods and services. Though many businesses market their products and services online, internet remains underutilized. For example, Peshawar is a regional hub of gems and precious stones. These precious stones have an international market. However, this sector hardly makes use of the internet because market still follows old ways of marketing.

617. With regard to international marketing by small businesses and individual entrepreneurs and service providers also face problems due to unavailability of online payment solutions like PayPal that does not offer its services in Pakistan.

618. A number of college and the university of Swat, like other parts of KP, both in the government and the private sector, offer certificates and degree courses in various specializations in information technologies. The Department of Computer Science at University of Swat aims to provide education and training at all levels to contribute to the national pool of computer scientists who can meet the demands of the industry and the academia. These institutions cater to the needs of students from Swat and Malakand division.

619. Online degree courses are offered by two state sector universities i.e. Allama Iqbal Open University and the Virtual University. Due to COVID-19, all major universities have also turned to online education. This experience may prove a turning point for the way education is imparted in KP and Pakistan. In many rural areas, students were not able to make use of this facility and students organized protests in parts of KP, demanding better internet access.

620. In 2011, KP Assembly enacted the Khyber Pakhtunkhwa Establishment of Information Technology Board Act 2011. Under this act, a board of the same name has been established. The board has adopted a Digital Policy for Khyber Pakhtunkhwa that looks at the regulatory, operational and financial challenges to the growth of IT Sector in the province and presents a set of comprehensive recommendations from a provincial perspective to uplift this sector.

[326] Telecom Indicators, Pakistan Telecommunication Authority, August 2020, https://www.pta.gov.pk/en/telecom-indicators.

621. Information Technology has a cross cutting role and its development requires cross-sectoral coordination. In order to make effective use of information technology for development in the region, these links must be fully explored and made use of.

H.8.5. Public Relations

622. The Directorate of Information and Public Relation is the sole and main publicity organ of Government of Khyber Pakhtunkhwa. The department is mandated with the publicity of the provincial government through print and electronic media with the aim to educate and inform the general public about government policies and initiatives undertaken for the public welfare in addition to promoting a soft image of the provincial government and the province. The mandate of the directorate includes: publicity of the government; acting as a bridge between the government & public; issuance of advertisements to the newspapers and magazines; managing media affairs on behalf of the government; management of newspapers, books, magazines, printing presses etc.; regulating motion pictures under the law; production and distribution of films and documentaries of general interests with the consultation of the departments concerned as well as broadcasting and telecasting.

H.9. Economic Impetus for Urban Growth: the Way Forward

623. The Swat District with Mingora as the major urban agglomeration. Mingora contains just over 14% of the provincial population.[327] Unfortunately, job opportunities are relatively limited.

H.9.1. Agriculture

624. With the important role that agriculture has in Swat District, developing the sector provides opportunities for rural residents.

625. Swat is at its heart an agrarian community and agriculture is the main source of income for much of the rural population. The main crops of Swat include wheat, maize, vegetables, tobacco, fruits, soya bean and sunflower. An area of 1180,586 hectares is normally brought under cultivation in Swat including 130,369 hectares in cereal crops, like wheat, maize and rice, 12,218 hectares for fruit orchards and 11,143 hectares for vegetables.

H.9.1.1. Policy recommendations

626. To stimulate household income from farming, two approaches are available. The first is to invest in the technology and knowledge to raise yields for selected crops. The second is to support farmers in transitioning towards higher-value crops with export potential.

627. Yields for wheat and rice in the Swat District are high compared to the average yield in KP. These crops are candidates for expansion, particularly considering the export potential of these crops, though institutional reforms are needed for wheat to become a cash crop for small farmers.

628. The Swat District is famous for producing quality fruits. A variety of fruits like peaches, apple, pear, apricot, plum, persimmon, walnut, etc. are produced and marketed all over the

[327] Development Statistics of Khyber Pakhtunkhwa – 2017, Government of KP.

country.[328] The yields for the traditional fruit production are comparatively low, however, indicating a need for extension services and facilitating investment in modern equipment by small farmers.

629. The altitude and remoteness of rural lands in Swat makes the region very suitable to develop agriculture around potatoes and potato seed for national and international markets, which may provide another avenue for income generation for rural households.

630. Developing the production and market for medicinal and aromatic plants is another way to potentially raise the income of poor households.[329, 330]

631. The livestock and poultry sectors need modern slaughterhouses and atmosphere-controlled storage facilities to grow the local and exports markets. Similarly, the processing and marketing chain of milk needs to be raised to a higher standard. Infrastructure development must be combined with capacity building of farmers and butchers and oversight.

632. Exports of fish are currently small but have growth potential, suggesting this is a sector that, with proper support, can raise the regional economy.

633. Stimulating the number of beekeepers and bee colonies improves pollination and the size and appearance of fruits and nuts.[331] This would further support agricultural yields and enable farmers to realize higher prices.

634. Overall, extension services need to be strengthened. Farmers need to be introduced to modern techniques that reduce waste (e.g., drip irrigation) and improve yields (e.g., commercial seed stock, tunnel farming). Proven technologies suitable to geological, meteorological conditions can be demonstrated in pilot farms and taught to farmers. In the long run, advanced farming technologies (e.g., hydroponic farms) may be explored.[332]

635. Farmers may also not be fully aware of the (inter-) national value chain of agricultural products.[333] Strong extension services raise such awareness, while government or sector agencies should develop the value chain and provide marketing.

636. Considering the tourism potential of Swat, a strategy for tying agriculture into tourism may provide supplemental income and access to foreign currency for farm households. For instance, bee conservation provides an ecotourism narrative and beekeeping itself is even becoming a tourism experience.[334]

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328 Improvement of Food Production in Swat Valley. The Express Tribune, 27 may 2014 (https://tribune.com.pk/story/713923/swat-valley-environmental-catastrophe).

329 Best Practices: Conservation and Sustainable Management of Biodiversity in Khyber Pakhtunkhwa, Pakistan, GIZ, 2016.

330 Agricultural Policy Khyber Pakhtunkhwa. A ten year perspective, FAO, 2015.

331 Klatt BK, Holzschuh A, Westphal C, Clough Y, Smit I, Pawelzik E, Tscharntke T 2014. Bee Pollination Improves Crop Quality, Shelf Life and Commercial Value. Proceedings of the Royal Society B 281: https://doi.org/10.1098/rspb.2013.2440

332 GoKP 2019. Tribal Decade Strategy.

333 GoKP 2019. Tribal Decade Strategy.

334 https://www.positive.news/environment/conservation/bee-tourism/

H.9.1.2. Institutional reforms

637. The government currently acts as a buyer for agricultural crops such as wheat. Small farmers currently struggle to sell in this way. The hurdles they face should be identified and eliminated to level the playing field for all market participants.

638. Regulating supply, demand, and prices diminishes the efficiency of production and markets in general. Deregulating agricultural markets can incentivize farmers to become more efficient, respond to market changes, and achieve economies of scale through industry consolidation.

639. Digital dissemination of market information (expected production, demand, realized prices) is needed to support the income of small farms in particular. If this information asymmetry is eliminated, small farms have a better bargaining position and can reduce profit-taking by middlemen. Apps such as TruTrade and PixFruit have been used successfully by African farmers.

640. Honey producers can encounter problems at checkpoints when transporting beehives. They need support in eliminating such events.

641.

H.9.1.3. Operational recommendations

642. The main fruit and vegetable markets are the most congested areas where farmers, middle-men, dealers, wholesalers, sale agents, retailers, and consumers meet. The markets in all parts of the region lack proper storage capacity, auction sheds, and roads. The existing fruit and vegetable markets need to be upgraded to modern standards and new markets need to be constructed to meet the growing demand:

- Feasibility studies with different investment models for upgradation of fruit and vegetable markets to be prepared for Mingora in year 1 to be executed in in 2-5 years.
- Conduct a survey to identify suitable locations for establishment of fruit and vegetable markets in Swat region in year 1-2.
- Capacity building of market committees and local Government to improve regulatory regime and better implementation.
- Investment generation activities such as road shows and seminars.

643. Currently, there is only one food processing unit ‘Master Foods’ but its capacity is insufficient to service Swat District, let alone surrounding Districts. Warehousing, processing, packaging, and sales services need to be developed further.

644. The livestock and poultry sectors suffer from constraints that must be addressed to raise incomes: chronic shortages of feed/fodder, lack of supporting services (consulting, veterinary, finishing), lack of modern processing facilities, (cold chain) storage and transport, and marketing. Bottlenecks in modern infrastructure must be identified. Solutions must account for the local and regional structure of the production and value chains, which will require detailed studies.

645. Oversight and training for workers need to accompany these infrastructural investments. A public-private partnership model where the government provides suitable land and regulatory support may be productive.

646. Honey producers do not have access to facility for extracting honey, cleaning, bottling, and packaging it. Developing this infrastructure enables a constant and high quality of honey, which improves access to international markets and raises incomes.

647.

H.9.2. Energy, Mining, and Industry

H.9.2.1. Policy recommendations

648. Manufacturing in the Swat District is small, struggling, and hamstrung by its geographic location. It may be unrealistic to expect Mingora to become a manufacturing powerhouse in the medium term. Nonetheless, there is a need to come up with new schemes to attract investment and increase indigenous manufacturing base of the region.

649. Where existing manufacturing companies are suffering because of a lack of competitiveness, further investments should be made only after solid business cases show the decline can be reversed. Overly generous financial support for non-viable activities creates so-called 'zombie firms' that may become reliant on regular infusions of financial support.

650. Similar to the agricultural sector, the industrial sector of Swat may be best served by providing any needed support for its traditional crafts:

- A tradition of woodcarving is borne out by the huge statues of Buddha in Bamiyan, Afghanistan and the elaborately designed statues of Buddha in Swat.
- The goldsmiths of Swat valley have made beautiful jewelry and ornaments that are original and typical of the region.
- Swati embroidery for dresses, shawls, blankets, bed sheets, pillow covers, tablecloths, veils, head scarves, handkerchiefs, etc., has a great significance and has an innovative and creative underpinning. The silver and golden lace embroidery of Swat is famous throughout the country.
- Silk is a regional product that with improved quality can help the community enter new markets and raise incomes.
- The sought-after emeralds from Swat could find another target audience in tourists.

651. While there is mining, small mining operations appear to dominate, which are known to be associated with higher environmental damage.[335] Such negative impacts need to be regulated and reduced.

652. Reviving and strengthening traditional small-scale manufacturing so that there is room for tourists to safely experience unfamiliar production processes, they may open to buying mementos of their holiday. This would help the industry meet competitive pressure from other producers from, e.g., India.[336]

653. GoKP promises to develop local coal resources to generate power.[337] In light of the global climate change debate and the untapped potential of hydroelectric dams in KP,

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335 Hentschel T, Hruschka F, Priester M 2002. Global Report on Artisanal & Small-Scale Mining. International Institute for Environment and Development & World Busiiness Council for Sustainable Development.

336 https://www.dawn.com/news/1151164

337 GoKP 2019. Sustainable Development Strategy. A medium-term development framework 2019-23 for Khyber Pakhtunkhwa.

development of renewable resources promises a more future-resistant path to reliable energy provision. Currently, renewable energy sources are underdeveloped.[338, 339]

654. At the same time, stimulating energy efficiency can both reduce energy demand and power outages and create a new economic sector and employment. Of course, the business case for becoming energy-efficient requires that energy use is metered and paid for.

H.9.2.2. Institutional reform

655. Currently, SIDB is responsible for developing and managing small industrial estates and technical training. It is recommended that the small industrial estates shall be transferred to KPEZDMC in order to have one public entity developing and managing industrial estates/zones.

656. The technical training component of SIDB may be transferred to Technical & Vocational Education Training Authority (TEVTA) that has a training mandate.

657. In general, easy and transparent regulation for new businesses will facilitate economic growth led by the private sector that builds on market opportunities.

H.9.2.3. Operational recommendations

658. An SEZ at Swat can be established within the next 3-5 years in order to support industrialization in the area. The SEZ is suggested to be focused on food processing in order to utilize the local produce.

659. Developing small industrial estates in different parts of the region that require lesser investment and are smaller units brings manufacturing within reach of smaller investors. It is recommended to develop small industrial estate in Swat region that focus on traditional products, including units for marble, furniture, emeralds and jewelry, silk, honey etc.

660. Support can take the form of soft loans and grants to upgrade facilities relevant to each traditional product and supporting infrastructure such as roads, warehouses, uninterrupted supply of utilities, sewerage, waste management, environmental protection, labor accommodation, transport facilities, etc.

H.9.3. Services

H.9.3.1. Policy recommendations

661. Trading enterprises are mostly situated on the roadside along the main road/ Highway in an unorganized manner that makes future expansion a problem. A trend of constructing bigger shopping plazas along the roadside has increased in the past decade. Future trading plazas need better planning and the existing markets need to be improved to modern standards.

662. Shopping centers have been constructed Mingora and Saidu Sharif but more modern shopping centers/malls are needed with efficient land use through more floors, proper parking

338 GoKP 2020. Proposed Land Use Plan for the District Peshawar

339 GoKP 2020. Final Land Use Plan of District Mardan

spaces, security arrangements, central air-conditioning, access for women and the disabled, children's play areas, restaurants, banks, health clinics, etc.

663. It is recommended to promote establishing of modern shopping centers in Mingora and Saidu Sharif in the next three years and in Khwaza Khela, Matta and Kabal in five to ten years. Government support may be in the shape of including commercial plots specified for shopping centers in the master plan. The investment is going to be made by private sector but it needs transparent building regulation to encourage investment.

664. The IT industry has shown promising growth for Pakistan in the last five years. The software export has become a billion-dollar industry in a few years and freelancer are earning an equal amount of income. The Government needs to support this sector and establish a software park replicating the model of Pakistan Software Export Board that was established at Peshawar.

665. Such initiatives should be supported in other parts of the region as well, in collaboration with educational institutions and private companies. Small businesses and entrepreneurs often struggle to adopt to digital marketing. They need training opportunities as well as digital platforms and portals where they could market their goods and services. Availability of training opportunities and facilitation in creation of such platforms can go a long way in promoting business activities and creating new employment opportunities.

666. Promotion of online business is not possible without ensuring availability of reliable, safe and easy to use online payment solutions. Provincial authorities should work closely with the State Bank of Pakistan and private companies to ensure availability and promotion of such solutions among the business community.

H.9.4. Communication

H.9.4.1. Effective Use of Media

667. Like other communication efforts, working with the news media is done best when it is based on a strategy and follows a systematic process. As in other communication initiatives, assessing the needs of the audience—journalists—is important to reaching them effectively. The most important task of media relations is to find newsworthy information and to present it to journalists accurately and in ways that they can use. Some of the proven techniques, methods, and materials include:

- Providing accurate, timely, and interesting information.
- Collecting and analyzing information about the news media's interests and needs.
- Producing news releases, feature stories, opinion pieces, newsletters, and other readily usable material.
- Preparing press kits, fact sheets, experts lists, and other aids for journalists.
- Presenting story ideas to journalists, and responding to their requests for information and assistance.
- Arranging and assisting with news conferences, site visits, and other events that interest the news media.

- Helping journalists make contact with program staff, including arranging interviews.
- Dealing with opposition and public controversies when they arise, and countering false rumors.

H.9.4.2. Building Capacity of Media

668. Media is focused on reporting events. Most journalists lack the capacity to dig deep and report processes. Therefore, development reporting remains underdeveloped in the province as well as the country As a result, government's development programmes often get ill-informed criticism. It is the right of the media to work as a watch dog and point out mistakes of the government and state institutions. However, criticism can be counterproductive if such criticism is ill informed.

669. The KP government should build bridges with media and organise trainings for media persons on development journalism as well as speciality reporting including education reporting, health reporting and municipal reporting.

H.9.4.3. Make Effective Use of Social Media

670. Social media are revolutionizing the basic rules of engagement. Where traditional media messaging was one-way, controlled, and relevant primarily to the organization, social media are networked, free-flowing and relevant to the participants. The principles of social media are sometimes referred to as ‘democracy in communications’.

671. The social media can play a major role in information sharing, social mobilization and public relations. Departments can use social media to build awareness, create a network of supporters and empower its supporters to spread their message. Departments should make an active use of Facebook, Twitter, Instagram and YouTube as social media tools. Social media should also be used to encourage interaction and participation in city programs. Social media tools can also be used to increase engagement efforts to involve the public in the development of a strategic plan and annual budgets.

H.9.4.4. Implement Digital Policy

672. KP's digital policy outlines an excellent framework for development of the IT sector. If implemented well, province can make major strides to overcome its challenges and achieve its ambitions.[340]

673. In order to achieve ambitious goals outlined by the digital policy, fast and affordable internet connectivity must be made available to most citizens in the province. Though the PTCL telephone exchanges in most cities are linked through optical fibre lines, exchange to home optical fibre services are very limited. Enhancement of optical fibre infrastructure can ensure availability of economical and high speed broadband to businesses and citizens.

674. Unavailability of reliable internet service may also discourage national and international tourists from visiting popular tourist destinations in KP. Ensuring availability of internet in such areas can help in promotion of tourism in the province.

[340] Khyber Pakhtunkhwa Digital Policy 2018-2023, Khyber Pakhtunkhwa Information Technology Board, Government of Khyber Pakhtunkhwa.

675. Small businesses and entrepreneurs often struggle to adopt to digital marketing. They need training opportunities as well as digital platforms and portals where they could market their goods and services. Availability of training opportunities and facilitation in creation of such platforms can go a long way in promoting business activities and creating new employment opportunities.

676. Creation of Economic Zones under CPEC and Economic Corridors can be a game changer for the province. It can bring back the past glory of a trading hub to Peshawar- a city that linked Central Asia with South Asia and beyond. Realization of this dream is not possible without harnessing the potential of digital technology and ensuring availability of fast internet access to businesses and citizens.

677. Promotion of online business is not possible without ensuring availability of reliable, safe and easy to use online payment solutions. Provincial authorities should work closely with the State Bank of Pakistan and private companies to ensure availability and promotion of such solutions among the business community.

I. MUNICIPAL SERVICES

678. Responsibility for the provision of basic municipal services is shared between a number of organizations, as discussed in Section D.3.3 above. In the main urban center of Mingora, the Water and Sanitation Services Company Mingora (WSSCM-S) has the sole responsibility for providing water supply, sanitation (drainage and sewerage), and municipal solid waste services throughout all of the city.

679. The geographical area of WSSCM-S services covers nine (9) urban UCs: Amankot, Banringaro Darai, Gulkada, Malkanan Landakass, Malok Abad, Rahim Abad, Rang Muhallah, Saidu Sharif and Shahdara Nawan Killi. As per 2020 population estimates, 369,662 people resided in Mingora (census 2017: 331,091 people, 41,301 households). The city's growth is comparatively rapid, with a projected increase of population in the service area of more than eleven and a half per cent (actual: 11.65%) in the last three (3) years since the 2017census.

680. WSSCM-S took over operation of the water, sanitation, and solid waste management sectors from the TMA with effect from January 2018. Elsewhere in the region, the TMAs (TLGs) retain responsibility for providing municipal services in all other urban centers aside from Mingora.

681. In the absence of any data to the contrary it is assumed that the TMAs in the other urban centers in the region provide services to the population within all of their respective urban limits. The estimated populations in 2020 for the main urban centers in the region, other than Mingora, are (Appendix 1):

- Barikot City, 104,066.
- Behrain City, 66,635.
- Kabal City, 129,438.
- Khawaza Khela City, 53,406.
- Matta City, 48,398.

682. In total the population in the urban centers in the region is estimated in 2020 to be 771,605, based on intercensal growth rates, with Mingora accounting for approximately forty-eight per cent (48%) of the region's urban population. The urban population, within the official urban boundaries, represents approximately thirty per cent (30%) of the total estimated population of Swat District in 2020.

I.1. Water Supply

I.1.1. Current Status

683. Virtually all of the potable water supply throughout the region is met from groundwater sources. The review below is focused on Mingora City in the absence of data from other urban centers in the region.

684. In practice, the abstraction of groundwater is not controlled or regulated. Any individual or company or institution may sink its own well to abstract groundwater. There are no limits, other than the actual recharge capacity of the well, to restrict the amount of water that may be

abstracted. The cone of depression (drawdown) or radius of influence of individual wells does not appear to be a consideration when locating and developing groundwater wells.

I.1.1.1. Mingora

685. The municipal water supply system in Mingora is fed currently entirely from groundwater sources, comprising a mix of individual water supply schemes fed by tube wells, supplemented by open/dug wells, hand pumps and private bores.

686. There are currently sixty-four (64) water supply distribution networks, each fed by a single tube well. Four of the tube wells are reported to be non-operational, as of February 2020[341], apparently related to problems with the existing pumps.

687. In 2018-2019, WSSCM-S restored five (5) abandoned water supply networks, replaced eight (8) old turbine pumps with new submersible pumps, reconstructed six (6) pumping chambers and constructed six (6) new tube wells.[342]

688. The distribution network is spread over a large area, with elevation ranges from nine hundred and twenty (920) to eleven hundred (1,100) meters. Accordingly, the water supply network is divided into several pressure zones. Each pressure zone has its own set of tube wells installed. Groundwater is pumped from the tube wells to overhead reservoirs and then distributed under gravity-fed pipelines. In a few cases, direct pumping from source to distribution network also occurs.

689. The mode of operation is intermittent, primarily on account of high energy costs related to pumping.

690. There are no bulk flow meters on any of the tube well pumps; therefore, the actual quantity of water produced is not known and can only be estimated. Based on the current conditions, operating capacities and operating hours of the tube wells and associated pumps (typically operating up to twelve (12) hours per day), the maximum available groundwater supply at the point of production in the municipal system is approximately 26.15 million liters/day (26,150 m^3/day) (Table 42).

Table 42: Groundwater supplied municipal water supply system under WSSCM-S responsibility

Description	Operational	Nonoperational	Current Total Operating Capacity
Tube wells[1]	64	4	26.15 million liters per day or 5.76 million gallons per day)
Overhead reservoirs	24		
Distribution networks	64		
Filtration Plants			
Flow meters			
Chlorination units			

Source: Annual Report. 2018-2019, WSSC Mingora.

341 CEC Consultants and Minconsult. Khyber Pakhtunkhwa Cities Improvement Project (KPCIP). Situation Analysis Report, February 2020.

342 WSSC Mingora. Annual Report 2018-2019.

Note: In the absence of flowmeters on the tube well pumps, the estimated operating capacity has been derived assuming an average of 12 hours pumping per day and a pump capacity of approximately 10 liters/second (8,000 gallons per hour).

691. The distribution network, mostly comprising galvanized iron, asbestos cement and HDPE pipes, is almost thirty (30) years old and in need of replacement and/or repair. In places the distribution network passes through sanitation drains; leaking pipes are prone to cross-contamination. As is common in many urban centers, WSSCM-S have reported the presence of significant leakage from old and rusted pipes, the need to replace such pipes to reduce high levels of non-revenue water (NRW) and the extensive use of asbestos cement pipes, the latter giving rise to potential health concerns from ingestion of asbestos fibers.

692. The total length of the distribution network under WSSCM-S' jurisdiction is approximately 110 km. Not all streets have distribution networks laid out for water supply. In some streets, the residents have constructed private pipelines connected to nearby rising mains for water supply.[343]

693. In the UCs under WSSCM-S' jurisdiction (2020, estimated population 369,662), the potential available water is calculated to be approximately 70 liters per capita per day (lcpd), before losses, based on the maximum produced water per day.

694. WSSC Mingora estimate that Non-Revenue water (NRW) and unaccounted for water in Mingora is at least sixty per cent (60%) of the produced groundwater and possibly much higher. Based on this level of losses the available water at consumer level is calculated to be around 28 lpcd. This is well below the service level assumed to be the minimum (50 lcpd) to cater for basic consumption needs and maintain adequate levels of personal and food hygiene.[344]

695. Due to an insufficient and inadequate distribution system, certain areas even within the served UCs are not supplied with water from the municipal system. On average, a typical consumer has access to one (1) hour's water supply on a daily basis. The supply is intermittent and often very irregular. This ensures that pressure is not maintained in the system, thereby allowing the potential ingress of contaminants into the pipelines giving rise to downstream deterioration of water quality.

696. The potential demand for potable water is estimated to be approximately 49,905 m^3/day, on the basis of a demand of one hundred and thirty-five (135) lpcd. The maximum available production, before losses, is calculated to be approximately fifty-two per cent (52%) of the projected potential demand. Taking into account losses of up to sixty per cent (60%), the available production is sufficient to cater for only around twenty-one per cent (21%) of the estimated potential demand.

697. WSSCM-S reported that, in 2019, several additional water supply schemes were in progress and there were plans under the USAID funds and Provincial annual funds to construct an additional twenty-one (21) schemes in 2019-2020. Even with completion of these schemes the available supply would be insufficient to cater for the projected demand.

343 CEC Consultants and Minconsult. Khyber Pakhtunkhwa Cities Improvement Project (KPCIP). Situation Analysis Report, February 2020

344 WHO. 2003. *Domestic Water Quantity, Service Level and Health*. Geneva: World Health Organization.

698. The number of registered water connections in the served area was 23,564, as of February 2020.[345] No breakdown of the registered users by UC has been seen to date. The number of recorded active connections represents around half of the households in the area served by WSSCM-S at this time. Correspondingly, the number of illegal connections is high, in excess of thirty per cent (30%) impacting the ability of WSSCM-S to recover the costs of operations.

699. Pakistan Council of Research in Water Resources (PCRWR) published a water quality assessment report for Mingora in 2018.[346] Over five hundred (500) samples of water were tested, obtained from a variety of sources including tube wells, hand pumps, dug wells, bores, storage tanks, springs, taps and supply lines, covering both sources and components of the distribution system up to the point of consumption.

700. Overall, fifty-five per cent (55%) of the samples tested were found to be contaminated, primarily by coliforms.

701. Ninety per cent (90%) of the samples obtained from tube wells were found to be safe in accordance with National Drinking Water Standards. Ten per cent (10%) were found to be contaminated by coliforms. It is noted that there are currently no disinfection (chlorination) units installed on any of the tube wells.

702. Other sources, from which groundwater was obtained from shallow depth, contained higher levels of contamination with coliforms, typically in excess of thirty-five per cent (35%) and as high as fifty-five per cent (55%) for open wells.

703. Households unserved by the municipal water system rely on shallow tube wells, and motor pumps and hand pumps. Because of the shallowness of the water table, it is prone to contamination from poor household sanitation practices.

704. Water in the distribution system – supply lines and storage tanks – and at the point of consumption demonstrated persistent contamination with greater than sixty-five per cent (65%) of the samples considered to be unsafe, as per National Drinking Water standards. Subsequently, WSSCM-S have begun to chlorinate the water in the storage tanks and have provided individual households with aqua tabs in order to improve water quality at consumer level.

705. In summary, the present municipal water supply for Mingora City:

- Relies solely on groundwater sources.
- Has insufficient infrastructure to meet the estimated demand from the urban area.
- Cannot operate for significant parts of the day because of high energy costs for pumping, thus limiting the pumping and distribution capacity of the system to meet the estimated demand for potable water.

[345] CEC Consultants and Minconsult. Khyber Pakhtunkhwa Cities Improvement Project (KPCIP). Situation Analysis Report, February 2020

[346] Imran S., L. N. Bukhari. and Gul S. (2018). Water Quality Assessment Report: Mingora City District Swat Khyber Pakhtunkhwa 2018. Pakistan Council of Research in Water Resources (PCRWR), pp. 40.

- Meets only about one quarter of the estimated demand and provides only an intermittent supply.
- Has high water losses in parts of the distribution system, the magnitude of which has yet to be quantified accurately.
- Only about fifty per cent of the households are legally registered users.
- Suffers from poor quality water at the consumer level, often unfit for human consumption, because of cross-contamination from other sources of pollution.

706. There are a number of significant issues associated with the current water supply. Aside from the lack of capacity to satisfy the demand, the current reliance on groundwater has resulted in significant drawdown of the groundwater table in the Swat valley around Mingora. In last year alone, it is reported that thirteen (13) meters of drawdown has been observed in some areas.[347]

707. Even though the current tube wells are insufficient to cater for the demand, it is evident that the amount of pumping currently exceeds the recharge of the groundwater system. In addition, as the water table declines, this leads to a reduction in well yields and increasing costs for pump operation. According to WSSCM-S around sixty-five per cent (65%) of their total annual operational expenditure is accounted for by energy costs alone.[348]

708. Another significant factor is the unplanned sprawl of the city into elevated, previously low-density, areas outside of the valley. The distribution network in these areas was not planned to cater for the increase in housing density now being witnessed, nor has it the capacity to serve these areas. In some areas there is no distribution network in place.

I.2. Sanitation and Drainage

I.2.1. Current Status

709. There is no comprehensive sewerage network installed in Mingora. Similarly, there are no sewerage lines/networks in any other urban center in the region.

710. In Mingora over ninety per cent (90%) of the population is reported to have access to flushing latrines; waste is discharged either to septic tanks or directly to open drains or natural water ways near their homes. The situation is the same for all other urban centers in the region.

711. The existing sewerage/storm water systems serving urban areas are, typically, combined systems that convey domestic, commercial and industrial wastewater. The same systems also carry the surface runoff (storm water) during rain events. The combined flows are mostly conveyed by open or covered drains.

712. The majority of Mingora city still lacks any basic sewerage system, including drains and sewage pipes. Available drains are open and discharge into existing water bodies without any form of treatment.

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347 CEC Consultants and Minconsult. Khyber Pakhtunkhwa Cities Improvement Project (KPCIP). Situation Analysis Report, February 2020

348 Ibid.

713. Existing drains, mostly rectangular secondary and tertiary drains, collect and convey raw sewage into primary drains which transition into natural Nallahs or Khurr before discharge into the Swat river.

714. Surface water drains are often encroached or clogged resulting in parts of the urban areas being susceptible to flooding during rain.

715. Currently there is no wastewater treatment plant for Mingora. There are no STPs anywhere in the region.

716. In all urban centers, water supply pipelines are often co-located in, or cross, open sewers and drainage channels which convey untreated wastewater. Significant potential exists, therefore, for poorly maintained and leaking drinking water networks to be contaminated by untreated sewage and wastewater.

717. In summary, the present sewerage and drainage systems for Mingora City and other urban centers in the region:

- Are combined systems for drainage and sewerage.
- Are highly polluted since they receive untreated sewage and wastewater from all sources.
- Impact the quality of the potable water distribution system.
- Provide no treatment capacity for sewage and wastewater in the absence of any sewage network and wastewater treatment plants.
- Convey all raw sewage eventually to natural streams and watercourses which discharge ultimately to the Swat river.

718. Based on the 2020 population estimates, the urban centers in the region are estimated to generate of the order of 69,450 m^3 of sewage and wastewater per day, assuming a water supply of one hundred (100) liters per capita per day, of which ninety per cent (90%) translates into wastewater:

- Mingora City – approximately 33,270 m^3 per day.
- Barikot City – approximately 9,370 m^3 per day.
- Behrain City – approximately 6,000 m^3 per day.
- Kabal City – approximately 11,650 m^3 per day.
- Khawaza Khela City – approximately 4,800 m^3 per day.
- Matta City – approximately 4,360 m^3 per day.

719. Given that Behrain City, Khawaza Khela City and Matta City all lie upstream of Mingora City the wastewater from these cities (estimate of 15,160 m^3 per day) will contribute to the flow of the Swat river passing through Mingora City.

I.3. Solid Waste Management

I.3.1. Current Status

720. In Mingora, existing collection systems for solid waste comprise:

- Hand/push carts and wheelbarrows for primary collection.
- A mix of small bins (0.8 m^3 capacity) and large skip containers (7 m^3 capacity) also for primary collection.
- A mix of manually loaded tractor trolleys and mini dumpers and mechanically loaded multi-loaders and compactors for secondary collection.

721. Primary collection is undertaken typically by temporary disposal to street-side collection points and containers (steel bins, hook lift bins and skip bins), for onward loading into, or onto, secondary collection vehicles. In total, there are two hundred and ten (210) bins and containers located in the nine (9) UCs currently being serviced by WSSCM-S.

722. WSSCM-S are currently unable to service the whole of the city. In the period April to June 2019, WSSCM-S provided basic waste collection services to approximately fifty per cent (50%) of the population in the city.[349]

723. Summary details of the capacity of the current collection fleet and equipment are provided on Table 43.

Table 43: Current operational collection and street cleansing fleet, WSSC Mingora[1]

Item	Capacity m^3	No.	Year Acquired
Containers	0.8	140	
Skip truck/tractor trailer container	7.0	70	
Mini dumper	1.0	7	
Compactor truck		4	
Dump truck		3	
Multi Loader/Skip Loader		8	
Tractor trolleys		2	
Tractor with shovel		2	
Tractor-mounted Sweeper		1	

Source: WSSC Mingora
Note [1] Wheelbarrows and push carts are also used for primary collection.

724. In addition to the collection bins and containers, there are also a large number of informal primary dumping locations where waste generators (residents and commercial establishments) dump their waste indiscriminately on the roadside or in vacant plots. Some of these are serviced on a regular basis, but other locations can crop up indiscriminately at any time.

349 WSSC Mingora Annual Report 2018-2019.

725. Large quantities of waste are also dumped in the drainage systems in densely populated areas. Drain cleaning and de-silting is required on a frequent basis.

726. The management of solid waste in other urban centers is anticipated to be similar to that of Mingora, although with a greater reliance upon tractor trailers. Details of the collection vehicles used in other urban centers are not currently available

727. WSSCM-S has a shortfall in the number of sanitary workers required to service the city. As of the period April to June 2019 WSSCM-S employed 223 sanitary workers, which is less than fifty per cent (50%) of the calculated requirement based on the population of the city.

728. Aside from a lack of sanitary workers, WSSCM-S also have insufficient equipment (bins and vehicles) to cater for the whole of the service area. For the period July 2018 to June 2019 inclusive, WSSCM-S estimates that it collected and disposed an average of approximately sixty-five per cent (65%) of the waste generated. This is a significant improvement from thirty-five per cent (35%) in the previous year.

729. The quantity of waste lifted by any of the collection services, however, is not known with any degree of accuracy. WSSCM-S indicate that an average of approximately one hundred (100) to one hundred and five (105) tons per day of waste is collected and disposed, based on the capacity of the secondary collection vehicles and the number of trips made to the disposal site.

730. There are, however, no independent measurements of waste generated or of waste collected. The above estimates are likely to include not only municipal solid waste but also construction and demolition debris and soil and sediment from drain cleaning and street sweeping.

731. The derived per capita waste generation rate, assuming only fifty per cent (50%) of the population is served currently, is approximately 0.60 kg per person per day. This is on the high side compared to other cities in KP and is assumed to reflect the inclusion of silt from drain cleaning. In the absence of a waste characterization survey, there is no city-specific information available in respect of waste generation rates and waste composition.

732. Estimates of the waste generated in the other urban centers in the region, based on the estimated 2020 population, and assuming similar, but lower, waste generation rates to that of Mingora, are summarized in Table 44.

Table 44: Estimated waste generation of urban centers in the region

Urban Center	Estimated Urban Population (2020)[1]	Served Population	Service Coverage	Estimated Waste Generation Rate (kg/person/day)	Estimated Waste Generated (tpd)
Mingora	369,622	185,000	50%	0.60	111.0
Barikot	104,066	52,000[2]	50%	0.35	18.2
Behrain	66,635	33,300[2]	50%	0.30	10.0
Kabal	129,438	65,000[2]	50%	0.35	22.8
Khawaza Khela	53,406	26, 000[2]	50%	0.30	7.8
Matta	48,398	24, 000[2]	50%	0.30	7.2

Source: Calculations by the project consultant.
Notes: [1] Refer to Appendix 1.c.
[2] Assumed – to be verified.

[3] Excludes cantonments

733. Based on Table 44, it is estimated that approximately one hundred and seventy-seven (177) tons per day of municipal solid waste is generated by the served population and, overall, approximately three hundred and fifty-five (355) tons per day in the main urban centers in the District.

734. Uncollected waste is burnt, re-used or recycled or disposed into drains and canals. Hospitals and medical clinics will also generate relatively large amounts of hazardous clinical waste that is not separated from municipal waste.

735. Overall, the methods employed for waste collection are labor intensive, slow, inefficient and unhygienic, exposing personnel to unnecessary risks. The transfer of uncovered and unconfined waste by tractor trolley and open dump trucks results in increased littering during waste collection and transportation. Significant odors are also associated with this method of transportation, affecting urban populations since tractor trolleys and dump trucks travel on main roads through populated areas. The slow speed of collection and travel also increases congestion on the main collection routes.

736. The payload of tractor trolleys is low compared to the use of compactor trucks. In-vehicle densities of waste are typically 1.5-2.5 times higher in compactor trucks than in open, uncompacted trolleys. Allied with the greater capacity of medium to large-sized compactor trucks (for example, $8m^3$ or $13m^3$ as against 4-5 m^3 for trolleys) the waste load carried by compactor trucks is significantly higher than achieved by tractor trolleys. As a result, the use of tractor trolleys is known to be the least cost-effective method of collecting and transferring waste. Tractor trolleys have the highest cost for waste transportation on a per ton basis.

737. WSSCM-S are also responsible for cleaning of drains and street sweeping. Approximately 185.4 km of drains were cleaned on a quarterly basis in the year 2018-2019, with each sanitary worker responsible for cleaning 15-25 m of drain daily.[350] Without regular cleaning of the drains they become clogged with waste resulting in flooding of the streets.

738. There are approximately 52.5 km of roads within the jurisdiction of WSSCM-S, of which an average of 21.1% were swept on a daily basis in the period July to September 2018, increasing progressively to 31.1% in the period April to June 2019.[351]

739. There is a single transfer station in Mingora, although the available area is small (0.3 ha). There are no transfer stations in any of the other cities in the region. Generally, waste transportation is undertaken solely by waste collection vehicles, thus restricting their availability to collect waste.

740. Currently, there are no sanitary or controlled landfills for the disposal of waste anywhere in the region. Disposal is to unhygienic and unsanitary open dumps.

741. The current disposal site for Mingora is located at Kawtharo Maria approximately 6 (six) km east of the city center. The site extends to approximately three (3) hectares; WSSCM-S has commenced waste disposal at the site recently.

742. There are no formal facilities or systems for the recovery and treatment of solid wastes. Materials that are diverted from the waste stream are limited to those extracted through

350 WSSC Mingora Annual Report 2018-2019

351 Ibid.

informal materials recovery at household level and via waste pickers at disposal sites. Burning of waste at the dump sites is common, typically used to make it easier for waste pickers to recover recyclable material like metal and glass from the waste mass.

743. In summary, the present solid waste management system for Mingora and other urban centers in the region:

- Is limited in Mingora City to primary and secondary collection to approximately fifty per cent (50%) of the population within the service area of WSSCM-S.
- Have insufficient equipment to be able to collect all of the MSW generated daily throughout the city or even within the served areas.
- Have no facilities to treat waste in order to reduce the waste disposed to land.
- Rely on unsanitary open dumping of municipal solid waste outside of the current city limits but often in populated areas along the main access road to the city.

I.4. Effective and Efficient Urban Services: the Way Forward

I.4.1. Key infrastructure Investments and Priorities

744. The major obstacles to well-managed, prosperous, safe and healthy cities is perceived to be the weak institutional capacity of the municipal authorities, which manifests itself through:

- Lack of planning and transparent development in accordance with approved plans.
- Lack of enforcement of existing regulations pertaining to planning and building control.
- Unregulated slum developments.
- Unregulated and unchecked urban sprawl.
- Inadequate and reliable provision of water supply of good/acceptable quality.
- Inadequate provision of basic sanitation services.
- Inadequate provision of services for the management of solid wastes.
- Unreliable power supply.
- Highly congested and poorly maintained urban roads.
- Lack of public transportation facilities and integrated transportation systems.
- Pollution of waterways, groundwater and the general urban environment.
- Lack of employment opportunities and economic development.

745. The aspiration should be to provide basic municipal services (water supply, sanitation and solid waste management) to all of the population, households and commercial and institutional properties within the service area. For example, one Sustainable Development Goal adopted by the Government of Khyber Pakhtunkhwa is to achieve universal and equitable access to safe and affordable drinking water for all by 2030. The speed at which

this, and full access to other municipal services, can be achieved is dependent primarily upon access to appropriate levels of financial and technical resources.

746. As has been noted in Sections I.1 to I.3 above, the provision of municipal services within the current service areas of the main urban centers is deemed to be sub-standard, from social, public health and environmental perspectives. Key indicators in this regard are:

- Potable water supply: inadequate systems and networks to provide sustained access to sufficient water of an acceptable quality fit for consumption.
- Sewerage: no facilities for the treatment of wastewater and sewerage and the discharge of untreated wastewater to surface water bodies draining through the urban areas.
- Solid waste management: typically, less than fifty per cent (50%) of the municipal solid waste generated is collected and zero per cent (0%) is treated or disposed in a sanitary or environmentally-secure manner.

I.4.2. Water Supply

747. Universal and equitable access to safe and affordable drinking water for all by 2030 is one of the Sustainable Development Goals adopted by the Government of Khyber Pakhtunkhwa. Based on this goal, the following will need to be achieved over the next ten (10) years:

- A progressive increase in supply availability through step-wise investments in water production.
- Progressive improvement in the condition of the water distribution system.
- Progressive reduction in the number of illegal connections.
- Progressive extension of the municipal water production and distribution system to cover the whole of the current urban areas, so as to provide access to an adequate supply at household level available on a 24/7 basis.

748. Progressive extension of the municipal water production and distribution system to cover the whole of the current urban areas, so as to provide access to an adequate supply at household level available on a 24/7 basis.

749. The latter objective may be difficult to achieve but, nevertheless, should be viewed as an aspiration to work towards.

750. Based on the above, target service levels for municipal water supply have been developed, at five yearly intervals for the period up to 2045 and are set out on Table 45.

Table 45: Proposed target service levels for municipal water supply in urban areas

Year	Mingora (2020)		Other Urban UCs	
	Service Coverage	Target Minimum Supply (lpcd)	Service Coverage	Target Minimum Supply (lpcd)
2020	80%	90	25%	50
2025	90%	105	50%	65

Year	Mingora (2020)		Other Urban UCs	
	Service Coverage	Target Minimum Supply (lpcd)	Service Coverage	Target Minimum Supply (lpcd)
2030	100%	120	100%	80
2035	100%	140	100%	100
2040	100%	150	100%	125
2045	100%	150	100%	150

751. Based on the target service levels and coverage in Table 45, potable water demand has been calculated for each urban center based on projected populations up to 2045 using the medium-variant population growth estimate (Appendix 1). The calculated water demands are summarized in Table 46.

Table 46: Projected potable water demand in served areas for urban centers in the region[1]

Year	Mingora		Barikot	Behrain	Kabal	Khawaza Khela	Matta	Total Demand [3]
	Population [2]	Demand [3] (m^3/day)	Population [2]	Population [2]	Population [2]	Population [2]	Population [2]	(m^3/day)
2020	366,493	26,387	104,030	66,585	128,879	53,400	48,391	31,404
2025	432,529	40,874	122,215	75,221	148,601	63,483	59,466	56,351
2030	505,647	60,678	142,261	84,384	169,948	74,726	72,223	104,161
2035	583,398	81,816	163,761	93,866	192,455	86,916	86,479	144,163
2040	667,530	100,130	186,370	103,512	215,750	99,864	102,053	188,573
2045	755,916	113,387	210,321	113,423	240,071	113,710	119,143	232,888

Source: Calculations by the project consultants.

Notes: [1] This assessment excludes any requirement for fire-fighting and any potential demand from industry.
[2] Population estimates as per Appendix 1.c., medium variant.
[3] Based on target service levels and coverage as per Table 45, on the basis that all urban centers are served. Total calculated demand is for Mingora City and five other urban centers combined.

752. The calculations presented in Table 46 indicate significant increases in demand for potable water in served areas over the next twenty-five (25) years for all urban areas throughout the Swat river valley. For Mingora which, as noted in Section I.1, is already facing a significant deficit in its ability to provide an adequate water supply, the projected demand will more than double based on population growth alone, without any consideration of extending the supply to unserved areas or increasing the supply to areas that are provided currently with an inadequate supply. Similar increases are projected throughout all urban centers in the Swat valley.

753. It is evident that the existing water supply systems in all urban areas will be unable to supply the additional resources required in the foreseeable future. For example, with reference to Mingora City, the projected potable water demand, based on Table 46:

- 2025: 40,874 m^3/day, fifty-six per cent (56%) more than the current maximum production capacity of existing supply sources.
- 2030: 60,678 m^3/day, approximately two hundred and thirty two per cent (232 %) more than the current maximum production capacity of existing supply sources.

- 2035: 81,816 m^3/day, approximately 3.1 times the current maximum production capacity of existing supply sources.
- 2040: 100,130 m^3/day, approximately 3.8 times the current maximum production capacity of existing supply sources.
- 2045: 113,387 m^3/day, more than 4.3 times the current maximum production capacity of existing supply sources.

754. The projected potable water demand excludes any provision for water losses. The production capacity needs to be greater than the projected demand to cater for unaccounted water losses. Accordingly, by way of illustration, the required production capacity (Table 47) for Mingora City has been assessed based on the following assumptions:

- Sixty per cent (60%) unaccounted water loss estimated in 2020.
- Unaccounted water loss reduced to forty per cent (40%) by 2025.
- Unaccounted water loss further reduced to twenty-five per cent (25%) by 2030.
- Unaccounted water loss of fifteen per cent (15%) assumed by 2035 and beyond.

Table 47: Projected water production requirement to serve Mingora City[1]

Year	Demand (m^3/day) [2]	% Water Loss [3]	Volume of Unaccounted Water (m^3/day)	Total Production Requirement (m^3/day)
2020	26,387	60	39,581	65,969
2025	40,874	40	27,249	68,123
2030	60,678	25	20,226	80,904
2035	81,816	15	14,438	96,254
2040	100,130	15	17,670	117,799
2045	113,387	15	20,010	133,397

Notes: [1] This assessment excludes any requirement for fire-fighting and any potential demand from industry.
[2] From Table 46.
[3] Target values, requiring a sustained program and specific interventions to reduce leakage from the distribution system and to eliminate illegal connections.

755. In order to ensure a safe, reliable and adequate potable water supply for Mingora City and other urban centers, it is considered essential that the municipal water supply system is expanded to cover all of the present and future urbanized area and the production capacity enhanced. The extension of the municipal water supply system also has the benefit on controlling unregulated abstractions which, as demand increases, would result in uncontrolled groundwater depletion. Provision for fire-fighting also needs a suitable and adequate supply of water.

756. There is an urgent need, therefore, to begin to upgrade water production capacity in the Swat valley based upon both the current inadequate supply and the projected increases in demand in the short- to medium-term.

757. The calculated additional water requirements assume that the water distribution system is upgraded progressively in order to reduce losses from unaccounted for water and

to mitigate the potential for cross-contamination from other water sources so as to ensure water quality is fit for consumption at the point of delivery.

758. Aside from reducing water losses to make more efficient use of available production capacity, there are two main ways to upgrade production capacity and water availability:

- Abstraction from surface water sources, including springs, allied with additional storage capacity./or
- Provision of additional tube wells to abstract from the groundwater aquifer, allied with enhanced pumping and storage capacity.

759. Rainwater harvesting could also be adopted, in order to reduce the use of potable water for non-potable uses (for example, laundry, car washing, irrigation/watering of green spaces). However, this will not be a suitable source to cater for potable water demand.

760. Given the rapid drawdown in the groundwater table noted in and around Mingora City (Section I.1 above) it is apparent that the shallow groundwater aquifer is currently being over exploited. Continued reliance, or even increased reliance, on groundwater abstracted from the valley aquifer will have two consequences:

- Reduction in yield as the groundwater table becomes deeper and deeper, requiring tube wells to be upgraded, replaced or deepened simply to maintain current pumping capacity. The installation of additional (new) tube wells beyond the current number will increase the rate of drawdown.
- Pumping costs, which are already a significant drain on the resources of WSSCM-S, will increase substantially.

761. Given the above, the following recommendations can be made:

- Significant efforts should be made and put in place to enhance the conservation of water, in order to constrain projected increases in demand.
- Re-use of water (circularity) should be promoted as far as practicable.
- Significant effort and investment should be made into reducing water losses from the distribution system as quickly as possible, since a significant proportion of the water abstracted currently is lost to consumers. Reduction in water losses will offset partially the projected increase in demand.
- Illegal connections should be eliminated as quickly as possible, and the number of legally registered consumers maximized, in order to enhance the revenue of WSSCM-S and to increase the sustainability of the water supply system, since significant investments will be required to provide the additional capacity necessary to meet projected demands.
- An alternative supply of water is required to service the demands of Mingora City and other urban centers in the Swat valley.

762. There is a current initiative under KPCIP to develop a surface water source to supply potable water to Mingora City from an abstraction on the Swat River, originally proposed to be

at Bagh Dehri approximately thirty-four (34) km north-north-east of Mingora ('Mingora Greater Water Supply Scheme').

763. The objective of the scheme is to ensure a sustainable supply of water to the existing and future population of Mingora City under the jurisdiction of WSSCM0S and to some of the surrounding areas.

764. Although details are yet to be finalized, the following is proposed currently:

- The scheme is a gravity-based abstraction and distribution system (option 1) or a combined gravity and pumping scheme (option 2).
- An intake point at Bagh Dehri (option 1) or, alternatively, downstream of Khwaza Khela City (option 2).
- A water treatment plant.
- Transmission main from the water treatment plant to Mingora City.
- Receiving storage tanks in Mingora City.
- Supply mains within Mingora City.
- Distribution network within Mingora City, from storage tanks to end users.
- Water meters at customer connections.

765. The proposed abstraction point at Bagh Dehri (option 1) is upstream of Matta City and Khawaza Khela City, but downstream of Behrain City, whilst the second option for the abstraction point is downstream of Khwaza Khela.

766. The scheme is being designed to provide a total supply of up to 135,000 m^3/day of treated water, which, based on the calculations in Table 46, would be sufficient to cater for the projected demand in Mingora City up to 2045 from surface water alone or Mingora and Kabal (across the Swat river from Mingora) up to 2040 from surface water alone. Including groundwater sources to supplement surface water supplies would be sufficient to cater for Mingora and Kabal up to 2045 based on the projected populations.

767. It should be noted that under option 2, the transmission main would be able to serve population residing up to an elevation of 1,030 m which would cater for approximately eight-five per cent (85%) of the current population of Mingora. Option 1 would serve a population residing up to an elevation of 1,100 m which would cater for ninety-five per cent (95%) of the current population.

768. Once the scheme is operational, then abstraction from tube wells could be reduced significantly, thereby allowing the groundwater table to recover.

769. Existing tube wells would need to be retained and maintained to provide a back-up in the event of reduced river flow during the winter season and to supplement the supply system as and when required.

770. The actual production rate and efficiency of the existing tube wells will need to be verified on an individual basis. Where feasible and economic, any existing dysfunctional tube wells or inefficient tube wells should be rehabilitated and upgraded.

771. All functional tube wells and pumps (existing and new) should be instrumented, including installation of flow meters. Supervisory Control and Data Acquisition (SCADA) systems and equipment for centralized management, monitoring and control should also be provided.

772. The existing production capacity of the tube wells in the municipal system in Mingora City is assessed to be 26,150 m^3/day (Section I.1.1). Given the drawdown noted in the groundwater table, it is recommended, subject to a hydrogeological assessment, that production capacity be reduced substantially to around 10,000 m^3/day or less once the surface water supply scheme is operational.

773. In conjunction with investment in increased production capacity, it is recommended that a community-education program is implemented, targeted on the efficient use of water and the adoption of water conservation measures.

774. In order to ensure appropriate water quality, all production and storage facilities (production wells and OHRs) should also be fitted with disinfection facilities where not already installed.

775. The new primary transmission main from the proposed water treatment plant will branch out into multiple supply mains to existing and new water storage tanks and, thereafter, be conveyed to customers through existing or new distribution system pipelines and household connections. Based on option 2, all tanks having an elevation equal to or less than 1,030 m will be fed by gravity, whilst tanks above this elevation will be fed through a pumping system.

776. The storage tanks are proposed to provide a minimum storage equivalent to one-day's demand. Accordingly, there is a need to provide additional storage to increase the available storage capacity. The Greater Mingora Water Supply Scheme envisages a requirement for nine (9) surface tanks and eight (8) overhead reservoirs at locations throughout the city. These tanks are in addition to twelve (12) new overhead reservoirs currently under design/co-execution under the USAID Municipal Services program (MSP).

777. In addition to the above, all of the existing distribution network will need to be replaced and/or upgraded progressively throughout the currently served area and the distribution network expanded to cover all presently unserved areas within the expanded city limit.

778. The upgraded distribution network should be sized based on hydraulic analyses in order to deliver an adequate volume of water to the most hydraulically remote fixture during minimum pressure and maximum flow conditions.

779. A preliminary estimate of the new distribution network required in 325 km.[352]

780. Meters should be installed progressively for every consumer as part of the distribution system rehabilitation and upgrade. This will require the number of registered metered connections in Mingora to be increased from 23,564 to approximately 150,450 by 2045 (Table 45).

[352] Minconsult and CEC Consultants. 2000. Khyber Pakhtunkhwa Cities Improvement Project (KPCIP). Concept Design Note, Mingora Greater Water Supply Scheme. Volume 1 – Transmission Mains and Water Distribution Network. May 2020.

I.4.3. Sanitation and Drainage

781. As discussed in Section I.2.1 above, the sewage network in all urban areas is not existent, nor is any treatment provided prior to discharge of sewage and wastewater to land or to surface water courses. Rectification of this situation, at least for urbanized areas, must be a high priority in line with the sustainable development objectives of the KP government.[353]

782. In addition, and as discussed in Section □, there is a current initiative under KPCIP to develop a surface water source to supply potable water to Mingora City from an abstraction at Bagh Dehri (option 1) or downstream of Khawaza Khela (option 2) on the Swat River.

783. The abstraction point at Bagh Dehri (option 1) is upstream of Matta City and Khawaza Khela City, but downstream of Behrain City. In addition, there is significant linear development of housing along the N-95 and a series of smaller towns and villages, such as Fatehpur, upstream of the proposed intake point. The second option lies downstream of the urban centers of Matta City and Khawaza Khela.

784. Given the lack of treatment facilities and the practice of discharging untreated sewage and wastewater to surface drains, which eventually discharge into the Swat River, it is inevitable that contamination of the proposed surface water source, whichever option is selected for the intake point, will continue unabated until such time as wholesale improvements can be made to sanitation and drainage even in small rural communities. The extent of contamination at the second intake point, however, is anticipated to be significantly higher than for option 1.

785. In the main urban centers, there are two priority areas for improvement:

- Install a functioning sewage system within the limits of all urbanized areas that is separate from the drainage system.
- Develop appropriate treatment facilities, both in terms of process and capacity,

786. The overall objective of any investments in sanitation and drainage shall be to reduce, and ultimately eliminate, the discharge of untreated sewage and wastewater to the environment.

787. This objective can be achieved by collecting and conveying sewerage and wastewater hygienically away from all residential and commercial areas though the following interventions:

- Installing new primary (trunk) sewers.
- Developing secondary and tertiary sewer lines and installing connections to individual properties.
- Connecting the trunk sewers to newly developed treatment facilities.
- Over time extending the sewer network across all currently unserved urban areas.

788. In addition, any industrial wastewater should be collected separately and treated at purpose-designed treatment facilities, preferably on site (site-specific effluent treatment plant)

[353] Government of Kyber Pakhtunkhwa. Integrated Development Strategy 2014-2018.

or through common effluent treatment plants (CETPs) developed for each industrial estate or SEZ.

789. Population estimates (Appendix 1) indicate that the population of urban centers is expected to more than double in the next twenty-five (25) years. In the absence of any improvement to current sanitation systems, there will, inevitably, be increasing environmental impacts to both urban and rural areas from the collection, conveyance and discharge of untreated wastewater.

790. The first priority should be to provide a functioning sewage network and treatment system for Mingora City, since this is the urban center that produces the largest quantity of wastewater in the region (approximately forty-eight per cent (48%) of the wastewater of the main urban centers, Section I.2.1). If Kabal, across the Swat River, can also be catered for in the same treatment plant then up to sixty-five per cent (65%) of the wastewater estimated to be generated from the main urban centers could be treated before discharge into the environment.

791. A second, and equally high, priority should be to provide functioning sewage collection and treatment systems for urban centers and rural communities upstream of the proposed surface water abstraction intake on the Swat River. This would assist in reducing the requirements to treat and remove bacteriological contamination of surface water abstracted from the Swat River, and mitigate the potential for contaminated water entering the water supply system of Mingora City.

792. Any treatment plant for Mingora City would be located, preferably, down gradient of the city and out of the floodplain.

793. The lengths of each type of functional sewer, including pipe diameter, design flow rates and capacity and the requirement for pumping stations, will be established during detailed design. The sewer network should be constructed first in the location of any proposed sewage treatment plant and extended progressively into other UCs.

794. For Mingora City it is inevitable that at least two pump stations, and probably more, will be required to cater for the furthest limits of the network, particularly if any treatment plant caters for Kabal City also.

795. Table 48 sets out an assessment of the likely impact on municipal populations by attempting progressive installation of sewage networks across the urban areas in the region.

Table 48: Indicative levels of population served by municipal sewerage systems assuming progressive installation and development of served areas

Year	Estimated Urban Population[1]				Service Coverage[2]	Population Served	Population Unserved
	Mingora	%	Other urban centers	%		All urban centers	All urban centers
2020	366,493	47.73	401,285	52.27	0%	0	767,778
2025	432,529	47.98	468,986	52.02	20%	180,303	721,212
2030	505,647	48.19	543,541	51.81	40%	419,675	629,513
2035	583,398	48.38	623,477	51.62	60%	724,725	483,150
2040	667,530	48.54	707,549	51.46	80%	1,100,064	275,016
2045	755,916	48.69	796,668	51.31	95%	1,474,955	77,629

Note [1] Estimated population based on medium variant for all currently-defined urban areas. Estimate derived from Appendix 1.c.
[2] From Table 53.

796. From Table 48 it is evident that even with significant investment in providing a sewerage network in Mingora City, unless investments are made also in other urban centers then there will be no improvement on the current situation and, overall, the wastewater management situation will continue to deteriorate, further stressing living conditions within the urban centers and beyond.

797. Accordingly, priority investments should also be considered for other main urban centers such as Barikot and Kabal (if not covered under Mingora City), in order to obtain progressive improvements in urban sanitation.

798. One possible scenario is outlined in Table 48 above, initially to ensure that there is no increase in unserved urban population and thereafter, over the longer-term, to begin to reduce the population unserved. A sustained period of effort and investment is required even for this scenario.

799. In parallel with constructing the sewer network, it is necessary to develop appropriate treatment capacity to manage and treat all of the sewerage and wastewater collected in the service areas otherwise sewage and wastewater will continue to be discharged untreated into the drainage network. Treatment capacity will need to increase as the sewage network is developed.

800. Assuming a water supply of 150 liters per capita per day, and required treatment capacity at 90% of the supplied water, the required treatment capacities are as set out in Table 49 based upon the service coverage and served population indicated in Table 48 above.

Table 49: Indicative levels of required treatment capacity for urban populations

Year	Population Served – Mingora City	Treatment Capacity (Million lpd)	Population Served – Other Urban Centers	Treatment Capacity (Million lpd)	Total Treatment Capacity (Million lpd)
2020	0	0	0	0	0
2025	86,506	11.678	93,797	12.663	24.341
2030	202,259	27.305	217,417	29.351	56.656
2035	350,639	47.336	374,086	50.502	97.838
2040	534,024	72.093	566,039	76.415	148.509
2045	718,121	96.946	756,835	102.173	199.119

801. Treatment capacity will need to be developed in stages and in a number of locations, responding to the increase in population, increase in potable water availability/consumption (Table 45) and increase of sewerage connections to the treatment plant (Table 49). As a minimum treatment plants should be provided for each of the centers with the largest urban populations, namely Mingora/Kabal and Barikot.

802. The choice of treatment process would need to be determined based upon the projected flows and required capacity, site availability and available technology. One technological solution is the use of a trickling filter process, a robust system with low

investment, comparatively small footprint and energy demand and low odor emissions, although there are many different treatment process options available.

803. Table 50 provides an overview of principal process flows and infrastructure requirements for a single plant based on a trickling filter process for the city of Mingora.

Table 50: Sewage treatment capacity and projected flows, Mingora City

Year	Population Connected to Sewerage [1]	Estimated Dry Weather Flow [2]	Primary Settling Tanks [3]	Trickling Filter Tanks [3]	Secondary Settling Tanks [3]	Thickened Sludge Produced [4]
		m^3/day	No.	No.	No.	m^3/day
2020	0	0	0	0	0	0
2025	86,506	8,000	1	2	1	120
2030	202,259	18,500	2	3	2	285
2035	350,639	34,000	3	4	3	490
2040	534,024	48,600	5	6	5	750
2045	718,121	65,400	6	8	6	1,000

Source: Calculations by the project consultant.
Notes: [1] Refer to Table 48.
[2] Assumed at 14 hours per day.
[3] All tanks sized based on a tank diameter of 36 m.
[4] Thickening assumed to achieve 40% reduction in volume.

804. The gross footprint of the treatment plant infrastructure, excluding provision for buffer zones and drying beds, and based on adopting trickling filters and the dry weather flows set out on Table 50 is estimated to be:

- 1.0 ha. for the treatment capacity required by 2025.
- 1.8 ha. for the treatment capacity required by 2030.
- 3.3 ha for the treatment capacity required by 2035.
- 5.4 ha for the treatment capacity required by 2040.
- 7.5 ha for the treatment capacity required by 2045.

805. It is proposed that the design of any wastewater treatment plant is based on a circular approach by producing re-usable organics for agriculture and energy recovery from producing biogas. The suggested process is based on primary settling, a high loaded trickling filter and secondary settling. In this process organics and solids will be removed. Although almost no nitrogen and phosphorous will be removed the discharge will comply with national effluent standards.

806. Organic components in wastewater are not only the major actor for pollution and health risks, these components can also be a source for producing sustainable energy. Sewage sludge produced in the wastewater treatment plant can produce biogas when treated in a bio-digester. Sludge digestion is a common and reliable process, although it requires skilled operators. Wastewater sludge can also be combined with source-separated organic municipal waste and animal manure to enhance biogas production. The biogas can be reused by bottling, in industrial processes, to produce electricity or injected in an existing gas network.

807. Digested sludge can be upgraded, with nutrient addition, as a fertilizer and soil improvement in agriculture. This can be achieved either using thickened liquid or as dried or composted sludge. Each process has its own economics depending on the scale and local revenues.

808. A detailed Feasibility Study will be required to assess all of the different potential options for site development and wastewater treatment, in order to select the best options for prevailing site conditions.

I.4.4. Solid Waste Management

809. The management of municipal solid waste requires considerable improvement in service provision in the following areas:

- Collection capacity and operational capability.
- Sanitary methods of disposal of municipal solid waste.
- Resource recovery, including diversion of waste from final disposal to land.

810. Suggested key priority interventions to achieve these objectives are set out below.

811. There are no reliable figures for current waste generation. Based on waste characterization studies conducted in Punjab Province[354] for similar sized cities to that of Mingora, the current per capita waste generation rate of municipal solid waste is assumed to be of the order of 0.40 kg/day. Commercial and institutional premises usually produce an additional quantity of waste of between twenty-five per cent (25%) and thirty per cent (30 %) percent above that produced by city inhabitants. In addition, Mingora has a sizeable transient tourist population that also contribute to waste generation in the city.

812. Accordingly, an overall waste generation rate of approximately 0.60 kg per person per day can be assumed based on the resident city population, resulting in an estimated total generation of 220 tpd of municipal solid waste[355] in the current urban area. of which only around fifty per cent (50%) is collected (Section I.3 above). The waste generation rate for the other urban centers in the region is assumed to be somewhat lower in keeping with other smaller cities in KP; a generation rate of 0.35 kg per person per day has been assumed.

813. Projections of waste generation have been made based on the estimated and projected urban populations up to 2045. These projections are summarized on Table 51.

354 Government of the Punjab. 2016. *Waste Amount and Characterisation Study: Segregation Treatment and Disposal Project, Sahiwal*. Lahore: The Urban Unit, GoPb.

355 Municipal solid waste (MSW) is usually considered to comprise waste generated from households, commercial and institutional premises, markets and public spaces, and street sweeping. Construction debris, agricultural waste, industrial waste, clinical waste and sludges are not normally considered to be part of MSW, notwithstanding that some of these may be collected and co-disposed with MSW.

Table 51: Projected waste generation in urban centers (tons per day)

Year	Mingora City			Other urban centers			All urban centers
	Generation Rate[1]	Population [2]	MSW Generated	Generation Rate [1]	Population [2]	MSW Generated	Total Generation
	kg/pcd		(tpd)	kg/pcd		(tpd)	(tpd)
2020	0.600	366,493	219.9	0.350	401,285	140.4	360.3
2025	0.625	432,529	270.3	0.375	468,986	175.9	446.2
2030	0.650	505,647	328.7	0.400	543,541	217.4	546.1
2035	0.675	583,398	393.8	0.425	623,477	265.0	658.8
2040	0.675	667,530	450.6	0.425	707,549	300.7	751.3
2045	0.675	755,916	510.2	0.425	796,668	338.6	848.8

Source: Calculations by the project consultant.

Notes: [1] Per capita waste generation rates usually increase over time as societies become more affluent and with increasing levels of economic development. A nominal increase of 0.005 kg pcd has been assumed from 2020-2035, and thereafter no increase reflecting efforts to minimize waste generation.
[2] Population from Appendix 1.c, medium variant.

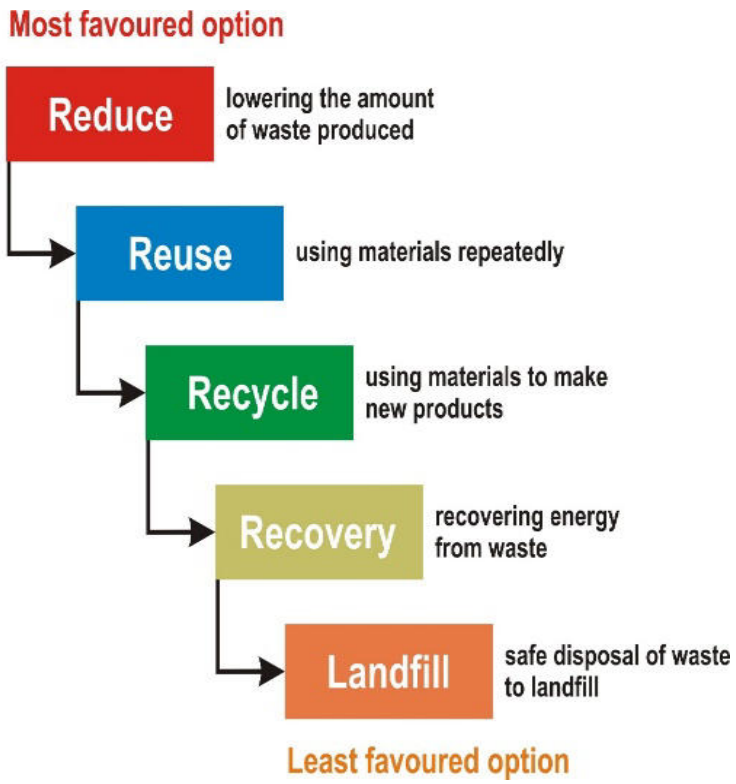
814. Table 51 indicates significant and rapid increases in projected waste quantities are projected in the period up to 2045. In the case of Mingora City, waste quantities generated for the whole city are projected to increase approximately 230%, whilst for the other urban centers the projected increase in generated wastes is slightly higher at 240%.

815. Such pronounced increases in waste generation suggest there is an urgent need for a detailed review and upgrade of the current solid waste management systems in all urban centers in order to meet future demand for cost-effective, efficient and comprehensive services.

816. The manual handling of MSW should be minimized as far as practicable. Whilst there are some limitations in this regard with respect to primary collection, it is imperative that secondary collection and waste transfer is undertaken mechanically, on health, efficiency and financial considerations. Accordingly, it is proposed that the collection systems are upgraded to facilitate mechanical loading of waste into collection vehicles from compatible containers.

817. Collection system improvements must also be integrated with other elements of the solid waste management system, including transfer, treatment and disposal components.

818. Greater emphasis must be placed on education and public awareness to reduce the quantities of waste generated in the first instance. In addition, facilities and systems should be developed to promote the recovery and/or re-use of materials to reduce the quantity of residual waste requiring final disposal to landfill, based on the waste management hierarchy:



819. Current recycling efforts are based on informal systems, undertaken primarily by waste pickers, hawkers and collection personnel who sell on recovered materials to wholesale buyers. Few details are currently available on the quantities and types of materials recovered in the region.

820. The introduction of segregation of waste at source is a practicable means of enhancing the recovery of useful materials from the waste stream. Such a system can supplement the existing informal recovery system rather than attempting to replace it. The objective of such a system would be to 'pre-sort' specified materials from the waste stream and, in so doing, to avoid potential cross-contamination that might impair the ability to recycle such materials successfully.

821. If implemented, it is recommended that segregation should initially be limited to two categories only – dry, recyclable materials (paper, cardboard, glass, metals, plastic, etc.) and wet, general waste. Adoption of source segregation must be accompanied by an extensive information and education campaign over a sustained period of time, including monitoring of the effectiveness of the campaign and the success of source separation.

822. The implementation of segregation at source would require changes to the collection system (collection method and vehicle types) and the associated development of processing facilities and markets to absorb any source separated materials. In the absence of markets for the recovered materials there is no merit in segregating these, since they will ultimately need to be disposed. Accordingly, any decision to implement segregation at source must be founded on a comprehensive assessment of the demand for different recovered materials and detailed plans to develop the capacity to handle and absorb these materials and transform them into useful products.

823. Existing open dump sites are not considered sustainable for continued use on a long-term basis from social, environmental and aesthetic perspectives. Whilst landfills are a

fundamental component of any waste management system, the development of sanitary landfills that are engineered to mitigate the impact on the surrounding environment and host community is often deemed to be very expensive. Negative perceptions of landfilling as a waste disposal method are also prevalent, since such perceptions are often based on the negative environmental impacts of open dumping of waste.

824. Given the cost of developing environmentally-secure disposal systems, it is often the case that individual municipalities are often not in a position to afford to upgrade the standards of waste disposal systems. Hence, two approaches can be advocated:

- First, the development of materials recovery facilities (MRFs) that aim to recovery the maximum useable materials from the waste stream. Clean MRFs are the most successful form of intervention in this regard, relying on the final sorting of clean source-segregated waste to maximize material recovery. Clean MRFs can be instigated as small individual facilities within local communities or can be integrated into a transfer station to intercept waste prior to onward conveyance to the disposal facility./or

- Second, as an alternative to an individual disposal facility for each municipality, then a cluster of municipalities can contribute to, and make use, of a regional landfill, thereby sharing in the costs of its development and operation. By sharing costs, the standard of waste disposal can be improved significantly by adopting sanitary methods of landfill engineering and operation.

825. The current waste disposal site at Kawtharo Maria is used by WSSCM-S but is under the ownership of the TMA. WSSCM-S has identified a site for the landfill; however, the available is small (< 3 hectares). Few details of the site, the proposed facility, or the proposed capacity of the facility, are currently available.

826. The need for transfer stations will be dictated by the selected location of the site to be developed as a sanitary landfill. Typically, transfer stations are justified economically where the haul distance of collected waste exceeds 15 km to 20 km. The distance at which transfer stations become economic depends to a large extent on the types of collection vehicles employed (for example, volumetric/load capacity and fuel economy) and the road conditions (for example, level of congestion) which influence travel times between the collection zone and disposal site.

827. It is recommended that a location for a waste management facility be selected outside of the limits of the city in an area that is accessible by road, but which is currently unproductive. Based on waste quantities (Table 51) one transfer station, if required, would be sufficient to serve the current urbanized areas of Mingora City, including the city center and the peri-urban margins of the city. If required, the transfer station should be located so as to avoid travel for transfer vehicles on the congested roads through the city center.

828. Waste quantities generated and collected in Mingora City alone, currently and even up to 2045, are marginal for the development of a waste-to-energy plant. However, combining waste from the other urban centers, particularly those located close to Mingora City might provide sufficient mass to justify a waste-to-energy plant, assuming that the waste has sufficient calorific value to permit self-sustained combustion and without the need for extensive pre-treatment and sorting to produce refuse-derived fuel with the required characteristics.

829. For a regional landfill, based on the waste quantities projected in Table 43, preliminary calculations of the required disposal capacity, are summarized on Table 52. The calculations, based on assumed collection efficiency of 90% and diversion of 20% of the waste stream through materials recovery, indicate the requirement for a site of approximately 28 hectares (excluding space for support infrastructure), sufficient to accommodate approximately 5.6 million m^3 of waste to 2045 assuming the waste diversion target of 20% is met. A regional landfill of this capacity will result in significant economies of scale with respect to development costs.

Table 52: Treatment and disposal requirements for municipal solid waste – regional landfill

Year	Waste Generated [1]	Waste Collected [2]	Waste Diverted [3]	Waste Landfilled	Void Space Consumed [4]	Cumulative Void Space Consumed [5]	Disposal Area [6]
	tpd		tpd	tpd	m^3/year	m^3	Ha
2020	360.3	180.0	0.0	0.0	0	0	0
2025	446.2	401.6	80.3	321.3	184,268	184,268	3.7
2030	546.1	491.5	98.3	393.2	225,524	1,226,045	16.3
2035	658.8	592.9	118.6	474.3	272,066	2,489,800	19.9
2040	751.3	676.2	135.2	540.9	310,265	3,962,720	22.6
2045	848.8	763.9	152.8	611.1	350,530	5,632,875	28.2

Source: Calculations by the project consultant.
Notes: [1] From Table 51.
[2] Collection Efficiency assumed at 90% from 2025.
[3] Assumes average waste diversion rate of 20% from 2025.
[4] Assumes landfill begins receiving waste at the beginning of 2025. To allow for site identification, planning, design and initial development.
[5] Assumes *in situ* compacted density of 0.7 t/m^3 and 10% provision for daily and intermediate cover, excluding final capping.
[6] Assumes average waste depth of 5 m for site in 2025, with average waste depth increasing as the waste disposal area increases in size, ultimately reaching an average depth of 20 m

830. Exceeding the waste diversion target, or by providing alternative treatment facilities for managing the waste, will result in the requirement for a smaller site or a site that can last longer than twenty-five (25) years.

831. The lifespan of any landfill, regional or local, could be enhanced through the progressive adoption of alternative treatment technologies, including, potentially, composting, anaerobic digestion and incineration or other forms of waste-to-energy processes. There is, however, no information on the chemical properties of the waste stream that would permit a preliminary assessment of the feasibility of any of these options.

832. Composting of green waste is best undertaken in conjunction with composting of agricultural waste streams. Composting of municipal waste is not recommended unless it is restricted only to source-segregated clean green waste components (for example, tree and grass cuttings). Cross-contamination from other waste components renders ‘compost’ derived from mixed municipal waste unable to achieve certification as compost and, thus, it is unmarketable.

833. Development of anaerobic digestion of organic waste can be undertaken at the landfill site, potentially in conjunction with the digestion of sludges from any wastewater plant. Source-segregated food waste is best suited to this method of treatment.

J. TOURISM

834. The tourism sector has gained significant importance over the past few decades all over the world. Pakistan in general and Khyber Pakhtunkhwa (KP) Province in particular is blessed with immense tourism potential. The province of Khyber Pakhtunkhwa (KP) is a unique province of Pakistan where all types of tourism attractions exist. These include tourism sites with natural and scenic beauty, sites with unique historical and archeological importance, sites of religious significance, sites for ecotourism and nature tourism, winter tourism, shopping, cuisines, sports and festivals. No other province of Pakistan can claim to have such diversity of Tourism assets.

835. As per Pakistan Tourism Growth Report of 2009,[356] the total number of domestic tourists visiting Khyber Pakhtunkhwa in a year was about 8.8 million which account for about 19% share of the total national domestic tourist traffic. A higher share of Khyber Pakhtunkhwa in domestic tourism compared to its share in population is a clear indicator of the competitive edge the province possesses over other provinces of the country. On the other hand, total number of foreign tourists arriving in Khyber Pakhtunkhwa in 2009 was 47,900 which translated into 5.6% share of the national foreign tourist traffic.

836. The most popular tourist locations in Khyber Pakhtunkhwa include Swat Valley, Kaghan Valley, Chitral Valley, Kumrat Valley, Abbottabad and Gallia region of Hazara, Mardan, Swabi, D.I. Khan, Khyber Pass, Peshawar and its surrounding areas.

J.1. Khyber Pakhtunkhwa Tourism Policy, 2015

837. KP is the first province in Pakistan which launched its provincial tourism policy in 2015. The KP Tourism Policy 2015 visualizes developing an internationally competitive tourism sector to fully realize its diverse potential, making tourism a leading economic sector for the province. Improved institutional capacity and regulatory reforms, investment promotion through public-private partnership, creating an enabling business environment for private sector, quality assurance in tourism and hospitality services, marketing and image building and improving the workforce for quality assurance are mentioned as key strategic thrust areas with sort to mid-terms targets in this policy. The policy also focuses on the sustainable development of tourism as a cross-cutting theme by acknowledging the importance of long term benefits of sustainable development of tourism in the province which heavily depends on the natural endearments and cultural heritage for its tourism products.

838. In order to improve coordination mechanism among the key public sector departments and private sector stakeholders, the policy has also proposed a framework to establish a high level Tourism Development Committee (TDC) to effectively implement the policy recommendations. A detailed action plan along with monitoring & evaluation plan is also part of the overall implementation framework with clearly defined role of different partner organizations and timeframe to achieve the given goals.

839. On the institutional side, the government also promised to rationalize the institutional setup, by clarifying responsibilities for DoT, TCKP, DTS and other government entities and to

[356] These are the figures as per the annual Tourism Growth Report of 2009 as no latest data is available after this period. The federal ministry of tourism used to publish this report annually but after the devolution under the 18th Amendment in the constitution of Pakistan, the subject of tourism has been assigned to the province and the federal tourism ministry has been dissolved hence no department is now producing such report at present.

provide adequate resources to these entities. The policy also emphasized the roles of the public versus private sectors for the tourism sector development, with the former strengthening its regulatory and planning capacity, monitoring capability, information provision, as well as the capacity to manage private sector transactions, whereas taking charge of project development and management for tourist infrastructure development and services provision. While the private sector grew tremendously in the past few years, the policy had little role to play in that. One notable initiative by the KP government, however, was to lease out government rest houses, increasing the private sector participation in the sector.

840. On the regulatory side, the policy proposed development of robust regulatory regime to ensure better quality of tourism services by upgrading the existing tourism and hospitality related laws. It also highly speaks about the high standard of enforcement of Environment protection Act, the local government act, wildlife etc., but when we look on the action side, we see that the new Tourism Act 2019 is totally against what is mentioned in the KP Tourism Policy 2015 as the new law makes way to repel all the above laws.

841. As a whole, the KP tourism policy document is quite a comprehensive covering all the important dimensions of tourism development and promotion in the province. Moreover, it presents a very detailed implementation framework with clearly defined list of activities and their timelines till 2021. But apparently it looks like that the suggested interventions has not been seriously taken care by the Tourism Department itself. No effort even has been made to follow the proposed implementation plan by the concerned department. As a result, after passing of five years we have no clean idea about the level of achievement of targets set in this policy document.

J.2. Tourism Assets

842. Swat is a mountainous region, located among the foothills of the Hindukush mountain range. This range runs in the general direction of North and South and has a varied elevation within the Swat area, beginning from 600 meters above sea level in the South and rising rapidly up towards the North, to around 6,000 meters above sea level. The Swat region, containing the meandering Swat River, is also home to lush green valleys, snow-covered peaks, glaciers, forests, meadows and alpine pastures. Along with its natural and scenic beauty, Swat valley also possesses a historical significance. It has been a destination for Alexander the Great in 327 BC. In ancient times, it was also famous as a center of Buddhism; still having its prominent marks in the valley in shape of countless archaeological sites in lower part of Swat Valley. Mingora, Saidu Sharif, Madyan, Baharin, Kalam, Miandam and Malam Jabba are the main tourist destinations in the Swat Region.

843. A brief description of tourism assets in the Swat Region is given below. A list of tourism assets in the region is given in Table 53. the same are also shown on Map 22.

- Mingora is the main town and the center of economic activities of Swat Valley. The bazars of Mingora are famous among domestic and foreign tourist to enjoy shopping of various handicrafts and other locally produced items. Traditional jewelry made of silver and semi-precious stones, embroidered dresses, hand woven woolen shawls, waistcoats, caps and woodwork products are available in the shops of Mingora markets. The town large number of hotels and restaurants to provide boarding and lodging facility to the visitors.

- The other important urban area is Saidu Sharif which is the seat of administration for managing government affairs. There is an airport in Saidu Sharif which used to have flights from Islamabad when the situation was normal.

- The area of lower Swat is very important tourist destination because of the presence of large number of archaeological sites of Buddhist heritage. Buddhist sites, such as stupas, monasteries, settlements, caves, rock carvings and inscriptions are scattered all over the lower Swat Valley. Some important Buddhist locations include Butkara Stupa, Saidu Sharif Stupa, Shingardar Stupa, Nimogram Stupa, Elephant Pass in Shahkot Pass, Tokar Dara Stupa and Monastery, Gumbutana Stupa, Amlukdara Stupa, Udegram, Jehanabad Buddha, Bazira and Ram Takht (Ram's throne on mount Elum).

- Swat Museum is located in Saidu Sharif which has a huge collection of artifacts, coins and other assets of Gandhara civilization.

- Maraghzar is a small serene town located about 13 km from Saidu Sharif at the base of Mount Elum. Key attraction of the area is the White Palace which was the residence of the ruler of Swat. The palace now exists in the shape of a high grade hotel and restaurant.

- Islampur is a small village famous because of in handloom weaving. Handmade Swati woolen shawls and blankets produced at Islampur are famous all over Pakistan.

- Malam Jabba is a hill resort about 44 km from Mingora. The area is surrounded by beautiful mountains and has chairlift, ski run and a mini golf course. Presently, the place is in the process of rebuilding; after being destroyed during conflict situation in the area.

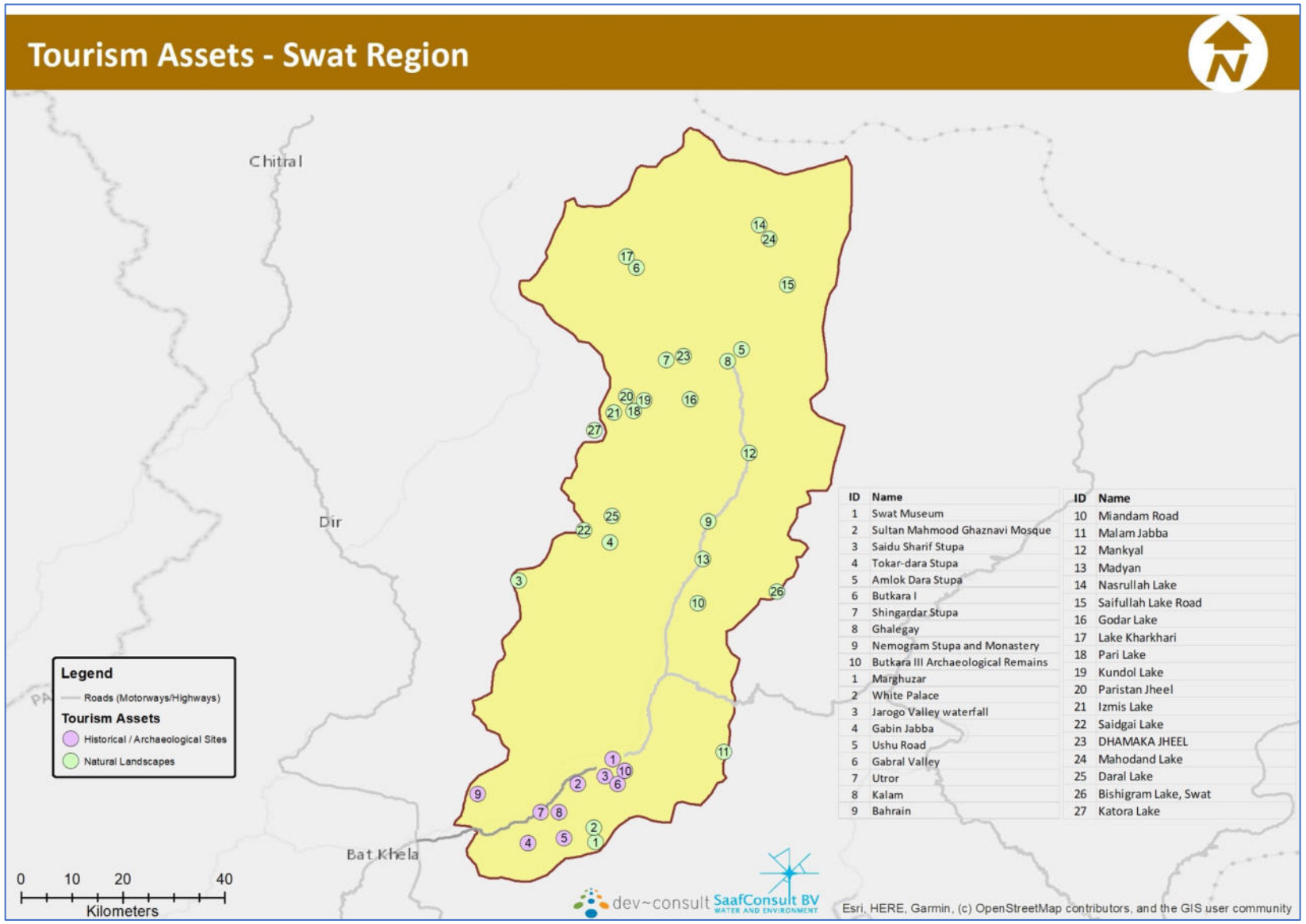
- Bahrain and Madyan are two beautiful small towns in Upper Swat, situated along Swat River. They are the most frequently visited place; by being on the road leading to other tourist destinations.

- Kalam is a small town in Upper Swat. By virtue of its beautiful panoramic natural beauty, it is one of the most popular places for the tourists coming to Swat Valley. Ushu, Matiltan, Gabral and Utror are beautiful side valleys above Kalam which are accessible by jeep roads.

- Other tourist places in Swat which are famous for their natural scenic beauty include Miandam, valleys of Bashigram and Mankial.

- There are many beautiful lakes in upper Swat which feed the emerald green Swat River. These lakes provide ideal camping sites for adventurers and nature lovers. Most of these lakes are accessible only through foot treks. Some popular lakes include Bashigram Dand, Daral Dand, Mahodand, Saidgai Dand, Kundal Dand, Pari/Khapiro and Neelsar.

Map 22: Tourism assets in Swat district



ID	Name
1	Swat Museum
2	Sultan Mahmood Ghaznavi Mosque
3	Saidu Sharif Stupa
4	Tokar-dara Stupa
5	Amlok Dara Stupa
6	Butkara I
7	Shingardar Stupa
8	Ghalegay
9	Nemogram Stupa and Monastery
10	Butkara III Archaeological Remains
1	Marghuzar
2	White Palace
3	Jarogo Valley waterfall
4	Gabin Jabba
5	Ushu Road
6	Gabral Valley
7	Utror
8	Kalam
9	Bahrain

ID	Name
10	Miandam Road
11	Malam Jabba
12	Mankyal
13	Madyan
14	Nasrullah Lake
15	Saifullah Lake Road
16	Godar Lake
17	Lake Kharkhari
18	Pari Lake
19	Kundol Lake
20	Paristan Jheel
21	Izmis Lake
22	Saidgai Lake
23	DHAMAKA JHEEL
24	Mahodand Lake
25	Daral Lake
26	Bishigram Lake, Swat
27	Katora Lake

Table 53: Tourism sites in Swat Region

Geographic / Natural Landscapes	Historical / Archaeological Sites	Cultural Sites
• Beautiful Mountainous landscape • Fruit orchards • River Swat and its tributaries • Miandam Valley • Madyan • Bahrain • Kalam • Ushu • Matiltan • Gibral • Atrot • Mahudand Lake • Condol Lake • Mount Flackser • Mount Mankial • Beshigram valley • Bishigram Lake • Gabina Jaba	• Gumbt Stupa • Remains of Bazira • Amluk Dara Stupa • Udegram remains • Ghalighay • Butkara Stupa • Saidu Stupa • Jahanabad Buddha • Thokardara Stupa • Shingardar Stupa • Nemogram Stupa • Gogidra • Mount Ilum • Muraghzar • Prehistoric rock paintings in Kandak valley of lower Swat	• Mingora Main Bazars • Swat Museum • Saidu Baba tomb • Islampur (village of shawls weavers) • Madyan Bazar (traditional Woodcarving) • Old Bahrain

J.3. Gaps in the Promotion of Tourism in KP

J.3.1. Province Level Issues

844. Based on the literature review, following are the sector specific key issues and gaps in the KP Tourism sector.

J.3.1.1. Institutional and Coordination Issues

845. In spite of the very evident importance of Tourism sector for KP, the sector has not obtained its due attention from provincial government. Moreover, tourism is a cross cutting theme and is related to number of other departments and ministries; such as environment, wildlife, forestry, culture, archaeology, local government, Communication and Works etc. However, all these ministries and departments keep working in isolation without taking into account the synergies which may be developed with Tourism. This results in missing out on many opportunities through which tourism development can take place without incurring much cost.

846. The management of Tourism in the province is carried out by Tourism Corporation of Khyber Pakhtunkhwa (TCKP). During the past two years, TCKP has been very active and has taken number of good initiatives for the promotion of tourism in KP. With the devolution of Tourism, TCKP has an expanded role to play for the development of tourism as well. The current organizational structure of TCKP is not geared to take on the additional responsibilities. There is lack of capacity in TCKP in the functions of marketing, research, infrastructure planning and development, investment promotion and development of other segments of tourism more effectively.

J.3.1.2. Limited Availability of Information

847. The planning and management of any sector and its activities depend upon effective evidence-based decision-making, backed by flow of data and meaningful information.

Presently, there is no mechanism in place to collect and analysis data of tourism at provincial level.

J.3.1.3. Low Quality of Workforce

848. Availability of quality human resource has been a significant challenge for the tourism sector in the province. There are few universities offering degree courses on tourism but their overall standard need lot of improvement. Furthermore, Pakistan Austrian Institute of Tourism and Hotel Management (PAITHOM) in Swat - the only notable training institute in the province for tourism and hospitality related training - has been non-operational since the conflict in Swat and is still in use by Pakistan Army.

J.3.1.4. Insufficient Private and Public Investments

849. Development of tourism infrastructure requires influx of substantial funds; the provision of which is difficult for the government. The flow of private investments in the tourism sector of KP has also been limited. In order to promote private investments in the province, a regulatory framework is required to empower government officials and also to provide opportunities for secure investments to private sector investors. Presently, in KP, there is no such framework; which limits the execution of this option

J.3.1.5. Absence of Efficient Regulatory Mechanism and Poor Quality Standards

850. The enforcement of any quality standards is virtually absent in the tourism sector. The responsibility of managing the laws and standards of hotels, tourist guides and travel agencies lies with Directorate of Tourist Services (DTS). Before 18th Amendment, DTS used to work under the federal Ministry of Tourism. As per the mandate decided for DTS, it is responsible to ensure the quality of tourist services through implementation of various enactments including: The Pakistan Hotels and Restaurants Act 1976; The Pakistan Tourist Guides Act 1976. The Travel Agencies Act 1976. This absence of an efficient regulatory mechanism and standards regime has implications for services offered by hotels and restaurants; licenses for tourist guides; fitness certification system vehicles used by tourists; transportation rates, etc.

J.3.1.6. Poor Infrastructure

851. Due to a recent history of armed conflict in Swat and natural disasters in different mountainous regions, the tourism sector in KP has suffered major losses, including physical damages to buildings and equipment and lost businesses. This in turn has taken its toll on availability of tourist facilities in the province. Firstly, damage caused to access roads, unreliable supply of electricity, poor sanitation at tourists spots and closure of Saidu Sharif airport have further worsened the situation. The crisis damaged roads and bridges in Swat valley, Dir, Kohistan and Kaghan valley. In addition, new link roads should also be developed to reach scenic places in Swat, Dir, Chitral and Kaghan valley and other areas. Secondly, provision of electricity, water supply, sewerage and solid waste management are the key areas which need immediate attention of government.

J.3.1.7. Weak Marketing Activities

852. While the poor law and order situation has played its role in discouraging tourism in KP, some responsibility also has to be placed on lack of an effective and well-coordinated image building and marketing strategy to promote in KP as a preferred tourism destination. KP has been bestowed with valuable tourism assets and unharnessed tourism potential in areas of natural, historic, archaeological, religious and cultural tourism, however, the tourism

officials, especially at the federal level, have so far been unsuccessful in conveying this potential to the relevant audience across the globe. So far, the government's efforts to attract domestic tourists have been mostly cantered around activities within the province, however, there is a need to extend these activities to tourist feeding areas in the country, including major cosmopolitan cities, to further promote domestic tourism. There is also need to focus of special interest foreign tourist markets to attract sufficient number of foreign tourists interested in adventure, nature, archaeological and cultural tourism.

J.3.1.8. Insufficient Funding for Tourism Sector and Low Investment by Private Sector

853. In spite of the great business potential of Tourism, the sector has not been a priority for the financial institutions. There has never been a preferential treatment given to this sector either by the government or by the banks. Unlike many other sectors, there has been no concessional financial support for tourism and hospitality sectors; although dynamics of the sector are very different from industrial, agriculture or micro sectors. As a result, the private sector in tourism sector is unable to get its due share of the commercial funding. There are no special funds allocated and no program lending schemes launched for tourism. Moreover, the provincial government so far has also not been able to offer any good incentive schemes to attract investment in tourism from private sector.

J.3.2. Region Level Issues

854. Swat Valley is a popular tourist destination because of its pleasant summer climate and number of scenic tourist spots. It has large number of hotels and most of the tourist areas are also easily accessible. Most of the tourists visits Swat valley during summer holidays are domestic tourist from down country. Although there is no official data available on the number of tourist arrival in Swat district but as per careful estimates more than 500,000 domestic and around 2000 foreign tourists annually visit different places in Swat. Main tourist season is from May to August but small numbers of tourists also come during rest of the year.

855. In the past, there has been a reasonable flow of foreign tourists vising Swat for its historical sites and enjoy natural landscape of Swat. Trips to visit archaeological sites of Gandhara in Lower Swat and trekking trips to Chitral via Kachikani pass and to Ghizer Valley of Gilgit-Baltistan via Dadrali Pass were popular tour products among foreign tourists, but nowadays due to security concerns, the movement of foreign tourists in upper Swat is almost insignificant.

856. In the recent years, a significant growth has been observed in the domestic tourist arrival in Swat district. This is mainly attributed due to the influence of social media and mushroom growth of unlicensed tour operators who offer cheaper package tours to domestic tourists groups. Most of these domestic tourists are family groups and young people who visit this area during summer holidays. These domestic tourists come on four to five days excursion trips and some of them also come with specific purpose of trekking in the areas of Swat Kohistan which has number of high mountains passes and beautiful alpine lakes.

857. As far as key issues in tourism sector are concern, there is general lack of basic tourism infrastructure such as good restaurants, public toilets and rest areas along the roads, direction signage, poor hygiene conditions and cleanliness of boarding and lodging facilities. Untrained staff in hotels/guest houses, issue of road safety, degradation of natural environment due to deforestation and unplanned construction and mushroom growth of hotels at tourist resorts are some other key issues. KP Tourism Department has not played an active role for the

development and promotion of tourism in the past but now they are working on preparing area specific tourism developmental plans and it is hoped that some new tourism specific projects will be initiated in near future.

858. Regardless its specific form, tourism has emerged as a major factor for regional economic development. Popular tourist destinations in Swat are jam-packed during summer season and now also have started receiving tourists in winter as well.

859. There are good possibilities to develop various tourism products using the beautiful natural landscape and rich cultural aspects. KP government is the first province which has approved its tourism policy and the political leadership is now also very keen to promote tourism in the province. There is also interest of national and international development agencies, NGOs and donor agencies on creating new livelihood opportunities for the people of Swat which will be helpful in initiating projects to make tourism an integral part of local economic development in this area. On the other hand, there is now an increase in the arrival of tourists after the opening of Swat Expressway from Swabi to Chakdara. Moreover, the facility of e-visa and visa on arrival for foreign tourists of many countries will also positively impact to increase the number of foreign tourist arrivals in Swat.

860. There is now need to harness the existing recreational tourism potential to make it more eco-friendly and culture friendly by adopting the best practices of responsible and sustainable tourism. The motivation behind developing tourism in this area should not be just to attract more tourists but to ensure that local communities must get good share of economic benefits accrue from tourism business activities. At the same time, the negative impacts of irresponsible tourism development need to be avoided, such as damaging effects on the local natural, cultural and historical resources due to mushroom growth of unattractive hotels and commercial buildings. Therefore, tourism should be developed strictly based on the concept of sustainable development of tourism.

J.4. Tourism Promotion: The Way Forward

J.4.1. Province Level Recommendations

861. Developing Tourism sector in Khyber Pakhtunkhwa requires a structured and phased approach. The recommendations for the promotion of tourism as a whole in the province and specifically in the Swat Region are made in the following paragraphs.

862. The first and foremost step for promoting Tourism in KP is assigning Tourism the high priority by the Government of Khyber Pakhtunkhwa. Tourism should be officially declared as an industry and it must be backed by the appropriate funding for the development of proper infrastructure for the development of tourism in the province.

863. The KP Tourism Policy is very comprehensive document and effort should be made to establish a mechanism for its proper implementation. This policy document should be reviewed and updated to meet the requirements for the next phase of five years.

864. On governance side, there is need to improve the working of KP Tourism Department and its associate directorates and agencies. TCKP need to adopt an outlook of effective corporate body playing its due role in the development and promotion of tourism in the province. The role of Directorate of Tourist Services (DTS) should be strengthened through its capacity building and upgradation of tourism related laws and its implementation mechanism.

865. Public-private partnerships should be encouraged for Tourism Projects in KP to meet the resource gap and create fiscal space for the government to divert scarce resources to other projects. This will also take care of the government's implementation capacity constraints by bringing in the private sector's efficient management skills.

866. Conservation of natural environment and cultural heritage should be part and parcel of the development strategies. Environmental considerations should be kept in view while designing and implementing any Tourism project. TCKP should coordinate with Environmental Protection Agency (EPA) to conduct Initial Environment Examination (IEE) and Environmental Impact Assessment (EIA) for the hotels and ensure adherence to environmental standards.

867. Having quality tourism infrastructure is a prerequisite for attracting tourists. Important components of infrastructure include access roads, roadside facilities, transport facilities, accommodation facilities (hotels, motels, youth hostels, camping sites etc.), restaurants, tourist resorts and activity sites, tourist shops, tourist information centers, medical/first aid facilities etc. An important consideration in developing infrastructure is that the developed facilities should be indigenized and harmonized with surrounding environment and should not lose the local cultural touch since the tourists come to experience the local specialties.

868. There is serious lack of basic facilities such as electricity, water supply, sewerage and solid waste management, safe parking areas, walking paths and information sing posting at all the site in project areas. Special attention need to be given develop these basic facilities to improve the delivery of better tourist services and help to provide a pleasant touristic experience to the visitors.

869. As the tourist traffic is increasing in most of the project areas so there is need to identify and develop new tourist sites; including scenic locations, historical sites, museums, parks, adventure tourism facilities and theme parks, etc. Development of these new sites should be the part of an overall tourism development plan based on the principles of sustainable development so that there is no compromise on the quality of natural environment and cultural heritage. The target market for each new site should be identified and detailed feasibility studies should be developed to ascertain the commercial viability of the projects. Effort should be made that local community could gain maximum socio-economic of such new develop projects.

870. To improve and strengthen the implementation of standards and certification for the hotels, restaurants and tour operation services. Hotels, restaurants tour guides and tour operators should be issued license to do business once they are evaluated and awarded a rating certificate by a qualified certification body. It should be mandatory for the hotels, restaurants and tourism businesses that the certificates are displayed at prominent positions at their reception desks to inform the tourists about the quality of services. DTS should take the lead in this regard.

871. Development strategies for different areas should only be designed with the participation of local community for ensuring its ownership and support. Opinion makers of the society like religious leaders, community heads, teachers, social workers, etc. should be mobilized for improving affinity of local communities for Tourism in KP. It will be useful to highlight potential job creation opportunities and economic benefits in these mobilization campaigns. The importance of civic responsibilities, cleanliness and waste management should also be promoted through religious leaders. Along with creating religious tolerance, it is equally important that the Tourism strategy should not violate local culture and traditions.

J.4.2. Region Level Recommendations

872. In order to make tourism in Swat a key engine of socio-economic development there is need to focus on the following interventions.

873. The unplanned construction and mushroom growth of hotels at popular tourist sites such as Fizagat near Mingora, Baharin, Madyan, Miandam and Kalam etc. has created a lot of problem related to the environment, health and sanitation. Ironically, many of small and large hotels have been built on the banks of the rivers on the reclaimed land or on mountain slops where trees have been cut to clear land. In the absence of proper land use planning, sewage water from such hotels is directly polluting the rivers ultimately damaging its aquatic fauna and creating health related issues for local population and visitors of these areas. As a first propriety there is need to incorporate the eco-friendly appropriate technologies such as wastewater water treatment, solid waste disposal, use of energy efficient lights, solar water heating etc. to minimize their negative impacts on the natural environment.

874. There is need to have strict control on the undesirable and unplanned development of concrete structures and no new hotel should be construction without the prior approval from the concerned department. For new investors in hoteling business there is need to provide them proper guidelines by the tourism department so that the new hotels and guest houses are properly designed and built to meet the acceptable service standards of tourist accommodation, their overall outlook is in harmony with surrounding natural environment and their operational system is not damaging the natural environment in any case.

875. In Swat, tourism is a seasonal business activity and to meet the increasing demand of tourist accommodation in coming future there is possibility to develop good tourist resorts at different locations of Swat valley by involving local entrepreneurs. Depending on the acceptability by the local community, in some selected areas concept of community managed eco-lodges can also be introduced.

876. The domestic tourist traffic is increasing to Swat and there is need to harness the potential of this existing tourism to make it more eco-friendly and culture friendly by creating awareness and adopting the best practices of responsible and sustainable tourism.

877. There is also need to develop standards on appropriate behavior to make tourists as well local community members eco-conscious and culture friendly. This can be achieved by developing code of conducts for tourists and tourism service providers. A community based system should also be established to enforce this code of conduct and those how don't respect this code should be penalized through a fine system.

878. Many areas in upper Swat at still intact in terms of its natural beauty and biodiversity. To the north of Kalam there are several beautiful valleys, having thick forests, waterfalls, glaciers, lakes and meadows. Most of these places are still intact and has excellent potential for ecotourism. Ecotourism should be encouraged in such areas through adequate awareness and consciousness about the conservation and protection of natural resources for the enjoyment and benefit of both locals and visitors.

879. In the area of lower Swat there are number of important archaeological sites which are under serious thereat due to present mushroom growth. There is also urgent need to preserve most of these sites by developing some community-based heritage conservation initiatives. In the recent past Italian Archaeological Mission's ACT Project has done some remarkable work in building the capacity of local communities at four archaeological sites in this area. There is

possibility to further replicate this project at some more sites to make this area a hub of sustainable archaeological tourism in Pakistan.

880. As a whole the hotel industry in Swat district is quite developed and perhaps the largest in Khyber Pakhtunkhwa. There are more than 450 hotels and guest houses of different categories located at Mingora, Saidu Sharif, Malam Jabba, Madyan, Miandam, Bahrain and Kalam. There are many good hotels but generally the standard of services of these hotels and their overall ambiance and hygienic conditions are not up to the mark. There is a particular need to improve the hygienic conditions of these hotels and built the skills of their management staff through training, grooming and exposure visits. Moreover, all the hotels must be registered with Department of Tourist Services (DTS) to ensure that they follow some minimum service standards and their rates are properly regulated through a price control mechanism.

881. There is good potential to develop more recreational facilities for tourists such as parks, pick spots, fishing points, adventure sports clubs. Water sports and winter sports activities should be developed in collaboration with private sector with proper safety and environmental SOPs should be developed and implemented to ensure safety of the visitors.

882. Many areas of Swat have excellent opportunists of the trekking and hiking in the mountain valleys. Selected trekking routes should be developed with proper walking trails and halting camping sites to promote the segment of trekking and hiking in Swat region.

883. In order to promote private sector investment in tourism related projects government should introduce incentive package for new investors in tourism. This could be based on tax holiday for tourism project for first 5 years, provision of government land on low rates, provision of utility services to tourism projects on priority basis and development of basic infrastructure.

884. The good road access plays key role in tourism promotion. Most of the roads linking tourist sites in Swat are not up to the mark. There is need to develop good road network with proper safety and signage. Moreover, arrangements should be made to keep Kalam and Malam Jabba road open during snow fall season to attract winter tourism to these areas.

885. The local government role at the level of destination is very important. It should ensure that there is proper coordination among the key support department to provide a safe and eco-friendly environment for tourism to grow in a sustainable manner. The issues of water supply, electricity provision, road clearance, solid waste management, sewerage treatment and disposal, provision of health facilities to the locals and visitors, safe transport are the key areas where local government should play its due role in an effective manner At present there is no local level institutional setup to oversee the development and promotion of tourism in Swat district. There is need to establish district level Destination Management Organizations (DMO) to bridge this gap.

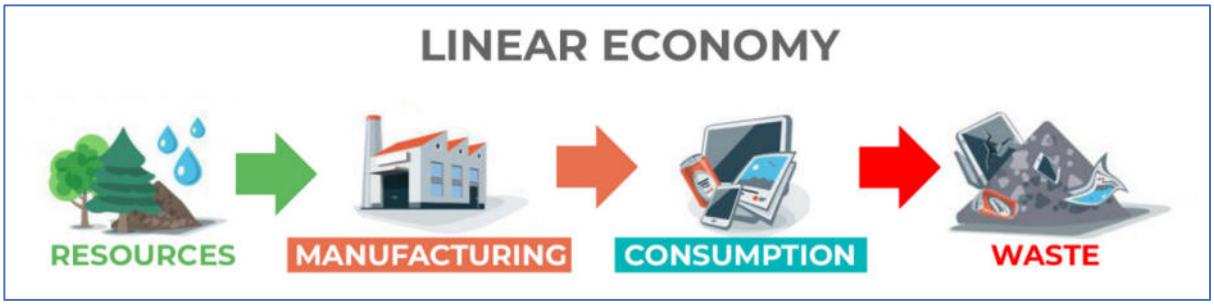
PART III:

IMPLEMENTING THE URBAN AGENDA

K. INNOVATIONS

K.1. Circular Economy

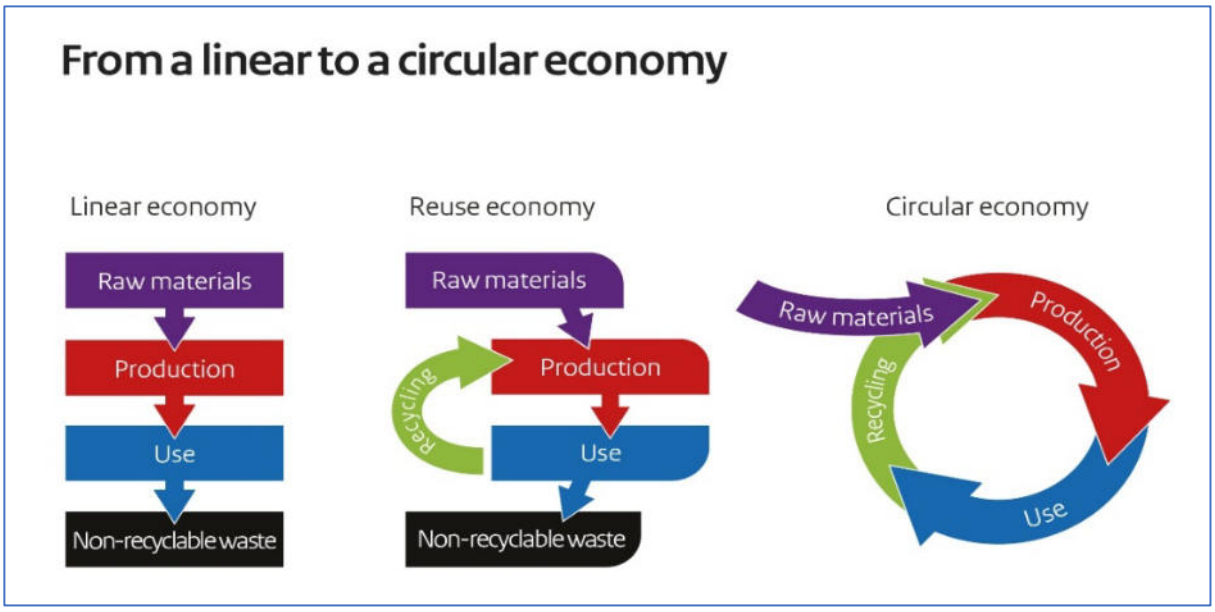
886. In accordance with the Sustainable Development Goals advocated by the KP Government, the introduction of circularity in project design and implementation is an important and increasingly significant element. Traditionally, project design and consumption is based on a linear economy which is characterized by the extraction and use of virgin resources, their conversion into usable products and then the disposal of products back into the environment at the end-of-life (with or without treatment to render them 'safe').



887. An approach based on a linear economy is perceived, increasingly, as unsustainable from a number of perspectives, including, but not limited to, the following:

- Increasing scarcity of resources through, for example, depletion of resources or from climate change-induced impacts.
- Increasing demand on finite supplies of resources arising from population growth and demographic changes.
- Environmental degradation resulting from extraction of virgin resources and inadequate management and disposal of untreated waste materials back to the environment.
- Financial and economic costs of disposal of materials perceived to be waste.

888. The concept of circularity, as against a linear economy based on end-of-life concepts, implies the introduction and progressive adoption of systems and processes to promote and maximize the re-use of resources and minimize the use of virgin resources.



889. Key features of circularity are:

- an economic system that is based on business models which replace end-of-life-concept
- with reducing, reusing recycling, and recovering materials
- in production, distribution and consumption processes,
- operating at micro, meso and macro levels,
- with the aim to accomplish sustainable development, which implies creating environmental quality, economic prosperity, and social equity,
- to the benefit of current and future generations

890. Following this definition implies a strategy with a fundamental rethinking of production. It is clear that this is hampering, not only in Pakistan, but in most countries all over the world, because of a lack of short-term economic justification.

891. Most important reason are the poor short term economic feasibility of circular technologies and therefore the low sense of urgency: If for example natural gas is available during the next decennia, the driver to produce biogas out of waste or wastewater is limited; if sufficient drinking, process and irrigation water is available, the sense of urgency for water reuse also is limited.

892. Other high strategic drivers might be addressed as:

- capacity of planet earth
- depletion of resources (water, energy, raw materials)
- global warming, GHG, heat stress cities
- cleaner, resilient cities, ecosystem protection, sustainable production and consumption

- reducing import dependency

893. Although commonly accepted also as drivers in circularity, these drivers are in a situation with limited financial resources unfortunately lower in ranking than the economic feasibility especially in developing countries. Therefore, these drivers are seldom enough to introduce and stimulate circularity in a situation with a limited economic feasibility.

894. Two situations can be identified to create a breakthrough:

- Although no actual depletion of water, energy or raw materials yet, it is expected this might occur within a short time frame. Public and private organizations require these time frame to prepare themselves.
- Circularity might be stimulated by financial institutions in providing loans under conditions to apply circular technology and applying life-cycle considerations during project design. The driver for the banks might be that circularity at the long term provides the best conditions for repayment of the loan.

895. Introducing circularity at RDP level, the following technologies might be relevant:

- producing reusable water from wastewater
- producing biogas/energy from organic waste, sewage sludge or wastewater
- recovery raw materials from waste of wastewater

K.1.1. Biogas Production out of Organic Waste, Wastewater and Sewage Sludge

896. Municipal wastewater and specific industrial wastewater (e.g., food processing industry) have high organic concentrations. Currently no municipal nor industrial wastewater treatment plants are operational in Swat region. When discharged these organics cause bacteriological pollution of groundwater and surface water and may result in serious health risks. In common STP processes wastewater is treated by precipitation and biological treatment. Both processes produce organic sludge, which can be digested. The digestion process results in bacteriological stabilization and biogas production. The biogas produced contains 50-65% methane (natural gas = approx. 85% methane). From a circularity perspective the biogas may be captured and re-used in industrial processes (for example, local brick production) or as a source of domestic fuel, thus substituting for fossil fuels. The sewage sludge might be co-digested with organic waste. Digested sludge and organic waste are well known fertilizers and from soil improvement.

897. The Swat region has a high fruit and vegetable production with links to food processing industries. The wastewater from these industries is high concentrated and easy biodegradable. Individual industrial wastewater treatment might be considered for specific fruit processing industries wherein the produced biogas is used in their processes.

K.1.2. Production of Reusable Water out of Wastewater

898. Currently the wastewater in the Swat region isn't treated yet; untreated wastewater is discharged to the rivers. The Swat region is well known for its high fruit and vegetable production. This production is much depending on sufficient (irrigation) water of acceptable

quality. As fruit and vegetable production is planned to increase, also water demand will increase.

899. As Pakistan has an enormous irrigation infrastructure network sufficient water is available for no or limited costs in most agricultural areas. When (municipal) wastewater treatment will be developed, the treated wastewater might be a good irrigation water source in area wherein insufficient surface water is available.

900. The treated wastewater contains almost no organics and depending on the process design parameters more or less nitrogen and phosphorous. Both nitrogen and phosphorous are fertilizers which are valuable for agricultural purposes. Developing this water reuse option, it is recommended to situate WWTPs not only close to urban areas, but also close to the agricultural areas where insufficient irrigation water is available.

901. Other reasons to consider reuse for irrigation not only for agriculture but also are to substitute for potable water for irrigating public parks and gardens.

902. Surface water/rivers not only are a source for irrigation water, but also for drinking water resources. Drinking water resources like groundwater often are polluted due to the absence of a proper sewerage network. Developing the sewer network is necessary but will take many years. Therefore, it might be considered to temporary use treated wastewater as an irrigation source. This not only increases the possibilities to use surface water as a drinking water source and can cover the future demand due to population increase. It also enables to replace groundwater as a drinking water resources in areas with polluted phreatic groundwater.

903. In the common wastewater treatment, treated wastewater has no value. It is discharged to a river, it is downstream used as drinking water or irrigation water, or flows towards the sea. Therefore, it might also be expected farmers are not willing to pay for the treated wastewater. However, nutrients such as nitrogen and phosphorous may be a source of fertilizer and create value. Still farmers might not be willing to pay, because they are not able to pay or do not know the impact of the fertilizing components. In the last case a testing period might be required wherein in water is temporary provided for free This requires limited investments in creating storage facilities. Then also checks are made if the treated water complies with the standards for reuse.

K.1.3. Relevance for the Swat Region

904. Table 54 shows the possible circular technologies summarized on its source.

Table 54: Possible circular technologies

Product	Drivers	Constraints
ORGANIC WASTE		
Biogas from agricultural waste especially fruits	• Reduced oil consumption • Eco system protection • Easy biodegradability • Reusable in food processing processes	• High CAPEX • High national natural gas resources available

Product	Drivers	Constraints
Biogas from municipal organic waste	• Drought • Reduction gag, global warming • Might be combined with sewage sludge digestion	• Limited biogas production • High CAPEX • As sole measure limited impact on gag • No current collection system organic waste • No gas distribution infrastructure available • High national natural gas resources available
Digested waste for soil improvement	• Increase agricultural production • Might be combined with sewage sludge digestion	• High CAPEX • No current collection system organic waste • Farmers not willing to pay for • Farmers have no experience to reuse digested waste
MUNICIPAL WASTEWATER		
Irrigation water	• Increase agricultural production • Drought • Reduced heat stress in cities • Substitute for potable water for irrigating green spaces	• Limited regional agricultural activity • Farmers only willing to pay during drought • No STPs available yet • Limited urgency on water availability
Organics recovery from municipal wastewater to produce polymers	• Reduced oil consumption • Eco system protection	• Requires development value chain for each polymer • High innovative technologies
Biogas from sludge digestion	• Depletion of resources/natural gas • Reduction gag, global warming • Might be combined with organic waste digestion	• High CAPEX; only on big scale • No STPs available yet • As sole measure limited impact on gag • High regional natural gas resources available
Sludge for soil improvement and fertilizer	• Increase agricultural production • Might be combined with organic waste digestion	• High CAPEX; only on big scale • No STPs available yet • Limited regional agricultural activity • Farmers not willing to pay for soil improvement • Farmers have no experience to reuse sludge
INDUSTRIAL WASTEWATER		

Product	Drivers	Constraints
Reusable water	• Guarantee industrial processes • Increase agricultural production • Draught	• Limited regional agricultural activity • Limited regional industrial activity • Farmers only willing to pay during draught • Limited possibilities for water reuse due to specific pollutions • No separate industrial wets available yet • Limited urgency on water availability
Biogas	• Depletion of resources/natural gas • Reduction gag, global warming • Might be combined with organic waste digestion	• No STPs available yet • As sole measure limited impact on gag • High regional natural gas resources available

905. Table 54 shows that in the area covering this RDP; however, introducing circularity has relevance especially in linking waste and wastewater treatment with agricultural activities in this region.

906. Therefore, the following strategy in circularity is proposed:

- Develop an overall circular strategy for water, wastewater, waste and energy for over 20-25 years.
- Focus on links between waste/wastewater treatment and agricultural activities and its links food processing
- Prevent developments and high investments which are in conflict with the 25-year-view. This implies most investments with for example a fifteen years depreciation are not in conflict.
- Start with applying and demonstration circular processes and approaches at a small and limited scale and accept the limited circularity of certain concepts.
- Consider setting up a road show to present circular experience from business cases all over the world which might be applied in this region
- Accept a testing and learning period wherein clients have to get used to the new developed circular products and you might provide it for a limited price or even for free.
- Try to combine (unlikely) businesses: the waste product from one industry might be a source for another
- Involve life-cycle assessments is the design phase of project development
- Consider how financial institutions circularity might be stimulated by providing loans under conditions to apply circular technology

- Focus on circular concepts using proven technology, financial economic feasibility and a well-developed governance. Understand that the governance is most difficult as industries and public organizations have to cooperate, which till now might have never been cooperating with each other.

907. The following tables show the optional circular technologies summarized on its source.

K.2. Climate Resilience

908. In terms of innovative approaches to tackling climate resilience we would like to propose two approaches.

K.2.1. Insurance for Natural Hazards

909. Insurance for natural hazards are a protection against natural hazards by offering those that suffer losses compensation via an insurance scheme. This type of insurance reduces the catastrophic impact of disasters, enables a timely recovery, and can be coupled with other disaster Risk management to soften the impacts of catastrophic events on vulnerable communities. Insurance can and should also be linked to Risk reduction and preventive activities. Prudently employing a combination of insurance measures with risk reduction, including, early warning, education, infrastructure strengthening, and land-use regulations, can greatly reduce the immediate losses and long-term development setbacks from disasters. In addition, by creating a secure investment environment, insurance instruments can enable productive risk taking on the part of individuals and governments, and in this way reduce disaster-induced poverty traps. However, insurance for natural hazards is not affordable or even available to many in the most vulnerable communities in Pakistan. This has led the Government of Pakistan to work with the Munich Climate Insurance Initiative (MCII) and supported by the Climate Development and Knowledge Network (CDKN) in a project to design a viable national fund designed to help the most vulnerable communities better manage natural hazards.[357]

910. In 2019 the World Bank, in cooperation with UK Aid, developed detailed proposals to develop more effective key priorities for the first national Disaster Risk Financing Strategy of Pakistan. The identified options were presented for consideration of the GoP during the National Consultation on Disaster Risk Finance in July 2019. The Disaster Risk Financing Strategy and implementation plan will be developed by the National Disaster Risk Management Fund (NDRMF) in coordination with the GoP.[358]

911. As part of this Regional Development Plan the consultants would like to propose to ADB and the Government of KP to engage with these initiatives, and to ensure that an enabling environment is created to make headway with these initiatives, as they are crucial to improve resilience from climate impacts.

K.2.2. Sponge City

912. For the urban development of Pakistan, and also very applicable to KP and Mingora, is the concept of a Sponge City. In light of the natural hazards that Mingora has to deal with

[357] Adapted from: https://climate-insurance.org/projects/designing-a-disaster-risk-insurance-framework-for-pakistan/

[358] Options to Strengthen Disaster Risk Financing in Pakistan, World Bank, UK Aid, 2019

and that are identified above, a Sponge City approach is proposed to become part of the urban design of the city and for other urban areas in the region.

913. The concept of Sponge City envisages a particular type of urban development that does not act like an impermeable system, thereby precluding water from filtering through to the ground, but, more like a sponge, actually absorbing rainwater, which then percolates to the (urban) aquifers. Amongst other benefits, this allows for the extraction of water from the ground through (urban or peri-urban) wells. This water can be readily used for irrigation of urban green spaces, thereby replacing the use of potable water, or easily treated and used to supplement the city's potable water supply.

914. Sponge cities need to have abundant spaces that allow water to seep into the underlying ground. Instead of only impermeable concrete and asphalt, the city needs more:

- Contiguous open green spaces, interconnected waterways, channels and ponds across neighborhoods that can naturally detain and filter water as well as foster urban ecosystems, boost biodiversity and create cultural and recreational opportunities.
- Green roofs that can retain rainwater and naturally filter it before it is recycled/re-used or released into the ground (rainwater catchment).
- Porous design interventions across the city, including construction of bio-swales and bio-retention systems to detain run-off and allow for groundwater infiltration; porous roads and pavements that can safely accommodate car and pedestrian traffic while allowing water to be absorbed, permeate and recharge groundwater; drainage systems that allow trickling of water into the ground or that direct storm water run-off into green spaces for natural absorption
- Water savings and recycling, including extending water recycling particularly of grey water at the building block level, incentivizing consumers to save water through increased tariffs for increase in consumption, raising awareness campaigns, and improved smart monitoring systems to identify leakages and inefficient use of water.[359]

915. These are ambitious proposals for Swat district, but worth considering in light of the environment and the climate change impacts expected, and in some cases already manifesting.

[359] Adapted from: https://www.worldfuturecouncil.org/sponge-cities-what-is-it-all-about/.

L. INSTITUTIONAL REFORMS

L.1. Legal and Institutional Framework

916. Addressing governance and institutional challenges in urban services provision requires decisions based on a review of mandates and capacities. Participation from provincial policy makers will be essential, in order to lead to political and technical decisions. The review and decision-making process needs to consider the following points as a minimum.

917. A reaffirmation of the mandates of WSSC, and those of the respective city development authorities and TLGs needs to be the first step in the review process. The review should confirm the mandate and come to an agreement on the bottlenecks that impede the achievement of this mandate. Human resources issues (Chapter D4) need to be underscored.

918. The Review needs to confirm that staff capacities are a main barrier, and agree on solutions to resolve this. No single solution can address the inadequate human resource capacities and non-performance of staff in WSSC and TLGs. Instead, the Review should debate, consider and decide on the best mix of solutions, including (a) legislation that makes it possible to offer performance-based career advancements for government staff, and golden handshakes for non-performers; b) contract employment, especially of lower echelon staff, as many banks have done, c) natural attrition of non-performing government staff, and d) capacity development for staff with potential.

919. The Review also needs to explore approaches to move towards greater financial predictability and efficiency. While it is unrealistic to expect WSSC (and TLGs) to become financially sustainable in the short to medium term, it is possible to have more predictable, better-planned financing strategies and greater efficiency than those in the current arrangement. The consultations need to explore a range of measures and develop a tailored approach including the following:

i. **For greater efficiency in reaching the poor**: (a) stratified tariffs for water services for different classes of customers, with cross-subsidization, (b) connection rather than consumption subsidies, (c) pre-paid meters (possibly at subsidized tariffs for the poor) which allow households to control their total expense on the service, and (d) a voucher system or targeted cash transfers for the poor, based on means testing.

ii. **For greater financial predictability and efficiency**: (a) the establishment of an endowment fund by the provincial government, (b) the provision of a single line grant through an annual transfer from the provincial government to the WSSCs, and (c) increased use of technology to improve efficiency, reduce unmetered water and illegal connections.

920. To garner political and public support for the decisions that ensue, the Review will require robust data and transparency on losses, revenue and poverty. Targeting of poor households could be done through existing social welfare information systems.[360] Calculating the transfers needed from the provincial government (whether through annual grant or endowment fund) will require robust data on the losses made by each WSSC, the losses that

[360] These include (but are not necessarily limited to) the National Socioeconomic Registry (NSER) of the Government's Benazir Income Support Programme, an approach that uses poverty scorecard surveys to identify eligible households through proxy means. Available from: https://www.pitb.gov.pk/bisp Accessed 1 July 2020.

could be avoided, households' willingness-to-pay, and the projection of revenue following new tariff structures and greater efficiency in operations.

921. An additional policy measure is required if WSSCs are to receive annual grants from the provincial government. Receipt of such public funds will require audits of WSSC by the Auditor General of Pakistan. However, WSSCs are subject to audits by third-party chartered accountants, in line with their registration under the Section 42 of the Companies Act, 2017. To avoid audits by two different bodies at different times, with accompanying disruption of work, a provincial level policy would be required to exempt WSSCs from audits by the Auditor General of Pakistan.

922. Effective management information systems need to be established and strengthened. The administrative systems need to produce data robust enough for annual planning. Local surveys and censuses are periodically required, to produce disaggregated data. In addition, efficient and transparent complaint response mechanisms are required.

923. Capacity strengthening of the institutions responsible for planning, delivering, and management of urban services is a top priority. Many government staff consider training and professional development as opportunities. Hence, such training should be used as incentives for performing staff. L.3 covers capacity development strategies.

L.2. Revenue generation and Financial Management

L.2.1. Structure of Public Budgeting

924. The Constitution of Pakistan contains broader provisions for management of public finance. The 18th Constitutional Amendment has redefined the structural contours of the State through a paradigm shift from a heavily centralized to a predominantly decentralized federation.

925. It reinforces a multi-level governance system by extending greater autonomy to the Provinces and laying down fundamentals of substantive decentralization at the lower tiers of local government.

926. The KP Local Government Act, 2013 provides the framework for establishment of local governments at District, Tehsil and Village/Neighborhood Councils, and institutional framework for local government finance and distribution of resources.

927. The Department of Finance is (DoF) responsible for the supervision and control of provincial finances, preparation of the budget, formulation, execution and interpretation of financial rules related to employees, management of public funds and debt, banking, coordination of the National and Provincial Finance Commissions and administration of Local Fund Audit.

928. The Planning and Development Department (P&DD) is the custodian of the development budget of the province and is therefore another important institution directly involved in Public Financial Management (PFM). The P&DD is responsible for implementing development plans and plays a critical role in policy making (provincial and sectoral policies, setting priorities of projects against resource availability, and appraising and processing development projects) and implementation (monitoring releases and inter-sectoral re-appropriation), and in monitoring and evaluation of the development projects.

929. The Accountant General (AG) of the province is responsible for maintaining accounting records, pre-auditing of financial transactions of centralized accounting entities in the province, and for preparing periodic financial reports for the Provincial Government. The AG also prepares the financial statements for district governments.

L.2.2. Public Financial Management Reforms

930. The Public Expenditure and Financial Accountability (PEFA) assessment (2007) and Fiduciary Risk Assessment (2010) by the UK Department for International Development (DFID) created a stimulus for the first PFM reforms strategy adopted in 2010 to improve budget formulation, execution, and fiscal disclosures. The Public Financial Management Reforms Strategy builds on the following objectives:

(i) Making budget strategic by linking policy, planning and budgeting.

(ii) Making budget result oriented by introducing output based budgeting.

(iii) Enhancing the capacity of line departments to prepare, execute and monitor their budget.

(iv) Improving budget execution and reporting.

(v) Improving monitoring and evaluation.

931. Cognizant of the growth challenges ahead and acting upon Post Crisis Needs Assessment (PCNA) for Khyber Pakhtunkhwa/FATA carried out by the Government of Pakistan (GoP) in October 2010, a harmonized donor approach was agreed upon to meet the short- and medium-term social and economic needs of the province, one of which was the establishment of the Multi Donor Trust Fund (MDTF). As one of the important outcomes of PCNA, the Public Expenditure Review (PER) 2012 of Khyber Pakhtunkhwa province was funded by MDTF and undertaken in partnership with the World Bank and Government of Khyber Pakhtunkhwa.

932. The PER 2012 report recommended that Khyber Pakhtunkhwa should assign more of its budget to operational and maintenance costs for existing physical infrastructure. It should also ensure predictability of funds by releasing funds in a timely fashion. Furthermore, PER 2012 recommended that not to spread resources across to a large number of projects and to prioritize project completion over new projects.

933. The Government of Khyber Pakhtunkhwa partnered with the World Bank for a PFM in 2015 (published in 2017) to assess the effects of its reforms since PER 2012. While noting areas of progress, the 2015 PFM assessment highlighted ongoing unrealistic projections for public expenditures and revenue. Consequently, frequent budget adjustments are necessary during a fiscal year and complicate PFM and strategic budgeting. Fluctuations in federal transfers are additional challenges for PFM.

934. These challenges are aggravated by the lack of systems and capacity for legislative oversight. The 2015 PEFA, confirming repeated findings by the Public Accounts Committee's (PAC), noted weak internal controls at the line departments and a lack of interest in the executive branch to comply with PFM directions. Internal audits only address matters of (technical) financial compliance rather than looking for opportunities to strengthen processes, evaluations, and quality assurance.

935. Incremental increases in the Annual Development Program (ADP) are slowly eroding the power of devolved and output-based budgeting. The provincial development portfolio includes projects that, if analyzed on the matter of importance, should have been under the decision authority of the local governments. Devolved budgeting may be further diminished by funding as-yet unapproved projects and by approving projects that currently have no funding ('throw forward'). Redirecting the ADP's focus to investments that strategically strengthen the province provincial creates room for devolved budgeting and likely improve resource allocation.

936. Achieving the potential of medium-term and strategic budgeting frameworks requires balancing operational expenditures (e.g., maintenance of infrastructure) and strategic development investments. This should be a multi-level political process that follows the proper regulatory mechanisms and processes that enable informed and transparent budgeting. The Finance Department has been leading financial management reforms in the province. It has also started an ambitious program to introduce the Medium Term Budgeting Framework (MTBF).

L.2.3. Public Budget and Climate Change

937. The Government of KP has been pursuing a citizen-centered model for socioeconomic development, focusing on reducing poverty and achieving peace through an integrated and holistic approach. It has also been investing in tackling climate change through initiatives such as the Billion Tree Tsunami, Peshawar Metro, and efforts to combat deforestation. According to the 2017 Climate Public Expenditure and Institutional Review (CPEIR), between 2010 and 2016 the KP government has been making climate change expenditures to the tune of 5.3% to 8.9% of total expenditures each year.

938. One specific recommendation of the CPEIR endorsed and launched in 2017 included the development of a Climate Change Financing Framework (CCFF). The CPEIR was a critical step for establishing a baseline of climate change related expenditures (both development and non-development) and to identify patterns. It looked at climate change expenditures of the province, also in relation to expenditures incurred by federal government, Azad Jammu and Kashmir (AJK) and Gilgit-Baltistan. A system for climate expenditure monitoring and tracking under the CCFF can generate more sustainable and reliable information for policy formulation.

939. The CCFF outlined an action plan to integrate climate change into KP's Public Financial Management system after stakeholder consultations and consensus building:

- Integrating a climate change lens in the MTBF is a critical CCFF component. To ensure line departments consider climate change when identifying and proposing budgets for new projects, and developing MTBFs, the Finance Department (FD) will amend the Budget Call Circular (BCC). The amendment would ensure a climate change focus is incorporated into the MTBF for climate-relevant departments.

- Budget/financial reports including information on climate spending can assist policymakers in making resource allocation decisions and tracking progress against policy targets/KPIs. The quality and timeliness of climate change expenditure reporting depends on generating and managing information on allocation and spending.

- Development of the provincial adaptation plan and sector action policies will be the logical next step after systemic and process changes for climate change integration.

A provincial-level strategic approach to climate policy and planning will require line departments to prepare sectoral policies and plans in accordance with larger goals and objectives, while accounting for sector and department level financing.

- The FD and the P&DD will establish a robust coordination mechanism to provide strategic guidance to line departments. The KP Government will consider a climate change legislative gap analysis, including a review of relevant existing laws, such as the Environment Act. The review could support the strengthening of the legal basis for inclusion of climate change in planning and budget systems.

940. The members of the KP Provincial Assembly will have a pivotal role in steering climate budgeting and function as a platform for strengthening accountability of climate change expenditures.

L.2.4. Institutional Arrangements for Municipal Services

941. A number of government entities are involved in the governance and management of the urban areas of Swat. There is no dedicated authority to lead city-wide urban planning and development. The range of entities active in the urban sector fall under the authority of different ministries and offices at the provincial and regional levels, with differing mandates, interests and accountability requirements. This complicates the ability to coordinate urban planning processes and to develop unity of purpose.

942. The main entities involved in Swat District's urban development and administration are:

- City Local Government
- Tehsil Local Government (TLG)
- Swat District Development Authority (SDDA)

L.2.4.1. Swat District Development Authority

943. Solutions were needed to address the growing housing problems in the large urban centers of Swat, created by rapid population growth, urbanization, scarcity of government resources, and socio-economic imbalances between urban and rural areas. To face this challenge, the (now defunct) Provincial Urban Development Board (PUDB) established the *Malakand Division Development Authority (MDDA) via* Notification on 29/11/1989. After the promulgation of LGA 2013, the PUDB was dissolved and the MDDA was re-named to *SDDA*.

944. The main functions of the SDDA are:

- To provide housing facilities in the urban areas of District Swat.
- To execute all kinds of developmental schemes in the urban areas duly financed by the Provincial/Federal Govt.
- Any other objectives/functions assigned by Provincial/Federal Govt.

945. The SDDA is now working under the Administrative control of Secretary Local Government, Elections and Rural Development Department, Government of Khyber Pakhtunkhwa.

946. It is worth noting that, despite the tasks and powers outlined above, responsibility for city-wide urban planning is not clearly owned or demonstrated by any of the above-named

agencies. Similarly, the responsibility for municipal service delivery has been inconsistent, resting first with the PHED, then the TLG, and now residing with Water and Sanitation Services Company Mingora Swat (WSSCM-S).

L.2.4.2. Tehsil Local Government, Mingora Babuzai

947. The budget of TLG Mingora for 2018-19 has been projected using average growth rate based on average growth rate forecasts under the KP budget strategy paper II 2018-19 and has been further applied to projections from 2019-20 onwards.

948. Considering first the budget of TLG Mingora for the FY 2019-20, the total revenue is PKR 600.31 million. This compares to PKR 470.26 million budgeted for FY 2018-19, showing a revenue increase of PKR 130.05 million.

949. The total budgeted expenditure is PKR 695.71 million in 2019-20 as compared to PKR 595.89 million budgeted in 2018-19. This represents a net expenditure increase of PKR 99.82 million over the 2018-19 year, which ended with a deficit of PKR 95.41 million that was met from actual budget savings from the previous financial year.

950. If we analyze the TLG budget of Mingora Babuzai for the FY 2018-19, the total revenue was PKR 470.26 million as compared to PKR 355.73 million estimated for FY 2017-18, a net increase of PKR 114.53 million which was mainly due to increase in PFC share and share of local taxes collected at provincial level in 2018-19. The revenue budget increased on average at the rate of 68 percent from 2017-18 to 2018-19 with extreme increase of 119 percent in provincial transfers over the same period mainly due to increase in 30 percent PFC share allotted to TLGs in the Provincial budget and a 32% increase in share of local taxes collected at provincial level. The increase in the budgeted expenditures from PKR 377.95 million in 2017-18 to PKR 595.89 million in 2018-19 was mainly due to New Development Expenditures in ADP 2018-19 and an increase in the TLG's share of Water and Sanitation Services Company Mingora (WSSC Mingora) operational expenses.

L.2.4.3. Water and Sanitation Services Company Mingora

951. The WSSC Mingora is a new addition to the institutional architecture for managing essential municipal services like water supply, wastewater, and solid waste management in KP. WSSC Mingora was established by GoKP under s42 of the Companies Ordinance 1984 in May 2015. WSSC Mingora started operations in October 2016 to provide integrated improved drinking water, sanitation, and solid waste management services in the Mingora Babuzai tehsil of Swat District. WSSC Mingora is an integration of PHED and TLG and is operating in the UCs of tehsil Mingora Babuzai for the provision of municipal services to the population of urban towns and cities under the (current and future) jurisdiction of WSSC Mingora.

952. The Services and Assets Management Agreement (SAMA) was signed on 26 July 2017 between the provincial government, TMA and the WSSC Mingora. The SAMA sets out the functions and responsibilities of the provincial government, the TMA, and the WSSC. The SAMA transfers the responsibility for management and operation of drinking water, wastewater, and solid waste management to WSSC. This transfer includes all relevant assets, facilities, and control over staff transferred to the WSSC. The SAMA stipulates other requirements for WSSC, including benchmarking of services, developing key performance indicators, and producing a business plan and a budget.

953. The WSSC Mingora uses the budget earmarked for development schemes included in the provincial ADP for urban areas of Mingora. The operational budget of WSSC is provided by the provincial finance department under approval from the Secretary, LGE&RD. The provincial government has undertaken to finance all existing and future activities, operations and meeting obligations of WSSC directly or indirectly relating to the services in Mingora Swat in addition to providing grant for development projects of Mingora Swat as stipulated under the SAMA.

954. The revenue and expenditure summary prepared by the WSSC Mingora for financial years 2017-18 and 2018-19 shows annual own source revenue from water and conservancy charges of PKR 36.96 million for 2018-19 from PKR 9.68 million in 2017-18. The increase is mainly due to the fact that WSSC took over assets under SAMA effective July 2017 and took full control of consumer billing and collection from the tehsil administration.

955. According to the summary of revenue and expenditure prepared by WSSC Mingora, the total revenue budgeted for 2018-19 is PKR 545.82 million, including transfers from TLG and provincial government, and expenditure of PKR 406.92 million. The result is a budgeted resource gap (surplus) of PKR 138.90 million in financial year 2018-19.

956. The WSSC draws on various revenue sources for its budget. For schemes, the WSSC use the budget earmarked for those schemes. These schemes can be included in the provincial ADP or in the budget of the TLG for urban centers, or the funds for the schemes adopted by provincial and national assemblies. The Provincial government transfers all funds budgeted for development and non-development expenditure of TLG relating to the municipal services to the WSSC Mingora. This makes up more than 90% of total revenue of WSSC Mingora in 2018-19.

957. The operational budget of WSSC is provided by the Provincial finance department under approval from the Secretary, LGE&RD. A small part of the budget derives from tariffs from households deposited in the WSSC Mingora's account. The Provincial government covers WSSC Mingora's capital expenditure.

958. The original intent was for the company to improve revenue collection, make efficiency gains, gradually legalize all illegal connections, and levy a fee for solid waste management in tandem with the improvement in services. However, for the foreseeable future WSSC Mingora is expected to need grants from provincial government to fill budget gaps in order to deliver the expected volume of services.

959. Water supply tariffs are low in the province to ensure affordability. The present domestic water supply rate in the urban UCs of Mingora is PKR 200 per month with conservancy charges of PKR 50 per month for domestic connections which is proposed to be retained at PKR 200 for water supply but increased to PKR 70 on account of conservancy charges for the year 2020-21. Similarly, presently water supply rates ranging from PKR 400 to PKR 1000 per month and conservancy charges ranging from PKR 1000 to PKR 10,000 per month for commercial connections are being charged by the WSSC which is proposed to be revised to PKR 500 to PKR 600 per month for water supply and PKR 100 to PKR 1,000 per month for the year 2020-21. The WSSC also charges Aquifer charges of PKR 500 for domestic

and PKR 2,000 for commercial connection which is also proposed to be revised to PKR 200 per month for domestic but retained at PKR 2,000 per month for commercial connections.[361]

960. As a result of low water rates and administrative inefficiencies, the financial position of water supply organizations in KP is extremely fragile. The people in KP contribute in kind by providing free labor to construct schemes beneficial to them but maintenance is often deferred in budgeting and water supply schemes stop functioning.

961. An affordable tariff is needed for water supply connections provided at the user's premises. The coverage of water charge can be expanded gradually, improving the revenue base for operational requirements. However, collection mechanisms for such services are costly. Moreover, water supply connections cannot be disconnected for non-payment as water is a basic human need. New schemes must therefore be financially analyzed in light of these challenges.

L.3. Capacity Development

L.3.1. Results of Needs Assessments

962. The technical and organizational capacities of public entities involved in urban planning and services were assessed. The aim was to develop long-term capacity building programs to equip and re-tool mid-level professionals in urban management and services. The assessment covered Abbottabad, Charsadda, Haripur, Manesar, Mardan, Nowshera, Peshawar, Swabi, and also the private sector.[362] Appendix 5 provides further details from these assessments. A separate assessment was conducted of WSSCs, including WSSC-Swat. The following organizations were assessed:

i. The local government institutions (District, Tehsil, Union Council, Village Council and Neighborhood Councils),

ii. The Water and Sanitation Services Companies (WSSCs),

iii. The City Development Authorities, and

iv. The Cantonment Boards, which are responsible for services in Cantonment areas.

963. Two types of capacity strengthening are required among elected officials and government staff at district and tehsil levels. The first is managerial training, strategic planning, audit, accounts, tendering and procedural issues, especially for City and Tehsil Local governments. The engineering staff within the TLGs need to be trained in preparing Bill of Quantities, tender documents, tendering and tender security, and soil testing. The other type of capacity strengthening required is technical training related to drinking water, sanitation, solid waste management, and building control. Such technical training is crucial for TLGs in areas where there are no WSSCs operating. TLGs/CLGs need to be strengthened all the more since now the role of the provincial Public Health Engineering Department (PHED) has now been devolved to tehsil level; it is unclear whether TLGs/CLGs will have the capacity to take over the former PHED role.

[361] Water and Sanitation Services Company Mingora proposed rates 2020-21.

[362] Assessments have not yet been conducted in Kohat at the time of this draft report due to the COVID-19 outbreak.

964. WSSC-Swat in general needs pre- and in-service training in management, administration and finance for relevant staff, as well as technical trainings specific to the water, sanitation, and waste management sectors for other staff. Once developed, selected modules from these courses could also be used for training of relevant district and township officials and city development authorities. Because of its operations at community level, WSSC-Swat needs to conduct community education on water, sanitation and related issues, and ensure the training of community mobilizers and community support workers (under a Training of Trainers (TOT) program) to enable them to become water care technicians. To this end, WSSC-Swat will need support in designing TOT modules, which they could implement.

965. Swat Development authorities and TLGs will need capacity strengthening to develop and implement effective land use plans, policies, and a well-designed zoning ordinance. The zoning ordinance, for example, should establish permitted land uses, differentiate between different land use types, avoid incompatible land uses adjacent to one another. The zoning ordinance should also include the designation of low-occupancy areas, such as scenic areas, areas suitable for ecosystem-based livelihoods (e.g., urban agriculture) and areas known to function as natural water drainage and storage spaces. City authorities should eventually be able to establish a planning permit system for changes to the land, with requirements for environmental/social impact assessments, if warranted. City authorities will need exposure to best examples of cities elsewhere. Triangular or south-south cooperation should be fostered between Mingora and cities that exemplify progress towards becoming inclusive, green, resilient, and competitive cities.

Table 55: Capacity issues specific to Swat district

Entity	Capacity Challenges	Proposed Measures[1]
SDDA and city local governments	• Inadequate capacity for integrated and sustainable urban planning • Need for more strategic long-term planning • Inadequate updated data collection systems on population and migration	• Training of staff on urban planning • Development of strategic plans and staff capacity building • Development of SOPs for respective departments regarding role in urban planning and development • Capacity building and MIS development for real-time data collection and feeding into MIS and informed planning
WSSCM-S	• Lack of expertise in segregation of waste • Inadequate site management capacity • Inadequate staff capacity in monitoring and quality assurance of safe water supply • Outdated manuals and asset management procedures • Inadequate capacity to determine/forecast future water needs	• Capacity building to understand different wastes and its nature • Capacity building on planning, implementation and quality assurance • Capacity building in water supply monitoring • Training in water quality testing techniques • Training in GIS and other technologies for Asset Management • Training on forecasting and planning future water needs

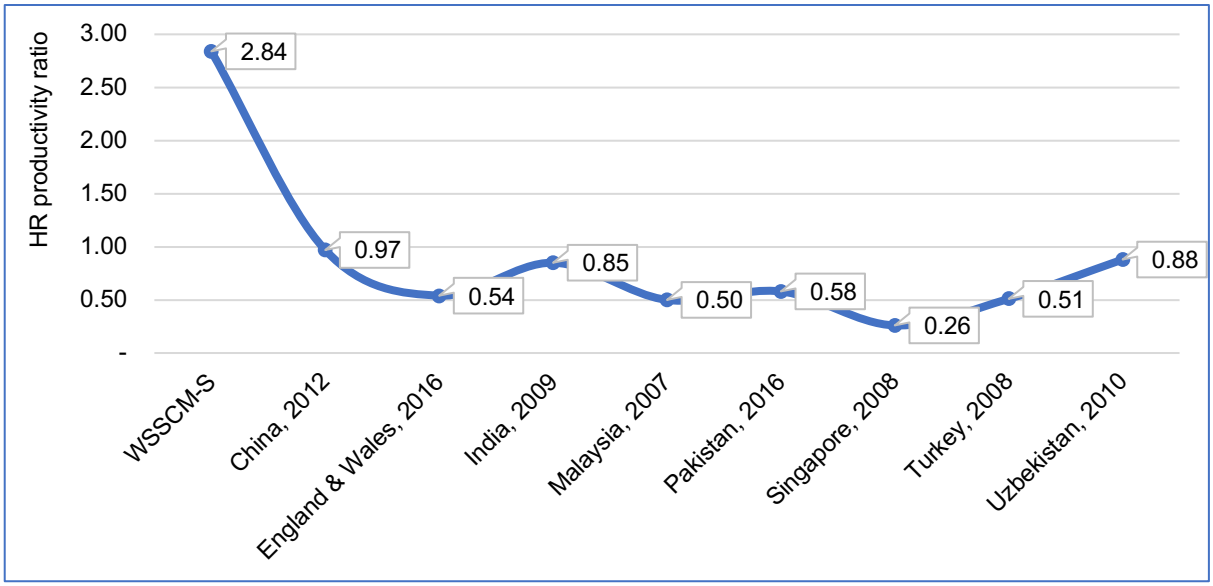
Notes: GIS = geographic information system; TLG = Tehsil Local Government; WSSCM-S = Water and Sanitation Services Company, Mingora-Swat.

L.3.2. Human Resources Management

966. In judging the adequacy of staffing for water and sanitation utilities, a standard international indicator of human resources (HR) productivity should be used, such as the total

number of water utility staff per thousand people served. Data is available on this indicator for Pakistan (national average) and some other countries.[363] A comparison of the HR productivity ratio (Figure 72) shows that the WSSC Swat appears to be over-staffed with regard to total staff, compared to the national ratio and ratios from other countries.

Figure 72: HR productivity ratio for WSSCM-S



Sources: Assessment of WSSC Abbottabad for professional staff (HR assessments) and total staff (institutional and governance assessments).
International Benchmarking Network (IBNET) online database (https://www.ib-net.org/) (for Pakistan national level and other countries.

Note: HR productivity ratio is derived from the number of the employees per 1000 people served by the city development authorities. IBNET notes that "w*hile allocating staff time to either water or wastewater services is useful, this information is sometimes not available. Comparisons are best made between utilities offering the same scope of service in terms both of total size and of mix of water and sewer services. Staff number comparisons should reflect any extensive use of outside contractors*."

967. Education and training of employees are necessary but insufficient – the employee also needs to have a certain measure of job satisfaction, which enhances performance. HR development, therefore, involves not only improving staff competence, but also employment practices, career structures, and professional and financial incentives for proven results. The performance of employees should be linked to both sanctions and incentives (e.g., career progression). In the past, an official undergoing training and qualifying for a "Post Graduate Diploma in Urban Development" would be awarded with two advanced increments in his/her salary. This is not being practiced currently, but incentives for the acquisition of accredited qualifications should be reconsidered, especially for the WSSCs, which ideally should be fully corporatized. At present, the WSSCA is the only institution that uses "promotion to the next position" and "change of cadre" as an incentive for the re-training and skills development of WSSCs.

[363] International Benchmarking Network (IBNET): https://www.ib-net.org/.

L.3.3. Strategic Partnerships

968. It is recommended to strengthen strategic partnerships with existing institutes that are able to provide training courses with content, duration and assessment mechanisms or certification tailored according to needs.[364] The proposed institutions are as follows:

i. The **Local Governance School** is the training institute of the LGE&RD Department, Government of Khyber Pakhtunkhwa. It should be used for the training of local government staff and elected officials. The School has the mandate to (i) conduct pre-service and in-service training for all Local Council Service employees and elected representatives, (ii) coordinate all capacity building activities of local projects and development partners with the LGE&RD Department as well as with Tehsil Local Governments, and (iii) conduct trainings/orientations for other government officers on local governance and service delivery. However, the School lacks the required resources and facilities for training in the more technical sectors.

ii. **The National Institute of Management (NIM), Peshawar** is part of the National School of Public Policy, a degree-awarding institution. The Institute is mandated with (i) training federal/provincial "services" officers, (ii) organizing mid-career management courses and senior management courses, and (iii) other courses in collaboration with national and international organizations.[365] It has adequate academic and residential facilities.

iii. **The Pakistan Academy for Rural Development (PARD), Peshawar** interacts with local, provincial and federal governments, researchers, academicians and non-governmental organizations working in rural development. Its functions include research and capacity building. The areas where training is offered include development planning, public administration, local government, rural development, education and communication, women in development, agricultural extension, social surveys and research, and rural sociology.[366]

969. The National Institute of Urban Infrastructure Planning (NIUIP) is the first institute in Pakistan dedicated to urban infrastructure planning and engineering. NIUIP trains service professionals in key areas such as water supply, sanitation, waste management, land use, transportation systems, energy and environment, and geographic information system (GIS) modelling.[367] In procurement, NIUIP is able to engage specialists of the Khyber Pakhtunkhwa Public Procurement Regulatory Authority (KPPRA) for the relevant courses. NIUIP offers state of the art technologies and equipment, such as satellite imagery, simulation modelling for water supply and sewerage systems, global positioning system and remote sensing tools,

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364 This has been discussed with the management and instructional staff of the NIM and NIUIP, who have agreed in principle to develop this further.

365 National Institute of Management of Pakistan. Available from: http://nim.gov.pk/index.php Accessed 1 July 2020.

366 Pakistan Academy for Rural Development (PARD), Peshawar: Training. Available from: http://www.pard.gov.pk/course.html Accessed 1 July 2020.

367 NIUIP covers the following areas in its work: infrastructure and utilities planning, urban and regional planning, urban hydrology and hydraulics, land use planning, urban transportation planning., urban environment and energy planning, water supply and sanitation, solid waste management, spatial modelling and GIS applications, infrastructure development and finance, utilities planning & service delivery, environmental laws, land use regulation and enforcement, census data analysis and policy making, urban housing, urban economics, real estate markets, urban development and design, and financing of infrastructure projects.

digital plotters, fully-equipped GIS lab with GIS scanners and GIS software, statistical analysis software and other applications. The NIUIP would be well-suited to provide the facilities for training of staff from WSSCs, City Development Authorities and other entities. Based on the identified needs, the NIUIP is able to design assessment criteria and obtain approval from its Board to issue formal competency-based certificates or diplomas for the course graduates. The NIUIP is based at the University of Engineering & Technology (UET) Peshawar.

M. IMPLEMENTATION ARRANGEMENTS

M.1. Financing the Development

M.1.1. Public Fiscal Trends

970. The total budget outlay for FY2020-21 has been set at PKR 923 billion (an increase of about 8 percent over FY2019-20). The ADP budget was set at PKR 318 billion, an increase of 1 percent over FY2019-20. The ADP budget includes PKR 83 billion earmarked for newly merged areas. In total, PKR 171 billion has been earmarked for newly merged areas.

971. The finance department has set up a separate accounting mechanism for newly merged areas to ensure that funds are spent as intended. The share of development budget in the total budget outlay was 34% in 2020-21 as compared to 37% in 2019-20. The increase is mainly due to the financing allocated to the development of newly merged areas.

Table 56: Annual Development Programmed, Khyber Pakhtunkhwa (in million PKR)

Year	Total Budget Outlay*	Total Current Budget	Total Development Budget	Provincial Revenues	Development Budget % of Total
2011-12	234,141	149,000	85,141	19,494	36%
2012-13	303,000	205,542	97,458	20,101	32%
2013-14	344,000	226,000	118,000	16,921	34%
2014-15	404,805	265,000	139,805	28,781	35%
2015-16	487,884	313,000	174,884	54,425	36%
2016-17	505,000	344,000	161,000	49,507	32%
2017-18	603,000	395,000	208,000	45,215	34%
2018-19	618,000	438,000	180,000	41,262	29%
2019-20	855,000	536,000	319,000	53,404	37%
2020-21 (E)	923,000	605,143	317,857	49,234	34%

972. Over the past few years, KP's provincial finances have improved markedly from PKR 392.8 billion in 2014-15 to PKR 923 billion 2020-21. The improvement mainly comes from increased transfers from the federal government for arrears payments from hydro-electric profits and the NFC Award which includes 1 percent of the undivided divisible pool as compensation for the war on terror. Like in other provinces in Pakistan, federal transfers constitute a large chunk of KP provincial resources amounting to over 90 percent of the total 'general revenue receipts' of the KP government.

973. The provincial tax and non-tax receipts are volatile and generally constitute less than 8 percent of total general revenue receipts of the KPK government. Of all the provincial taxes, the devolved general sales tax on services amounts to over sixty percent of the total receipts under direct and indirect taxes. Improving the collection of provincial taxes could greatly improve the GoKP budget.

Table 57: Development budget, Khyber Pakhtunkhwa (in million PKR)

Year	Total Development Budget	Provincial	District	NMA PSDP*	FPA	Provincial ADP	Foreign Project Assistance
2011-12	85,141	67,508	1,520	-	16,113	81%	19%
2012-13	97,458	72,528	1,672	-	23,258	76%	24%
2013-14	118,000	81,328	1,672	-	35,000	70%	30%
2014-15	139,805	98,378	1,672	-	39,755	72%	28%
2015-16	174,884	111,726	30,274	-	32,884	81%	19%
2016-17	161,000	91,100	33,900	-	36,000	78%	22%
2017-18	208,000	98,000	28,000	-	82,000	61%	39%
2018-19	180,000	79,555	29,345	-	71,100	61%	39%
2019-20	319,000	108,000	46,000	83,000	82,000	74%	26%
2020-21 (E)	317,857	104,000	44,571	83.286	86,000	73%	27%

Note: *Newly Merged Areas (NMA) and include PKR 11.00 ban KP share from federal divisible pool.

974. Although it was not possible to create reasonable budget projections for the Swat District because of its history of being at the forefront of war on terror in the recent past, projections based on the tehsil budget of Mingora Babuzai for 2019-20 and average growth rate of KP budget for the last five years indicate budget deficits only till 2025 after which the budget turned into a surplus budget.

975. Projections for other Districts indicate public budgets are also in deficit for much of the period 2016-2035. In none of the Districts and UCs do projected public receipts from own revenue, property tax, federal transfer and miscellaneous sources exceed the expenditures on salary, non-salary, ADP, and ongoing and other development expenditures.

976. Overall, the annual budget deficit of KP has been covered by foreign grants and drawing down existing cash balances. This is not a sustainable financing approach and a further argument to improve tax collection.[368]

977. Government deficits have been caused by a number of factors.[369] First, own-resource income has not grown sufficiently to keep pace with overall growth and expenditures and has remained at 6%-7% of KP budget revenue over last few years. Despite an increase in revenue from sales tax on services, the finances of KP have become more dependent on federal transfers, which account for more than 90% of KP Revenue Budget. Second, PFM has been poor for several reasons, as described above.

978. KP has suffered tremendous setbacks to its economy and public budget caused by natural disasters and a breakdown in security. To attract investors and tourists, the large share of resources granted to police forces is essential. Nonetheless, it is an additional expenditure that detracts from the allocations available to other necessary and complementary investments such as health, education, infrastructure, etc. Addressing the various barriers to

368 GoKP 2020 Sustainable development strategy. A medium term development framework 2019-23 for Khyber Pakhtunkhwa.

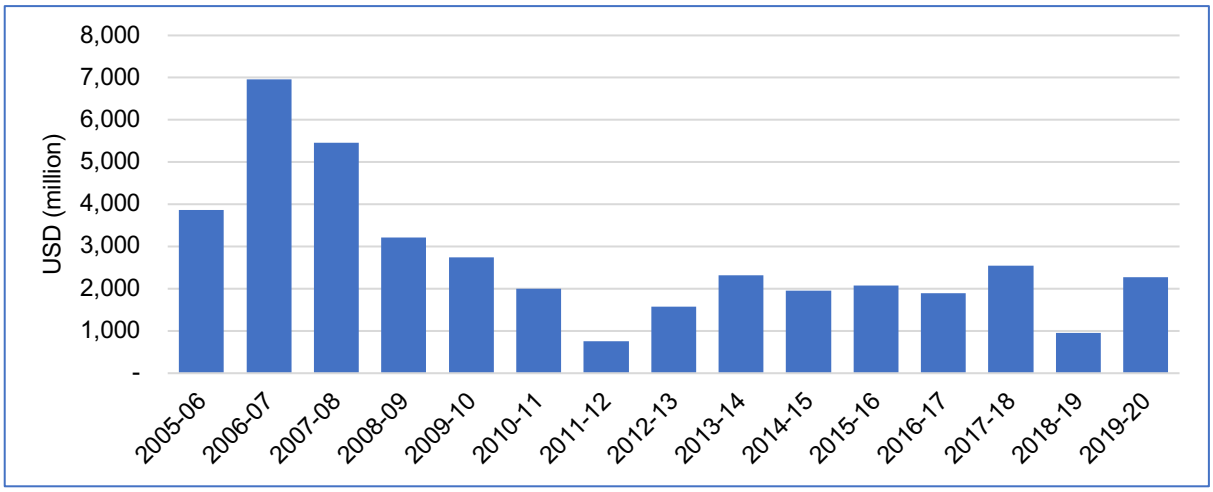
369 GoKP 2017. Public Financial Management Assessment Report.

economic development in KP means that spending has to increase. To achieve this, a stronger revenue-collection effort needs to be and can be made.[370]

M.1.2. Foreign and National Private Investment

979. Net private Foreign Direct Investment (FDI), excluding portfolio investments, in Pakistan has been fluctuating over the period 2015-2019. Despite these fluctuations, net private FDI has approximately doubled in this period. It is unknown how much of this capital was directed to investments in KP.

Figure 73: Net private FDI in Pakistan



Source: State Bank of Pakistan (http://www.sbp.org.pk/ecodata/FIS-FDI-Arch.xls).

980. The sectors that dominated net FDI flows in this period include financial services (16% of total FDI on average from 2015-2019), power (27% focused on hydroelectric and coal), and oil & gas explorations (16%). Telecommunication investments have been volatile with large in- and outflows yielding an average of 6% of FDI inflows.

981. Other sectors that see low investment are food and beverages (3%-4%), chemical processing (3%), miscellaneous electronics (2%-3%), transport incl. vehicles (3%), and trade (3%). Foreign investment in tourism has been netlabel.

982. No loans to the private sectors were awarded by IDBP, NIB, or SIDB in 2015-2018 (KP Development Statistics 2019). Private access to finance is a barrier to growing the industries in KP.[371]

983. Access to credit is critical for the rural poor and credit availability has in recent years improved to some extent, largely through the intervention of NGOs. Financial institutions too have become more amenable to the idea of microfinance but capacity to optimally utilize credit is still lacking among many communities. At the same time, credit facilities have for the most part focused on more traditional activities such as livestock rearing, commercial establishments (mainly shops and public call offices) and agriculture. No effort has been made to identify innovative projects. With high interest rates, poor returns and a focus on already saturated sectors, microcredit extension has been unable to make a significant impact on poverty alleviation.

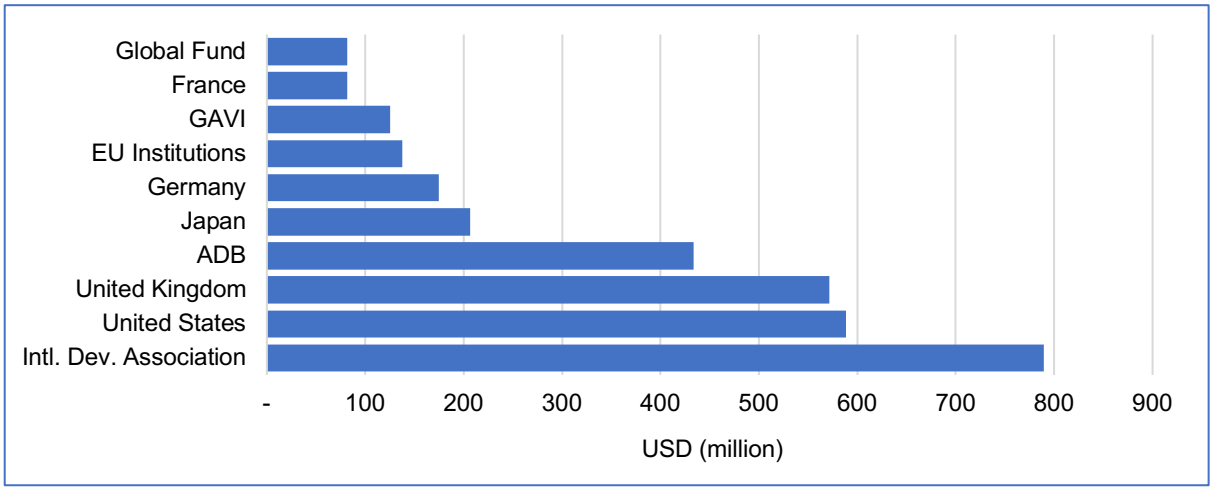
370 2017. Public Financial Management Assessment Report. Item 231.

371 GoKP 2016 Industrial policy Khyber Pakhtunkhwa 2016.

M.1.3. Donor Funding

984. The largest inflow of ODA comes from the World Bank Group, with the United States and United Kingdom being the second and third-largest donors, respectively, by some margin to the other donors. Of the latter, the ADB is the largest donor.

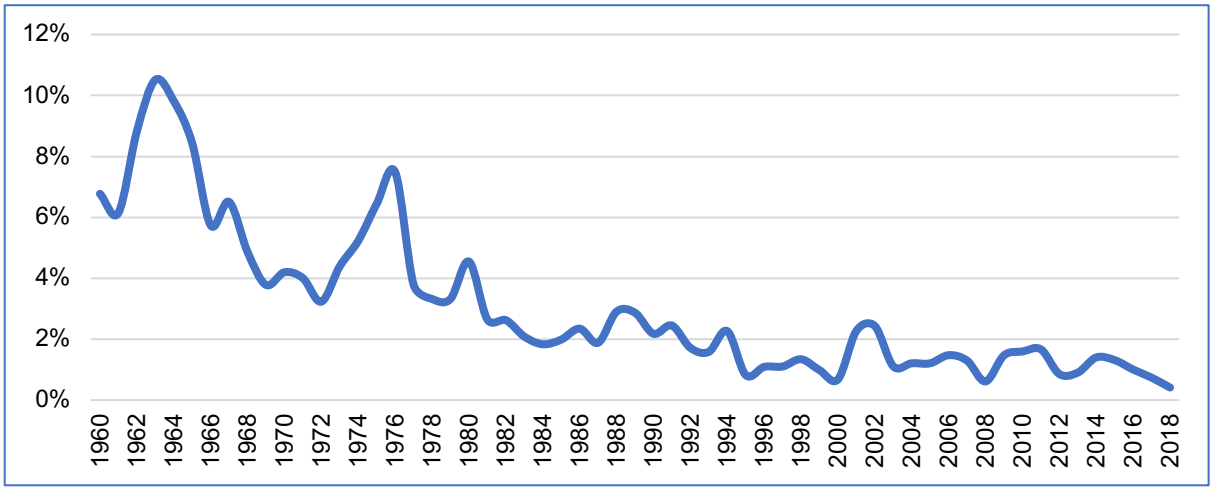
Figure 74: Top ten donors of gross ODA for Pakistan, 2017-2018 average (in million USD)



Source: OECD – Aid at a glance (https://www.oecd.org/countries/pakistan/aid-at-a-glance.htm#recipients).

985. The trend for Official Development Aid (ODA) flows into Pakistan is negative. According to OECD data, net ODA declined from USD 2.9 ban in 2016 to USD 1.4 ban (2018). ODA from the World Bank Group sharply reversed a trend of growing ODA inflow from 2015 onwards. The USA greatly increased its steady aid in 2010 to suppress a surge in violence and terrorism but has since been reducing its ODA to Pakistan. In 2019, the UK Parliament launched an investigation into the irregularities with the country's support to Pakistan.[372] Combined with the economic impact of a possible 'hard' Brexit, this investigation may lead the UK to also reduce its ODA to Pakistan.

Figure 75: Net ODA received by Pakistan (as percent of GNI)

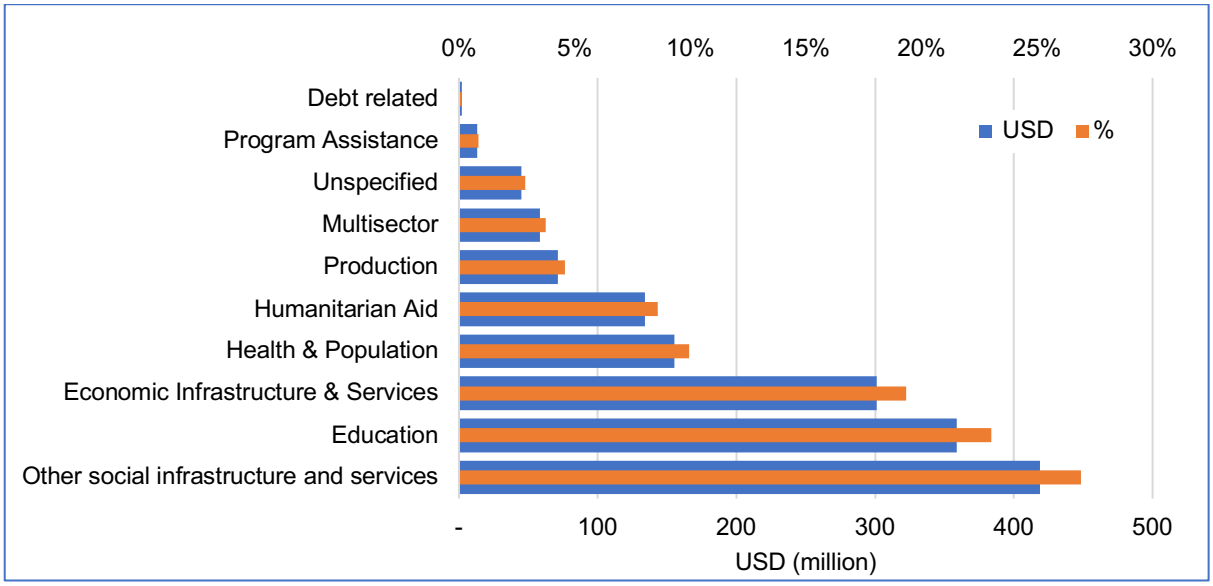


Source: World Bank Group

[372] (https://www.parliament.uk/business/committees/committees-a-z/commons-select/international-development-committee/news-parliament-2017/uk-aid-to-pakistan-launch-17-19/)

986. The main sectors that receive ODA funding are 'Other social infrastructure and services' (35%, orange section below), 'Education' (18%, blue), and 'Economic infrastructure and services' (18%, green). The first category covers "efforts to develop the human resource potential and ameliorate living conditions". With education and health (7%, beige) already filtered out, this largest share of ODA goes to projects in water supply, government and civil society, and security.

Figure 76: ODA for Pakistan 2017 by sectors



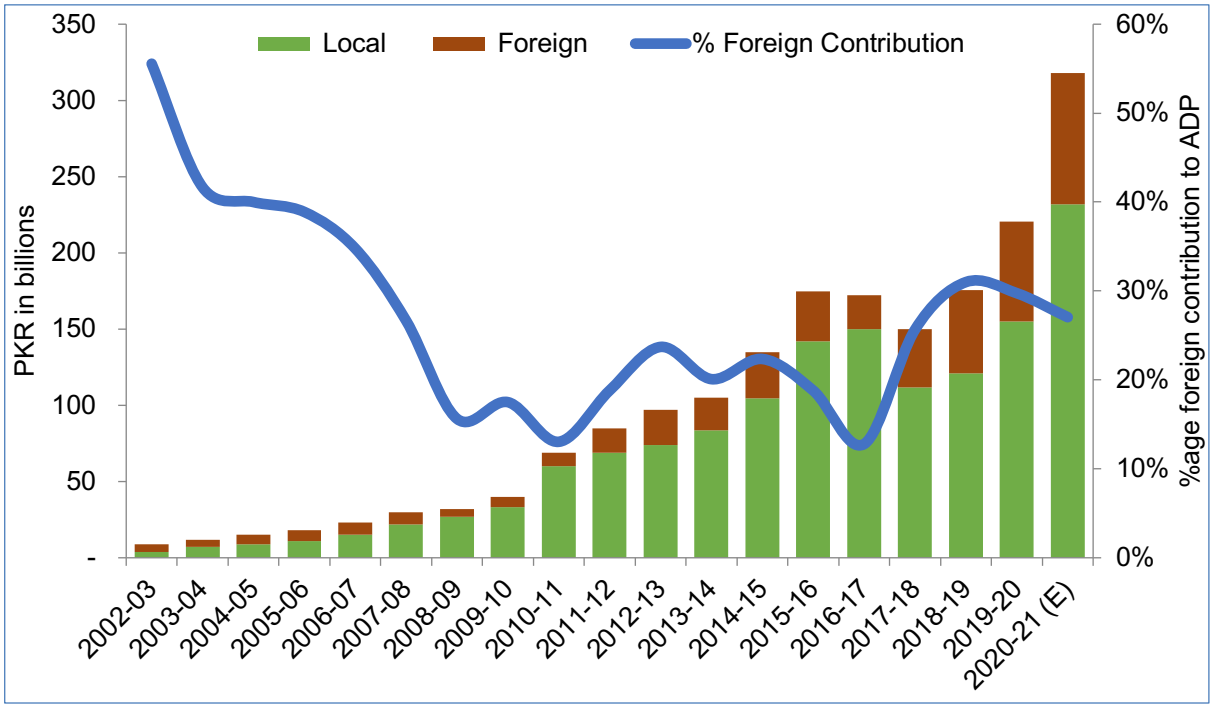
Source: OECD – Aid at a glance (https://www.oecd.org/countries/pakistan/aid-at-a-glance.htm#recipients).

987. The projects for economic infrastructure cover transport and storage, communications, energy, and financial and other services. Another 4% of ODA funds goes to 'Production' projects that aim to support the primary (agriculture, fisheries, forestry, mining) and secondary (industry, construction) sectors, along with improving trade policies.

M.1.3.1. Developing partners' opportunities to support the reforms

988. Khyber Pakhtunkhwa has always been reliant upon foreign assistance for its annual development financing. However, after 7th NFC Award (2010), the local contribution to ADP has improved significantly, duly complemented by foreign contributions. However, still around 30% of the provincial development outlay is supported by foreign assistance (Figure 77). This necessitates an effective coordination with and amongst donors for harmonization of the development assistance.

Figure 77: Foreign donors' contribution to Khyber Pakhtunkhwa's ADPs



Source: Government of Khyber Pakhtunkhwa, 2020. White Paper 2020-21. Peshawar: Finance Department, GoKP. Planning & Development Department, GoKP.

989. In October 2013, the provincial government reached an agreement on the Strategic Development Partnership Framework (SDPF) with a group of 13 donors including Asian Development Bank, AusAid, Canadian International Development Agency (CIDA), Department for International Development (DFID), Embassy of Germany, GIZ, Embassy of Japan, Japan International Cooperation Agency (JICA), European Union, Norway, SDC, USAID, and the World Bank. This paved the way for structured and well-coordinated development assistance for the provincial reform agenda in health, education, urban development, industry, technical education, and energy and power sectors.[373] A review of SPED[374] in 2019 concluded that:

- Though there was an active follow-up and monitoring of the SDPF implementation in the initial years, it lost its momentum gradually.
- There was a mismatch between the Government's political priorities and SDPF provisions/areas; making it relatively less relevant.
- There was lesser level of ownership at the operational level; hence, frequent transfers amongst government counterparts adversely affected institutional understanding of SDPF and its effectiveness.
- There was lack of effective monitoring; hence, course correction has been to a minimum.

[373] "Donor countries in partnership with KP." Daily *Dawn*, 3 Oct 2013. http://www.dawn.com/news/1047126/donor-countries-in-partnership-with-kp.

[374] Government of Khyber Pakhtunkhwa. 2019. *Sustainable Development Strategy: A Medium-Term Development Framework 2019-23 for Khyber Pakhtunkhwa*. Peshawar: P&D Department, GoKP.

- The SDPF Secretariat lacked adequate capacity and coordination with donors changed from SPED-centric to sectoral, eroding the concept of coordinated and harmonized development assistance.

990. Based on these findings, number of recommendations have been made which can help improving the coordination between the provincial government and donors. The crux of these recommendations includes:

- Duplication and parallel strategies on development may be replaced with a single, holistic development framework, to be developed through wider consultative process, to avoid overlap and duplication of development investment.
- To enhance the political buy-in, the political leadership at various levels (province, department, local) may be associated with formulation process for sustained buy-in during implementation phase.
- Grouping of individual departments in “development sectors” may be carried out with equal emphasis on “potential” as well as “capacity” while the focus of strategic framework may be dominated by “sector outcomes” as against activity-driven “outputs;”
- The provincial Finance Department may be fully associated during design phase for validation of quantitative assumptions.
- The international development partners may be requested to contextualize their country support strategies within provincial development framework.
- The P&D Department may establish a fully resourced “Strategic Planning Unit” for steering future strategy.
- The Office of DG Monitoring may be associated from the beginning for mentoring/guiding individual departments on the Strategy monitoring.
- The Sector Coordination Committees may be provided technical support from relevant sections in P&D Department (health, education, energy, water etc.) for meaningful and rigorous follow up & course correction.

M.1.4. Oil Windfall

991. The successful development of recently discovered oil deposits near Kohat can stimulate the economy, shore up the GoKP budget, and finance investments that improve the long-term economic growth potential of the region.

992. Positive fiscal measures include directing oil revenue to investment in foreign assets or import-heavy expenditures.[375] Structural measures include facilitating capital and labor inflows, to prevent these inputs become scarce. On the other hand, the discovery of oil

[375] Ismael K 2010. The Structural Manifestation of the ‘Dutch Disease’: The Case of Oil-Exporting Countries. IMF Working Paper

deposits has often led to negative outcomes, most often if the (local) state has a high share in oil production.[376]

993. To utilize this boon effectively, GoKP needs to heed lessons from the countries that successfully leveraged fossil resources into productive, long-term investments. It is strongly recommended to draw up strong legislation prescribing how oil revenue is to be used and to set up a transparent, politically independent authority to manage the funds.

M.1.5. Financing Conclusions

994. The public budget in KP is generally in deficit, due to a host of persistent problems in PFM. Provincial tax collection is marginal. A large share of the budget is allocated to (non-) salary expenditures that are prioritized over operational expenditures to maintain existing infrastructure and public services. The allocation of the ADP is not sufficiently devolved to target local needs yet, through annual increases, does crowd out devolved spending and investment. Addressing these and the other PFM issues will create room in the public budget to strategically invest in regional economic development with transparency and accountability.

995. Tariff collection for water supply and waste management tends to be insufficient to cover the operating costs of utilities. Investment decisions for new utilities should be made using realistic and conservative financial analyses. Since utilities tend to require significant capital, spreading the capital costs over a larger user base and stringent control of overhead costs can reduce user tariffs and increase the probability of cost recovery.

996. ODA as a funding source has been declining and, despite a possible surge in aid to handle the COVID19 crisis, is at risk of declining further. The majority of ODA inflows are directed to human health infrastructure and capacity building projects. While these are necessary elements of development in general, they do not directly contribute to employment opportunities and income growth. Attracting ODA projects that support or directly stimulate economic activity in the region raise GDP per capita, potentially starting a virtuous cycle of growth.

997. Net FDI into Pakistan has been fluctuating over the years. Sectors that have been consistently successful in attracting FDI are financial services, power (hydro- and coal), and oil & gas. These are all sectors in which the Peshawar region has a potential competitive advantage: it is a trade hub (finance) with significant potential for fossil resource extraction and hydroelectricity. Chemical processing and transport/trade are further sectors that Peshawar could be promoting, even if FDI inflows have been comparatively low.

998. National private investment in KP appears to have been negligible in recent years. Private access to finance should be facilitated and can be shaped to support small farms and enterprises to large manufacturing sites. The banking sector should be stimulated to provide loans and provide opportunities to existing firms and start-ups that can boost innovation and job growth.

[376] Arezki R, Brückner M 2011. Oil rents, corruption, and state stability: Evidence from panel data regressions. European Economic Review 55:955:963.

M.2. Procurement[377]

999. Under Section 36 of the Khyber Pakhtunkhwa Public Procurement Regulatory Authority Act, 2012,[378] the Government of Khyber Pakhtunkhwa has notified Khyber Pakhtunkhwa Public Procurement of Goods, Works, and Services Rules, 2014 to improve governance, management, transparency, accountability and quality of public procurement of goods, works, and services. Accordingly, the Khyber Pakhtunkhwa Public Procurement Regulatory Authority (KP-PPRA) is mandated to implement the law and spearhead the public sector procurement.

1000. Under these Rules, open competitive bidding is the principal method of procurement of goods, services and works. Any procurement of over one hundred thousand Rupees has to be advertised on the Authority's website. The same can also be advertised in the print media by the respective procuring agency. The Rules also provide guidance for non-discriminatory participation and transparent procurement processes.

1001. In addition to KP-PPRA, the National Accountability Bureau (NAB) also serve as the watchdog to prevent any mis-procurement and ensures transparency in procurements and can seek briefing and explanation on any procurement from a procuring agency. The procuring agencies also have formal internal and external audit and control systems. Annual audit is conducted regularly by the internal as well as external auditors of the procurement carried out by the agency during the preceding years.

1002. However, assessments of the procurement systems and institutions have identified some procurement risks, including:

- While in most cases, the relevant procurement staff in the executing and implementing agencies is competent and well versed with local procurement procedures, they have limited knowledge of procurement guidelines practiced by international development partners. It creates a mismatch and results in procurement delays.
- While the Khyber Pakhtunkhwa Public Procurement Rules 2014 provide principles for procurement, these do not provide details of bid evaluation methods and processes; rather leave the matter on the discretion of the procuring agency. This leaves a window for possible discrimination in favor of or against any specific bidding party.
- In some cases, the procuring agencies do not have dedicated procurement staff and the function is assigned to a procurement committee comprised of perceivably relevant staff. There have been instances where during the post-procurement reviews have identified incompetence of such procurement committees, resulting in loss the public exchequer.
- At times, the technical specification is kept vague at the request for procurement or the scope of work is changed after awarding the procurement contract. This not only unduly benefits the successful bidder who may have won the bid on different

[377] This section has benefited from the Procurement Risk Assessment conducted by ADB in 2017 for the Peshawar Sustainable Bus Rapid Transit Corridor Project (48289-002).

[378] Government of Khyber Pakhtunkhwa. *Khyber Pakhtunkhwa Public Procurement Regulatory Authority Act, 2012*. Enacted 20 Sep 2012.

specification or scope of work but also deprives the genuine bidders of even playing field.

- In case of works contracts, standard bidding documents and regulations of the Pakistan Engineering Council are also used, posing a risk of conflicting provisions.

1003. The following measures need to be taken to improve the public procurement in Khyber Pakhtunkhwa:

- The procurement related staff of government departments need to be trained in public procurement rules/regulation and practices. This may become a regular feature of KP-PPRA/provincial regulatory authorities' capacity building program.
- The staff may also be trained in multilateral development banks' (MDBs) procurement policies and guidelines at the start of the MDB financed projects.
- The capacity of KP-PPRA may also be augmented through hiring of individual consultants to assist the Agency in timely, efficient and transparent procurement.
- The capacity building efforts can be supported through project readiness financing arranged through MDBs.

M.3. Public-Private Partnership

M.3.1. PPP Legal and Institutional Framework

1004. The Khyber Pakhtunkhwa Public Private Partnership Act, 2014 intends to provide for the participation of the private sector in the financing, construction, development, operation, or maintenance of infrastructure or development projects or other related services of the Government through Concession Contracts in Public Private Partnership mode and the establishment of institutions to regulate, monitor and supervise implementation of Public Private Partnership contracts. Accordingly, the following institutional framework is in place:

- **Public Private Partnership Committee** with a mandate to promote, facilitate, coordinate and oversee private investment in development of infrastructure and social sector projects using the PPP approach. The Committee is headed by the Minister for Planning and Development and has representation from various departments and private sector members and experts as members of the committee. The committee is the final approving authority for projects to be implemented in PPP mode under the PPP Act.
- **PPP Unit** under the supervision of the Secretary Planning and Development Department, with members from the relevant departments. The PPP Unit serves as the secretariat and technical arm of the PPP Committee, and provides technical, financial and legal expertise to the PPP Committee and any PPP Node established under the PPP Act.
- **Departmental PPP Nodes** to be established in the Contracting Authorities that intends to enter into a PPP arrangement in form of a Concession Contract with a Concessionaire. It shall be headed by the principal accounting officer of the Contracting Authority and shall consist of such other financial, technical, procurement and legal personnel as that authority shall, in consultation with the PPP Unit, consider

necessary for the performance of its functions in relation to a Project under the PPP Act. The PPP node is the initial screening and prioritizing agency to develop projects. The node shall forward such projects to the PPP unit for approval by the PPP Committee. The node implements projects approved by the PPP Committee and advised by the PPP Unit by signing the concession agreement and is the responsible agency for project monitoring over the life of the concession contract.

M.3.2. PPP Process

1005. There is a standard project development process for all types of PPP projects, as elaborated in the Khyber Pakhtunkhwa PPP Act, 2014 and summarized below:

i. The PPP node at the contracting agency conducts a prefeasibility for approval of the concept note for developing project in PPP mode and seeks approval from the PPP Committee. The node then engaged professional transaction advisory to prepare prefeasibility. The cost can be met by the node or a request may be made to the PPP Committee to approve cost reimbursement from the Finance Department or Project Development Fund (PDF).

ii. If the prefeasibility is accepted and project approved by the PPP Committee, then node proceeds with the selection of the transaction advisor for preparation of a full feasibility and project implementation process. The transaction advisor (TA) would be selected according to the Khyber Pakhtunkhwa Public Procurement Rules and recommended to the PPP Committee for approval. The TA will undertake feasibility and submit for further processing by the Node.

iii. The bid processing request and feasibility is submitted to the PPP Committee through the PPP Unit and on approval of Committee the transaction advisor and the relevant PPP Node start the bid process. Upon bid award, the cost of transaction advisor is recovered from the selected concessionaire and paid back to the Finance Department or PDF.

iv. Concession contract is signed between the contracting agency and the special purpose vehicle (SPV) company, incorporated under the Companies Act 2017, that will own the project with equity funding of the private party. SPV Company will be formed under the approved concession terms. The contracting agency will appoint an independent engineer to confirm that design, and engineering, procurement and construction (EPC) contract meet concession terms, and the engineer will also be responsible to monitor the project implementation as per terms of the concession contract. The contracting agency would also be required to provide all licenses, consents and any other approvals from relevant authorities and ensure any commitments to provide infrastructure needs are completed according to agreed timelines. Costs increased in result of government's non-adherence to commitments/timelines are borne by the government and could lead to project termination as well.

M.3.3. PPP for Urban Sector

1006. Despite successful examples of public private partnership for urban development, the approach has not been yet implemented in Khyber Pakhtunkhwa. There are some plans in the offing to bring in PPP investment for solid waste collection and waste to energy projects

but nothing significant has come out. The following measures may be taken to introduce the approach for sustainable urban growth in Khyber Pakhtunkhwa:

- PPP sub-nodes may be set up at the City District Government, tehsil municipal administrations, water and sanitation companies and the development authorities to work closely with the PPP Node already established in the Local Government, Elections and Rural Development Department.
- A Project Development Facility (PDF) should be set up at the provincial level to pay for the upfront costs of transaction advisory for preparing concession bids under the PPP approach. The cost can then be built into the bid cost, recovered from the concessionaire and redeposited into the PDF.
- A Viability Gap Fund (VGF), ringfenced through corporate governance regulations, may be set up at the provincial level to provide for any revenue gaps in the take-off years. This will help making PPP projects in the urban, especially municipal, sector attractive for the potential concessionaires.
- Capacity of the PPP Unit should be augmented in terms of competent human resource as well as knowledge exchange on innovative PPP approaches.

M.3.4. Government Procedures in Urban Construction

1007. Construction regulation in general, and of low-income housing in particular, has always been a grey area. The municipal authorities, city district government in Peshawar and tehsil municipal administrations in Swat are responsible for approving the building plans according to the building codes and bylaws. However, in most cases, and especially for private houses, the plan approval proves to be merely a procedure. However, even more disastrous is lack of monitoring or follow-up on compliance of the approved building drawings. In many cases, completion certificate is not applied, and if applied no site inspection is carried out before issuing the completion certificate.

1008. In case of public and commercial building, the building codes, especially on design and materials, are followed more stringently but violations are rampant resulting in shorter lifespan for such building. There is need to set up an independent oversight mechanism to randomly review the approvals and certifications of public and private constructions, augmented by a strict accountability mechanism.

M.3.5. Public Participation/ Transparency

1009. Public participation in planning and decision making for the urban development is relatively newer phenomenon, following examples set by donor funded projects and civil society engagement. The recent enactment of Right to Information Act, 2013 and increased access to internet have facilitated the information flow towards relevant stakeholder, and the feedback towards government. Citizen's Budget is one such example which presents the cumbersome budgetary statistics in simple graphical form informing the general public of what is planned, how much would cost and what benefits would it accrue. The donor funded projects have introduced procedures for information disclosure and grievance redressal which are providing avenues of public participation and fostering transparency in public sector planning and execution.

1010. In the urban sector, WSSCs have adopted this approach and positive results have been reported. The public feedback has helped the WSSCs in improving services, filling in the gaps and improving accountability. This will ultimately restore public's confidence in the system, resulting in enhanced revenue. However, there is still room for more focused citizens' engagement and information-driven communication to maximize the benefits of autonomous utility operations.

Appendix 1: Demography of Swat Region

1.a. Area, Population, Households and Intercensal (1998-2017) Growth Rates

Tehsil	Union Council	UC Status	1998		2017		1998-2017 Growth Rate		2020	
			Pop.	HH	Pop.	HH	Pop.	HH	Pop.	HH
Babuzai	Aka Maruf Bamikhel UC	Rural	16,689	2,018	26,505	3,179	2.46%	2.42%	28,513	3,415
Babuzai	Amankot UC	Urban	17,483	2,038	32,153	4,260	3.26%	3.96%	35,400	4,786
Babuzai	Banringaro Darai UC	Urban	19,598	2,060	28,241	3,467	1.94%	2.78%	29,918	3,764
Babuzai	Dangram Sangota UC	Rural	15,032	1,652	31,095	3,777	3.90%	4.45%	34,877	4,304
Babuzai	Gulkada UC	Urban	17,991	2,106	41,225	5,093	4.46%	4.76%	46,992	5,855
Babuzai	Islampur UC	Rural	23,638	2,626	40,873	4,844	2.92%	3.28%	44,564	5,336
Babuzai	Kokarai UC	Rural	23,807	2,826	40,696	5,040	2.86%	3.09%	44,291	5,522
Babuzai	Malkanan Landakass UC	Urban	19,691	2,107	21,539	2,595	0.47%	1.10%	21,846	2,682
Babuzai	Malok Abad UC	Urban	17,178	1,832	24,130	2,717	1.80%	2.10%	25,460	2,891
Babuzai	Manglawar UC	Rural	19,957	2,318	37,147	4,684	3.32%	3.77%	40,976	5,234
Babuzai	Odigram UC	Rural	19,557	2,151	36,279	4,376	3.31%	3.81%	39,997	4,895
Babuzai	Qambar UC	Rural	17,259	2,043	33,967	4,056	3.63%	3.68%	37,799	4,520
Babuzai	Rahim Abad UC	Urban	19,339	2,143	43,770	5,115	4.39%	4.69%	49,795	5,868
Babuzai	Rang Muhallah UC	Urban	22,369	2,394	36,545	4,880	2.62%	3.82%	39,490	5,461
Babuzai	Saidu Sharif UC	Urban	20,295	2,178	39,988	5,302	3.63%	4.79%	44,508	6,102
Babuzai	Shahdara Nawan Killi UC	Urban	19,924	2,209	63,500	7,872	6.29%	6.92%	76,253	9,621
Babuzai	Tindodag UC	Rural	12,188	1,278	21,387	2,758	3.00%	4.13%	23,373	3,114
Barikot	Barikot UC	Urban	24,553	2,717	48,290	5,984	3.62%	4.24%	53,733	6,779
Barikot	Ghallgay UC	Urban	25,825	2,948	45,955	5,965	3.08%	3.78%	50,333	6,667
Barikot	Kota UC	Rural	23,673	2,675	43,591	5,523	3.27%	3.89%	48,002	6,193
Barikot	Shamozi UC	Rural	25,924	2,567	46,164	5,310	3.08%	3.90%	50,568	5,956

Tehsil	Union Council	UC Status	1998		2017		1998-2017 Growth Rate		2020	
			Pop.	HH	Pop.	HH	Pop.	HH	Pop.	HH
Behrain	Balakot UC	Rural	15,660	1,957	30,749	3,369	3.62%	2.90%	34,206	3,671
Behrain	Bashigram UC	Rural	11,665	1,568	20,091	2,860	2.90%	3.21%	21,892	3,145
Behrain	Behrain UC	Urban	18,715	2,122	27,444	3,184	2.04%	2.16%	29,154	3,395
Behrain	Kalam UC	Rural	20,903	2,430	46,069	5,420	4.25%	4.31%	52,191	6,152
Behrain	Madyan UC	Urban	19,741	2,603	34,343	4,670	2.96%	3.12%	37,481	5,122
Behrain	Mankial UC	Rural	12,448	1,561	22,577	2,734	3.18%	2.99%	24,802	2,987
Behrain	Tirat UC	Rural	15,989	1,882	28,836	3,348	3.15%	3.08%	31,650	3,667
Behrain	Utrur UC	Rural	10,126	1,144	38,365	4,390	7.26%	7.33%	47,345	5,429
Charbagh	Charbagh UC	Rural	23,970	2,717	39,605	5,245	2.68%	3.52%	42,873	5,819
Charbagh	Guli Bagh UC	Rural	19,338	2,118	32,483	3,749	2.77%	3.05%	35,255	4,103
Charbagh	Kashora UC	Rural	17,672	2,273	32,683	3,875	3.29%	2.85%	36,015	4,216
Charbagh	Tali Gram UC	Rural	12,702	1,576	21,344	2,446	2.77%	2.34%	23,167	2,622
Kabal	Bar Abakhel Kabal UC	Urban	20,983	2,092	36,116	4,347	2.90%	3.92%	39,349	4,879
Kabal	Barabandi UC	Rural	24,040	2,545	38,878	4,652	2.56%	3.23%	41,944	5,117
Kabal	Devll UC	Rural	18,575	1,933	30,093	3,567	2.57%	3.28%	32,475	3,929
Kabal	Hazara UC	Urban	13,959	1,852	34,344	3,984	4.85%	4.11%	39,590	4,496
Kabal	Kala Kalay UC	Rural	25,232	2,392	41,269	4,510	2.62%	3.39%	44,603	4,985
Kabal	Kanaju UC	Urban	32,951	2,819	47,643	5,557	1.96%	3.64%	50,499	6,186
Kabal	Koz Abakhel Kabal UC	Rural	20,476	2,215	37,544	3,997	3.24%	3.16%	41,316	4,387
Kabal	Kozabandi UC	Rural	18,800	2,055	30,459	4,037	2.57%	3.62%	32,870	4,491
Kabal	Qalagay UC	Rural	14,161	1,499	25,975	2,698	3.24%	3.14%	28,586	2,960
Kabal	Shahderi UC	Rural	14,848	1,595	26,222	2,921	3.04%	3.24%	28,686	3,214
Kabal	Tal UC	Rural	26,388	2,959	48,023	5,174	3.20%	2.98%	52,785	5,651
Kabal	Totanobandi UC	Rural	13,729	1,424	23,808	2,499	2.94%	3.00%	25,970	2,731

Tehsil	Union Council	UC Status	1998		2017		1998-2017 Growth Rate		2020	
			Pop.	HH	Pop.	HH	Pop.	HH	Pop.	HH
Khawaza Khela	Fatehpur UC	Rural	23,095	2,929	41,969	5,312	3.19%	3.18%	46,120	5,836
Khawaza Khela	Jano Chamtail UC	Rural	26,144	3,159	52,253	5,912	3.71%	3.35%	58,290	6,527
Khawaza Khela	Khawaza Khela UC	Urban	24,517	3,094	48,027	5,425	3.60%	3.00%	53,406	5,928
Khawaza Khela	Kotanal UC	Rural	16,606	2,034	32,124	3,547	3.53%	2.97%	35,651	3,873
Khawaza Khela	Miandam UC	Rural	16,370	2,006	27,418	3,360	2.75%	2.75%	29,744	3,645
Khawaza Khela	Shalpin UC	Rural	15,578	2,042	31,626	4,099	3.80%	3.74%	35,367	4,576
Khawaza Khela	Shin UC	Rural	18,883	2,340	32,154	4,310	2.84%	3.27%	34,973	4,746
Matta	Arkot UC	Rural	21,740	2,360	38,058	4,090	2.99%	2.94%	41,576	4,461
Matta	Ashari UC	Rural	14,313	1,650	26,502	3,127	3.30%	3.42%	29,209	3,459
Matta	Bar Thana UC	Rural	19,771	2,033	35,876	3,957	3.19%	3.57%	39,415	4,396
Matta	Baydara UC	Rural	13,632	1,585	24,142	2,987	3.05%	3.39%	26,422	3,301
Matta	Beha UC	Rural	16,250	1,935	30,012	3,394	3.28%	3.00%	33,065	3,709
Matta	Chuprial UC	Rural	23,485	2,673	40,455	4,732	2.90%	3.05%	44,082	5,179
Matta	Darmi UC	Rural	14,790	1,955	25,903	3,013	2.99%	2.30%	28,300	3,226
Matta	Gowalairaj UC	Rural	20,487	2,411	39,794	4,283	3.56%	3.07%	44,192	4,690
Matta	Matta Kharari UC	Rural	7,687	778	15,193	1,814	3.65%	4.56%	16,919	2,073
Matta	Matta UC	Urban	19,140	2,089	42,647	5,030	4.31%	4.73%	48,398	5,779
Matta	Oorishkhela UC	Rural	17,188	1,939	31,732	3,465	3.28%	3.10%	34,958	3,798
Matta	Pir Kalay UC	Rural	20,606	2,177	37,445	3,850	3.19%	3.05%	41,148	4,213
Matta	Sakhra UC	Rural	22,116	2,598	42,454	4,618	3.49%	3.07%	47,058	5,057
Matta	Showar UC	Rural	20,163	2,307	35,783	4,265	3.07%	3.29%	39,175	4,700
Total Swat Region			**1,257,602**	**142,311**	**2,309,570**	**274,620**	**3.25%**	**3.52%**	**2,548,862**	**305,486**

Source: Computed from 1998 and 2017 census data of the Pakistan Bureau of Statistics

Notes: Mingora Urban UCs; Other Urban UCs; Rural UCs

1.b. Population Extrapolation based on Average Intercensal (1998-2017) Growth Rates

Tehsil	Union Council	2025		2030		2035		2040		2045	
		Pop.	HH	Pop.	HH	Pop.	HH	Pop.	HH	Pop.	HH
Babuzai	Aka Maruf Bamikhel UC	32,204	3,849	36,373	4,338	41,082	4,890	46,400	5,511	52,407	6,211
Babuzai	Amankot UC	41,556	5,811	48,783	7,055	57,266	8,566	67,225	10,400	78,916	12,627
Babuzai	Banringaro Darai UC	32,937	4,317	36,261	4,950	39,921	5,677	43,949	6,511	48,385	7,467
Babuzai	Dangram Sangota UC	42,229	5,350	51,130	6,651	61,908	8,268	74,959	10,278	90,760	12,776
Babuzai	Gulkada UC	58,450	7,387	72,702	9,319	90,430	11,757	112,481	14,833	139,908	18,713
Babuzai	Islampur UC	51,472	6,269	59,451	7,364	68,667	8,652	79,311	10,165	91,604	11,942
Babuzai	Kokarai UC	51,003	6,430	58,731	7,488	67,631	8,719	77,879	10,153	89,680	11,822
Babuzai	Malkanan Landakass UC	22,368	2,833	22,902	2,993	23,449	3,161	24,010	3,339	24,583	3,527
Babuzai	Malok Abad UC	27,842	3,207	30,446	3,558	33,295	3,947	36,409	4,378	39,815	4,857
Babuzai	Manglawar UC	48,254	6,299	56,825	7,580	66,919	9,121	78,806	10,976	92,804	13,208
Babuzai	Odigram UC	47,059	5,901	55,369	7,114	65,146	8,576	76,649	10,338	90,183	12,463
Babuzai	Qambar UC	45,171	5,414	53,981	6,484	64,509	7,767	77,091	9,303	92,126	11,143
Babuzai	Rahim Abad UC	61,736	7,378	76,541	9,276	94,896	11,662	117,653	14,663	145,866	18,435
Babuzai	Rang Muhallah UC	44,935	6,586	51,132	7,944	58,182	9,582	66,205	11,557	75,334	13,939
Babuzai	Saidu Sharif UC	53,204	7,711	63,600	9,746	76,027	12,316	90,882	15,566	108,640	19,672
Babuzai	Shahdara Nawan Killi UC	103,450	13,442	140,347	18,780	190,404	26,238	258,315	36,657	350,447	51,215
Babuzai	Tindodag UC	27,101	3,813	31,423	4,668	36,435	5,716	42,246	6,998	48,983	8,568
Barikot	Barikot UC	64,201	8,344	76,709	10,271	91,654	12,643	109,510	15,563	130,845	19,157
Barikot	Ghallgay UC	58,576	8,026	68,169	9,661	79,333	11,630	92,325	14,000	107,445	16,853
Barikot	Kota UC	56,368	7,495	66,193	9,070	77,729	10,976	91,277	13,283	107,185	16,076
Barikot	Shamozi UC	58,860	7,211	68,512	8,731	79,747	10,572	92,825	12,800	108,047	15,499
Behrain	Balakot UC	40,852	4,235	48,790	4,886	58,270	5,636	69,593	6,502	83,115	7,502
Behrain	Bashigram UC	25,259	3,684	29,144	4,315	33,627	5,054	38,800	5,920	44,768	6,935

Tehsil	Union Council	2025		2030		2035		2040		2045	
		Pop.	HH	Pop.	HH	Pop.	HH	Pop.	HH	Pop.	HH
Behrain	Behrain UC	32,244	3,777	35,662	4,203	39,442	4,677	43,622	5,204	48,246	5,790
Behrain	Kalam UC	64,256	7,598	79,110	9,384	97,397	11,589	119,912	14,313	147,631	17,677
Behrain	Madyan UC	43,360	5,973	50,161	6,966	58,030	8,125	67,132	9,475	77,663	11,051
Behrain	Mankial UC	29,009	3,462	33,930	4,012	39,685	4,649	46,416	5,388	54,289	6,244
Behrain	Tirat UC	36,963	4,267	43,169	4,965	50,416	5,778	58,880	6,724	68,765	7,824
Behrain	Utrur UC	67,222	7,733	95,444	11,017	135,514	15,695	192,407	22,359	273,185	31,853
Charbagh	Charbagh UC	48,930	6,919	55,842	8,226	63,731	9,781	72,735	11,629	83,011	13,826
Charbagh	Guli Bagh UC	40,411	4,768	46,320	5,541	53,094	6,440	60,858	7,484	69,758	8,697
Charbagh	Kashora UC	42,341	4,851	49,777	5,582	58,520	6,423	68,798	7,391	80,881	8,505
Charbagh	Tali Gram UC	26,557	2,943	30,444	3,304	34,899	3,709	40,007	4,164	45,862	4,675
Kabal	Bar Abakhel Kabal UC	45,394	5,915	52,367	7,170	60,411	8,692	69,692	10,536	80,397	12,772
Kabal	Barabandi UC	47,600	5,997	54,019	7,029	61,304	8,238	69,570	9,655	78,952	11,316
Kabal	Devll UC	36,872	4,617	41,863	5,424	47,531	6,373	53,965	7,488	61,271	8,798
Kabal	Hazara UC	50,174	5,500	63,588	6,729	80,588	8,232	102,132	10,070	129,436	12,319
Kabal	UC	50,768	5,890	57,786	6,960	65,773	8,224	74,865	9,718	85,214	11,483
Kabal	Kanaju UC	55,645	7,395	61,314	8,841	67,562	10,570	74,446	12,637	82,032	15,108
Kabal	Koz Abakhel Kabal UC	48,462	5,125	56,845	5,986	66,677	6,992	78,211	8,167	91,739	9,540
Kabal	Kozabandi UC	37,321	5,365	42,374	6,408	48,111	7,654	54,625	9,142	62,021	10,920
Kabal	Qalagay UC	33,534	3,456	39,339	4,033	46,148	4,708	54,136	5,496	63,506	6,415
Kabal	Shahderi UC	33,317	3,769	38,696	4,419	44,943	5,182	52,199	6,076	60,627	7,125
Kabal	Tal UC	61,793	6,546	72,339	7,584	84,685	8,785	99,137	10,177	116,057	11,789
Kabal	Totanobandi UC	30,019	3,167	34,698	3,672	40,107	4,258	46,360	4,937	53,587	5,724
Khawaza Khela	Fatehpur UC	53,970	6,825	63,157	7,983	73,907	9,337	86,487	10,920	101,209	12,772
Khawaza Khela	Jano Chamtail UC	69,942	7,697	83,923	9,077	100,698	10,705	120,827	12,625	144,979	14,888
Khawaza Khela	Khawaza Khela UC	63,744	6,872	76,083	7,966	90,810	9,235	108,388	10,706	129,368	12,411

Tehsil	Union Council	2025		2030		2035		2040		2045	
		Pop.	HH	Pop.	HH	Pop.	HH	Pop.	HH	Pop.	HH
Khawaza Khela	Kotanal UC	42,412	4,483	50,455	5,189	60,022	6,007	71,404	6,954	84,945	8,050
Khawaza Khela	Miandam UC	34,068	4,175	39,020	4,782	44,692	5,477	51,189	6,273	58,630	7,185
Khawaza Khela	Shalpin UC	42,612	5,497	51,341	6,603	61,857	7,932	74,528	9,528	89,795	11,446
Khawaza Khela	Shin UC	40,232	5,574	46,281	6,546	53,239	7,687	61,244	9,028	70,453	10,602
Matta	Arkot UC	48,177	5,156	55,826	5,958	64,689	6,886	74,960	7,958	86,861	9,197
Matta	Ashari UC	34,350	4,093	40,396	4,843	47,506	5,730	55,867	6,780	65,699	8,022
Matta	Bar Thana UC	46,106	5,238	53,934	6,241	63,090	7,437	73,800	8,861	86,329	10,558
Matta	Baydara UC	30,710	3,900	35,695	4,608	41,488	5,444	48,222	6,432	56,048	7,600
Matta	Beha UC	38,858	4,300	45,666	4,985	53,668	5,780	63,071	6,701	74,122	7,768
Matta	Chuprial UC	50,865	6,018	58,691	6,995	67,721	8,129	78,141	9,447	90,163	10,980
Matta	Darmi UC	32,796	3,615	38,008	4,051	44,048	4,539	51,047	5,086	59,159	5,699
Matta	Gowalairaj UC	52,629	5,455	62,676	6,346	74,642	7,382	88,891	8,587	105,862	9,989
Matta	Matta Kharari UC	20,241	2,591	24,215	3,237	28,971	4,045	34,659	5,055	41,466	6,316
Matta	Matta UC	59,757	7,282	73,783	9,177	91,101	11,564	112,483	14,573	138,884	18,364
Matta	Oorishkhela UC	41,078	4,424	48,271	5,155	56,722	6,006	66,654	6,997	78,325	8,152
Matta	Pir Kalay UC	48,152	4,895	56,348	5,687	65,939	6,607	77,162	7,677	90,296	8,920
Matta	Sakhra UC	55,868	5,884	66,328	6,845	78,745	7,964	93,488	9,265	110,990	10,780
Matta	Showar UC	45,559	5,524	52,982	6,494	61,615	7,634	71,655	8,974	83,330	10,549
Total Swat Region		**3,009,409**	**365,521**	**3,561,681**	**438,465**	**4,226,266**	**527,425**	**5,029,069**	**636,351**	**6,002,885**	**770,305**

Source: Computed from 1998 and 2017 census data of the Pakistan Bureau of Statistics

Notes: Mingora Urban UCs; Other Urban UCs; Rural UCs

1.c. Population growth projections: intercensal, medium and low growth scenarios for Swat district

		Population		Average growth rate	Population					
		1998	2017		2020	2025	2030	2035	2040	2045
URBAN CENTERS										
	Mingora city, Babuzai Tehsil									
	Low variant	173,868	331,091	2.4533%	366,409	429,201	491,329	547,468	600,303	652,639
	Medium variant	173,868	331,091	2.9922%	366,493	432,529	505,647	584,398	667,530	755,916
	Intercensal growth rate	173,868	331,091	3.4481%	369,662	446,479	542,715	663,871	817,129	1,011,894
	Barikot city, Barikot Tehsil									
	Low variant	50,378	94,245	2.3846%	104,007	121,301	138,341	153,685	168,086	182,315
	Medium variant	50,378	94,245	2.9084%	104,030	122,215	142,261	163,761	186,370	210,321
	Intercensal growth rate	50,378	94,245	3.3515%	104,066	122,777	144,878	170,986	201,834	238,289
	Behrain City , Behrain Tehsil									
	Low variant	38,456	61,787	1.7980%	66,574	74,793	82,611	89,446	95,707	101,764
	Medium variant	38,456	61,787	2.1931%	66,585	75,221	84,384	93,866	103,512	113,423
	Intercensal growth rate	38,456	61,787	2.5271%	66,635	75,604	85,823	97,471	110,755	125,909
	Kabal City, Kabal Tehsil									
	Low variant	67,893	118,103	2.1037%	128,854	147,616	165,795	181,934	196,906	211,552
	Medium variant	67,893	118,103	2.5659%	128,879	148,601	169,948	192,455	215,750	240,071
	Intercensal growth rate	67,893	118,103	2.9567%	129,438	151,213	177,269	208,561	246,270	291,865
	Khawaza Khela City, Khawaza Khela Tehsil									
	Low variant	24,517	48,027	2.5630%	53,387	62,973	72,520	81,194	89,394	97,550
	Medium variant	24,517	48,027	3.1260%	53,400	63,483	74,726	86,916	99,864	113,710
	Intercensal growth rate	24,517	48,027	3.6023%	53,406	63,744	76,083	90,810	108,388	129,368
	Matta city, Matta Tehsil									

		Population		Average growth rate	Population					
		1998	2017		2020	2025	2030	2035	2040	2045
	Low variant	19,140	42,647	3.0643%	48,377	58,900	69,697	79,756	89,464	99,294
	Medium variant	19,140	42,647	3.7373%	48,391	59,466	72,223	86,479	102,053	119,143
	Intercensal growth rate	19,140	42,647	4.3069%	48,398	59,757	73,783	91,101	112,483	138,884
SWAT URBAN AREAS, TOTAL										
	Low variant	374,252	695,900	2.3816%	767,609	894,784	1,020,293	1,133,483	1,239,860	1,345,113
	Medium variant	374,252	695,900	2.9074%	767,778	901,515	1,049,189	1,207,875	1,375,080	1,552,584
	Intercensal growth rate	374,252	695,900	3.3185%	771,605	919,575	1,100,551	1,322,800	1,596,859	1,936,210
RURAL AREAS										
	Babuzai Tehsil, rural									
	Low variant	148,127	267,949	2.2546%	294,144	340,228	385,286	425,595	463,221	500,228
	Medium variant	148,127	267,949	2.7499%	294,206	342,658	395,619	451,974	510,803	572,705
	Intercensal growth rate	148,127	267,949	3.1688%	294,390	344,494	403,284	472,296	553,339	648,547
	Barikot Tehsil, rural									
	Low variant	49,597	89,755	2.2562%	98,536	113,986	129,093	142,609	155,227	167,637
	Medium variant	49,597	89,755	2.7519%	98,557	114,801	132,558	151,455	171,183	191,944
	Intercensal growth rate	49,597	89,755	3.1711%	98,570	115,228	134,705	157,477	184,101	215,232
	Behrain Tehsil, rural									
	Low variant	86,791	186,687	2.9268%	210,601	254,195	298,561	339,613	379,011	418,705
	Medium variant	86,791	186,687	3.5696%	210,658	256,533	308,906	366,955	429,881	498,448
	Intercensal growth rate	86,791	186,687	4.1136%	212,087	263,562	329,587	414,910	526,007	671,752
	Charbagh Tehsil, rural									
	Low variant	73,682	126,115	2.0413%	137,245	156,604	175,292	191,831	207,134	222,070
	Medium variant	73,682	126,115	2.4898%	137,271	157,619	179,555	202,594	226,358	251,085
	Intercensal growth rate	73,682	126,115	2.8690%	137,310	158,238	182,384	210,245	242,398	279,512
	Kabal Tehsil, rural									

		Population		Average growth rate	Population					
		1998	2017		2020	2025	2030	2035	2040	2045
	Low variant	176,249	302,271	2.0489%	329,050	375,649	420,652	460,496	497,374	533,376
	Medium variant	176,249	302,271	2.4991%	329,113	378,093	430,919	486,430	543,710	603,338
	Intercensal growth rate	176,249	302,271	2.8798%	329,234	379,685	437,958	505,279	583,069	672,973
	Khawaza Khela Tehsil, rural									
	Low variant	116,676	217,544	2.3716%	239,952	279,619	318,675	353,821	386,788	419,348
	Medium variant	116,676	217,544	2.8926%	240,005	281,716	327,658	376,893	428,629	483,401
	Intercensal growth rate	116,676	217,544	3.3333%	240,146	283,236	334,176	394,417	465,680	550,010
	Matta Tehsil, rural									
	Low variant	232,228	423,349	2.2845%	465,303	539,230	611,640	676,515	737,149	796,847
	Medium variant	232,228	423,349	2.7864%	465,402	543,130	628,257	719,005	813,896	913,901
	Intercensal growth rate	232,228	423,349	3.2109%	465,519	545,390	639,036	748,843	877,617	1,028,649
SWAT RURAL AREAS, TOTAL										
	Low variant	883,350	1,613,670	2.3095%	1,774,831	2,059,511	2,339,199	2,590,480	2,825,904	3,058,211
	Medium variant	883,350	1,613,670	2.8193%	1,775,212	2,074,550	2,403,470	2,755,305	3,124,458	3,514,822
	Intercensal growth rate	883,350	1,613,670	3.2221%	1,777,256	2,089,834	2,461,129	2,903,466	3,432,211	4,066,675
SWAT DISTRICT TOTAL										
	Low variant	1,257,602	2,309,570	2.3314%	2,542,439	2,954,295	3,359,492	3,723,963	4,065,765	4,403,324
	Medium variant	1,257,602	2,309,570	2.8461%	2,542,990	2,976,065	3,452,659	3,963,180	4,499,538	5,067,407
	Intercensal growth rate	1,257,602	2,309,570	3.2510%	2,548,862	3,009,409	3,561,681	4,226,266	5,029,069	6,002,885

Sources: Computed from 1998 and 2017 census data of the Pakistan Bureau of Statistics. United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, Online Edition. Rev. 1.

Notes: Average growth rate for the medium and low variants means the average from 2017 to 2045, but calculated with different quinquennial rates computed according to parameters in the national model. Calculations for the medium and low variants used parameters proportional to the national model calculated by the United Nations Population Division, starting with the intercensal growth rates calculated by the Pakistan Bureau of Statistics for that area, Population projections are made on the basis of Union Council level population results from each census, and therefore, are more precise than applying an average growth rate to the whole.

Appendix 2: Urban Sector Stakeholders in Khyber Pakhtunkhwa

Stakeholder	Water Supply	Sewage & Drainage	SWM	Transport	Urban Spaces	Tourism	Inst. Dev & CB
Government of Khyber Pakhtunkhwa (GoKP)	◉	◉	◉	◉	◉	◉	◉
Planning & Development Department (P&DD)							◉
Local Government, Elections & Rural Development Department	◉	◉	◉				◉
Culture, Sports, Tourism, Archaeology & Youth Affairs Department						◉	◉
Water Supply and Sanitation Companies (WSSCs)	◉	◉	◉				
City Local Government (CLG), Peshawar	◉	◉	◉	◉	◉	◉	
Tehsil Local Governments (TLGs)	◉	◉	◉	◉	◉	◉	
Neighborhood Councils (NCs)	◉	◉	◉				
Cantonment Boards	◉	◉	◉		◉		
Development Authorities					◉		
Asian Development Bank (ADB)	◉	◉	◉	◉	◉	◉	◉
Department for International Development (DFID)							◉
European Union (EU)	◉	◉	◉				◉
International Development Association (IDA), The WB Group	◉	◉	◉	◉	◉	◉	◉
Japan International Cooperation Agency (JICA)	◉						
Multi-Donor Trust Fund (MDTF)	◉	◉	◉		◉		◉
Saudi Fund for Development (SFD)	◉						
Swiss Agency for Development and Cooperation (SDC)	◉	◉	◉				◉
US Agency for International Development (USAID)	◉	◉	◉				◉

Appendix 3: Devolution of Some Key Functions in Political and Fiscal Decentralization, Khyber Pakhtunkhwa

Function	Central	Provincial	Khyber Pakhtunkhwa Province		
			District level	Tehsil/City level	Village/ Neighborhood Council level
Political and administrative leadership: appointed or elected	**President** indirectly elected by Parliament[379] through Electoral College. **Prime Minister**, Head of winning party	**Governor** (nominal head, designated post) **Chief Minister**, elected by provincial assembly **Chief Secretary** (head of government) through civil service career progression.	No elected government positions at district level. **District Administration** represents the provincial government in the district. Headed by **Deputy Commissioner.** If the Chief Minister so orders, the Deputy Commission can carry out functions that otherwise fall within the ambit of the Chairperson, Tehsil Council.	Elected: Tehsil Local Government /City Local Government. Head of the local government is **Chairperson, Tehsil Council** and **Mayor, City Council**. **Chairperson** is directly elected through party-based elections with the entire tehsil/city as a single jurisdiction. **Tehsil Council**: composed of all Chairpersons of village councils and neighborhood councils in the tehsil. **City Council**: composed of all Chairpersons of neighborhood councils in the tehsil. In both, reserved seats for women, peasants, workers and religious minorities who are elected indirectly from among the members of village/neighborhood councils who secured the highest vote in their respective councils. Human resources working under the Chairperson of local government are predominantly under the supervision of and with reporting lines to officials under the Deputy Commissioner, who represents the province.	**Village Council** (rural) **Neighborhood Council** (urban). Members are elected directly on non-party basis from a single constituency. The one with the most votes becomes Chairperson, VC or Chairperson, NC. 7 members: Chairperson, one seat (reserved) each for women, youth and peasants/laborer's.

[379] National Assembly, Senate, and Provincial Assembly.

Function	Central	Provincial	Khyber Pakhtunkhwa Province		
			District level	Tehsil/City level	Village/ Neighborhood Council level
Number of jurisdictions	1	4 provinces	35 districts in Khyber Pakhtunkhwa[380]	119 tehsils in Khyber Pakhtunkhwa 7 in Swat district	170 NCs and 44 VCs in Swat district
Political process	Federal parliamentary republic	Provincial assembly members mostly directly elected, some reserved seats		Tehsil/City council elections	Village/neighborhood council elections
Budget development and approval (processes still being clarified following 2019 Amendment)	Budget: Ministry of Finance, with input from line ministries Approval: National Economic Council; Central Development Working Party	Budget Finance Department, Planning and Development Department (according to Annual Development Program). Approval by Provincial Development Working Party. Local Government Commission at province level oversees local government budget process.	Budget developed by District Officer Finance & Planning, with inputs from others. Approval by DDAC	Budget for municipal development programs by TLG as per authority & budget. Approval by Tehsil/City Council. Approval by respective council through simple majority vote. Chairperson has a casting vote in case of a tie. If budget not approved within 10 days of its presentation, Chairperson sends it to the Local Government Commission at province level.	Budget preparation by local village/ neighborhood councils. Approval by respective council through simple majority vote. Chairperson has a casting vote in case of a tie. If budget not approved within 10 days of its presentation, Chairperson sends it to the Local Government Commission at province level.

[380] Census 2017 resulst modified to include the merger between Khyber Pakhtunkhwa and Federally Administered Tribal Areas (FATA).

Function	Central	Provincial	Khyber Pakhtunkhwa Province		
			District level	Tehsil/City level	Village/ Neighborhood Council level
Development Planning	Planning Commission of Pakistan, Ministry of Planning, Development and Reform.	Planning and Development Department (except for national campaigns, e.g., Polio, human trafficking, & migrant smuggling). Each line department has a planning officer (representative of P&DD) for development of the Annual Development Program.	District Office Finance & Planning. Translates province plans into district development schemes. See DDAC functions in text.	Tehsil Development Committee. Planning of Tehsil level project plans.	Village/ neighborhood councils, as per authority and budget.

Function	Central	Provincial	Khyber Pakhtunkhwa Province		
			District level	Tehsil/City level	Village/ Neighborhood Council level
Statistics, data collection	Pakistan Bureau of statistics	Bureau of Statistics Government of KP, Planning and Development Department: Liaison with federal, provincial, district departments and development partners; training to provincial line departments and district governments; data collection, analysis and publications.	5 Regional field offices of Bureau of Statistics KP, within the Planning & Development Departments at Peshawar, Abbottabad, Mingora-Swat, Bannu and Dera Ismail Khan.[381] Primary and secondary data collection and completion.[382]	The data compiled by each line department has tehsil-level details and are shared with regional offices of Bureau of Statistics	

CLG = City Local Government, DDAC = District Development Advisory Committee, KP = Khyber Pakhtunkhwa, NC = Neighborhood Council, TLG = Tehsil Local Government, VC = Village Council

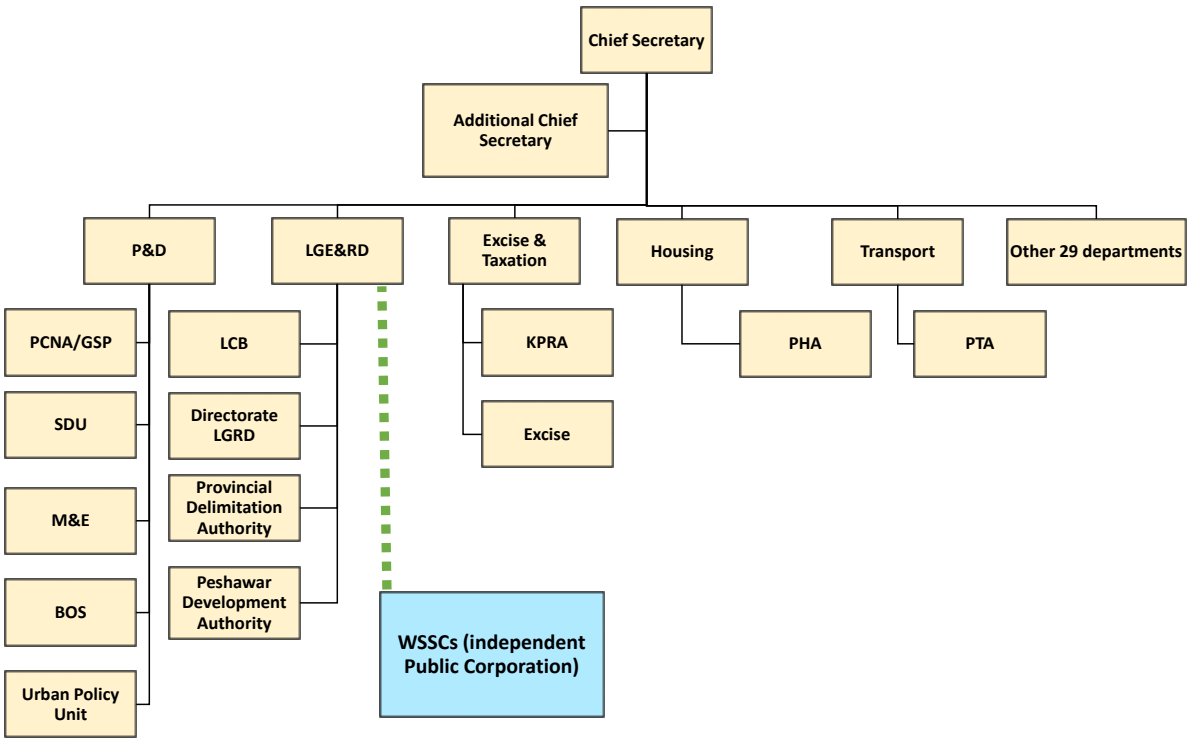
[381] Pakistan Bureau of Statistics. Available from: http://www.pbs.gov.pk/content/provencialregional-offices-0 Accessed 30 September 2018.

[382] Pakistan Bureau of Statistics. Available from: http://www.pbs.gov.pk/content/field-services Accessed 30 September 2018.

Appendix 4: Governance at Province level: roles and responsibilities

Figure 78 shows the overall institutional set-up at provincial level, with departments or institutions having key roles in urban planning, water supply, sanitation, solid waste, urban transport, and infrastructure development. Below province level, each Division is headed by a Commissioner reporting to the Chief Secretary, and each district is headed by a Deputy Commissioner. Some key provincial entities include the following:

Figure 78: Khyber Pakhtunkhwa Provincial Government Departments



Notes: BOS = Bureau of Statistics, KPRA = Khyber Pakhtunkhwa Revenue Authority, LCB = Local Council Board, LGE&RD = Local Government, Election and Rural Development (Department), LGRD:= Local Government and Rural Development Directorate, M&E = Monitoring and Evaluation Directorate, PCNA/GSP = Post Crisis Need Assessment /Governance Support Project, P&D = Planning and Development (Department), PHA = Provincial Housing Authority, PTA = Provincial Transport Authority, SDU = Special Development Unit, WSSCs = Water and Sanitation Service Companies.

The **Provincial Planning and Development Department** coordinates and monitors the development plans and programs prepared by various provincial departments. It acts as a catalyst between different departments to improve the pace and quality of economic development.

The **Local Government, Election and Rural Development** (LGE&RD) Department has the oversight role over local governments, including the Deputy Commissioners and Assistant Commissioners respectively heading districts and tehsils, ensuring that these entities discharge their functions and adhere to federal and provincial laws.

The **Directorate-General of Local Government and Rural Development** under the LGE&RD Department is mandated with the administration and management of local government institutions in the province, including in the following areas:

- Oversight, monitoring, evaluation, and supervision of local development schemes, donor-funded development programs, and all umbrella and individual development schemes and programs in the Provincial ADP.
- Implementation of laws and regulations relating to local governance in the province.
- Coordination among various departments and field offices.
- Monitoring and supervision of the functioning of village councils, including birth, death and marriages registration.

The **Local Council Board** is mandated with oversight of the administration of local council services and local councils at district and tehsil/town level.

The **Provincial Delimitation Authority** has the mandate to establish the boundaries of village councils, neighborhood councils and territorial wards for general seats in local government elections.

The **Excise, Taxation, and Narcotics Control Department**[383] is primarily engaged in collection of various provincial taxes, duties, fees, and cess items.

The **Transport Department**[384] aims to connect the central industrial regions with less-developed areas of the province, promote public-private partnerships for new investments in roads and infrastructure, upgrade and maintain existing road and highway networks, extend railway services to the northern parts of the province, improve road connectivity to railway stations to facilitate passenger and freight traffic, construct trucking terminals at Peshawar, Dera Ismail Khan and Havelian to meet the needs of the trucking sector for the next 30 years, and introduce a mass transit system in Peshawar and other big cities in Khyber Pakhtunkhwa.

The **Housing Department** and its field arm Provincial Housing Authority aim to provide the public and civil servants with affordable housing, through urban growth policies, land acquisition, the development of plots and housing units, implementation of area development schemes, new townships, and housing loans and investments. The execution of schemes is on a deposit works basis.[385]

Appendix 3 provides an overview of selected roles and functions.

383 Excise, Taxation and Narcotics Control Department. Available from: http://www.kpexcise.gov.pk/ Accessed 24 August 2020.

384 The KP Government established an independent Transport Department in September 2008.

385 The term "Deposit Work" is applied to works of construction or repair, the cost of which is met, not out of Housing Department funds in this case, but out of funds from other sources. Works executed by the Department for other Government Departments, municipalities and other local bodies, and private firms and individuals fall under this category.

Appendix 5: Human Resources and Performance in the Urban Water and Sanitation Sector

Table 58: Monthly salary ranges in the sector

Corporatized utilities (WSSCs)		Local government authorities (TLGs)	
Top management		**Top Management**	
Chief Executive Officer	PKR 500,000 +	Town Municipal Officer (BPS-17)	PKR. 60,000 +
General Manager (only in Peshawar)	PKR 350,000	Town Officer Infrastructure (BPS-17)	PKR. 60,000 +
		Town Officer Revenue BPS-17	PKR. 60,000 +
		Town Municipal Officer (TMO) BPS-17	PKR. 60,000 +
Middle Management		**Middle Management**	
Managers/Deputy Managers	PKR 110,000 to 250,000	Town Officer Revenue BPS 16	PKR 45000 +
Assistant Managers	PKR 45,000 to 135,000	Assistant Town Officer Infrastructure BPS 16	PKR 45000 +
		Senior Sub engineer BPS 16	PKR 45000 +
Field Staff	PKR 17.500 to 25,000	Field and Clerical Staff (BPS 4 to 11)	PKR. 18,000 to 40,000
6% to 14% annual increase in salary for all the staff.			

Source: Data collected by project team.
Notes: BPS 16 to 22 is classified as a Gazetted Officer.
BPS = Basic Pay Scale Structure (grade).), PKR = Pakistani Rupee, TLG = Tehsil Local Government, UC = Union Council, WSSC = Water and Sanitation Services Company.

Capacity Strengthening of the Sector

Capacity strengthening of WSSCs and the city/tehsil authorities responsible for planning, delivering, and management of urban services is a priority. Table 59 provides training needs obtained assessments from across eight districts (Abbottabad, Charsadda, Haripur, Mansehra, Mardan, Nowshera, Peshawar, and Swabi).

Table 59: Areas proposed for capacity building

Management and administration	Environment and social management
• Human resources management and planning • Administration • Reporting • Supply and asset management • Procurement and procurement procedures	• Environmental impact assessments • Social & environmental mitigation • Occupational health and safety
Finance	**Water resources management & protection**
• Budgeting and budget management • Accounts • Internal audit • Revenue and billing enhancement	• Water safety planning • Water supply sampling/testing • Wastewater sampling • Equipment installation • Equipment maintenance • Water resource monitoring
Land development	**Sanitation**
• Acquisition • Land registry (cadaster)	• Hygiene awareness • Sanitation • Drainage • Storm water & wet weather management • Flushable wipes & collection systems • Industrial wastewater • Utility management • Innovative technology
Planning and development	
• Planning • Project planning • Mis/database • GIS operation	
Projects and works	**Solid waste management**
• Planning and project management • Works • Contracts • Geotechnical aspects and earthworks	• Waste collection • Clearing of dumps • Re-dumping • Solid waste management • Recovery of recycle items • Sludge treatment and disposal
Urban development planning	**Roads/bridges**
• Urban infrastructure design • Urban infrastructure asset management • Control • Risk management	• Roads & roads maintenance • Roadside drains • Public transportation management • Urban transportation planning
Field operations, maintenance and repair	
• Training for operators/mechanics • Training of surveyors, sanitary installers, general fitters, pump mechanics, mechanics and drivers of tractors, and other related vehicles.	

Source: Management and staff of WSSP.

The following is a summary of the findings from all WSSCs that were assessed:

i. The top tier of management in the WSSCs and the Board of Directors would require orientations, exchange visits, workshops with other entities within and outside of KP to improve their leadership and strategic roles. The top management also requires exposure to best examples of urban services provision in other countries.

ii. The middle tier of management, largely the heads of department, mentioned community engagement and leadership management skills as top priorities, followed by MIS and data management for informed decision-making.

iii. Field staff make up a diverse group. For these staff, health and safety training is the most important priority due to the nature of their work, which is usually physically strenuous and labor intensive. This is followed by the need to build skills in community engagement and organization, which would enable field staff to effectively negotiate and engage with communities, especially on tariff collection and conflict prevention.

Training needs are extensive. Table 60 provide the results of two different assessments of training needs, the first from an assessment across eight districts, and the second based on interviews in Abbottabad, Mardan, and Peshawar.

Table 60: Training needs of different tiers of staff at water and sanitation services companies

Senior Management	
• Orientations, exchange visits, workshops with other entities within and outside of KP to improve their leadership and strategic roles • Resource mobilization and strategic partnership building • Leadership and good governance • Corporate social responsibilities-public private partnership	• Exposure to best examples of urban services provision in other countries • Financial management for non-financial managers • Transformation from public to corporate management, • Better understanding of the securities and exchange commission of Pakistan and related reforms
Middle Management	
General trainings: • Exposure to best examples of urban services provision in other countries • Leadership management skills (top priority), • Effective communication and advocacy (including behavior change communication) • Community engagement and organization • Conflict transformation and management • Occupational health and safety **Technical knowledge:** • Management information systems and data management for informed decision making (Second priority) • Water quality testing • Types/composition of waste & management • Recycling/treatment plant management • Management of dumping grounds • Waste to energy planning and implementation	**Planning and monitoring tools:** • Baseline surveys • SCADA systems • The use of GIS including GIS tracking systems and GIS based billing systems **Financial and other management tools:** • Internal audit • Tariff management • Assets utilization planning • File tracking systems • Complaint response mechanisms • Khyber Pakhtunkhwa Public Procurement Regulatory Authority Rules • Pakistan Public Procurement Regulatory Authority Rules
Field staff	
• Occupational health and safety • Efficient collection and distribution of bills • Communication and community engagement mobilization (including behavior change communication)	• Operations and maintenance • Management of dumping grounds • Terminal pressure management • Water disinfection • Leakage detection

Notes: GIS = Geographic Information System; SCADA = Supervisory control and data acquisition system.

Performance indicators in the sector

The following is an example of the list of performance indicators used by Tehsil Local Governments in the provision of water and sanitation services.

Table 61: Key performance indicators used in the sector by TLGs

Category	S#	Key Performance Indicator
Income	1	Total Income (own source) (Million)
		i. Total No, of own source contracts:
		ii. Contracts run by contractor
		iii. Contracts run by Departmental
	2	Total Grants received (Million)
	3	Income from 2% (Millions)
	4	Total income from other sources (Million)
	5	Total Fines under LG Act
	6	Total fines cases sent to courts
	7	Total fine amount (Millions PKR)
Expenditures	8	Salary expenses (million)
	9	O&M expenses (million)
	10	utilities expenses (million)
	11	POL expenses (million)
	12	other expenses (million)
Operations	13	Amount of solid waste generated (tons)
	14	Amount of solid waste disposed (tons)
	15	Liquid waste produced (MGD)
	16	Liquid waste disposed (MGD)
	17	Total household covered
Building Plan Approval	18	No. of building Plan NOCs received
	19	No. of building Plan NOCs approved
	20	No. of building plan NOCs pending
	21	No. of building Plan NOCs rejected
Housing schemes	22	No. of housing schemes NOCs received
	23	No. of housing schemes NOCs approved
	24	No. of housing schemes NOCs pending
	25	No. of housing schemes NOCs rejected
Assets	26	Total Offices (BPS17 and above)
	27	Total officials (BPS16 and below)
	28	Total Vehicles for official duties
	29	Total waste collection vehicles
	30	Total water supply vehicles
	31	Total number of other machineries
Developmental	32	No. of schemes
		i. Provincial ADP
		ii. Tehsil ADP/30% PFC
		iii. NGO Funded etc..
	33	Total cost (million)
	34	No. of schemes completed
	35	Physical progress

Category	S#	Key Performance Indicator
	36	expenditure (million)
Litigation	37	Total running court cases
	38	Total cases with pending replies
	39	Total Contempt of Court cases
	40	Total cases disposed of
Inquiries	41	Total number of formal inquiries
	42	Total number of formal inquiries disposed of
	43	Total number of Fact finding inquires
	44	Total number of factfinding inquires disposed of

Source: Provided to Project Team by TLGs in Kohat and Peshawar

Organograms

Figure 79: Organogram of Tehsil Local Government structure for providing water and sanitation services

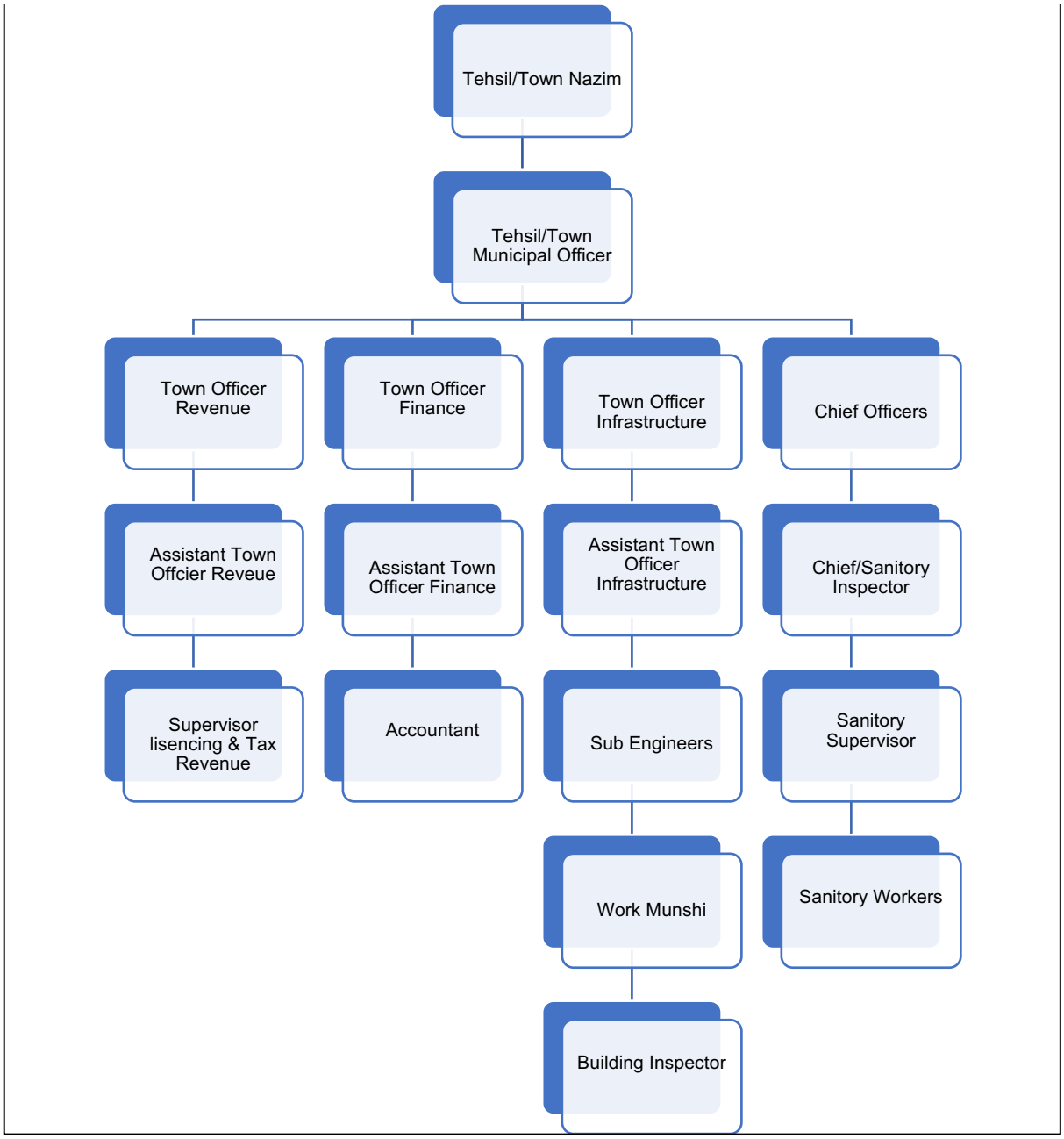
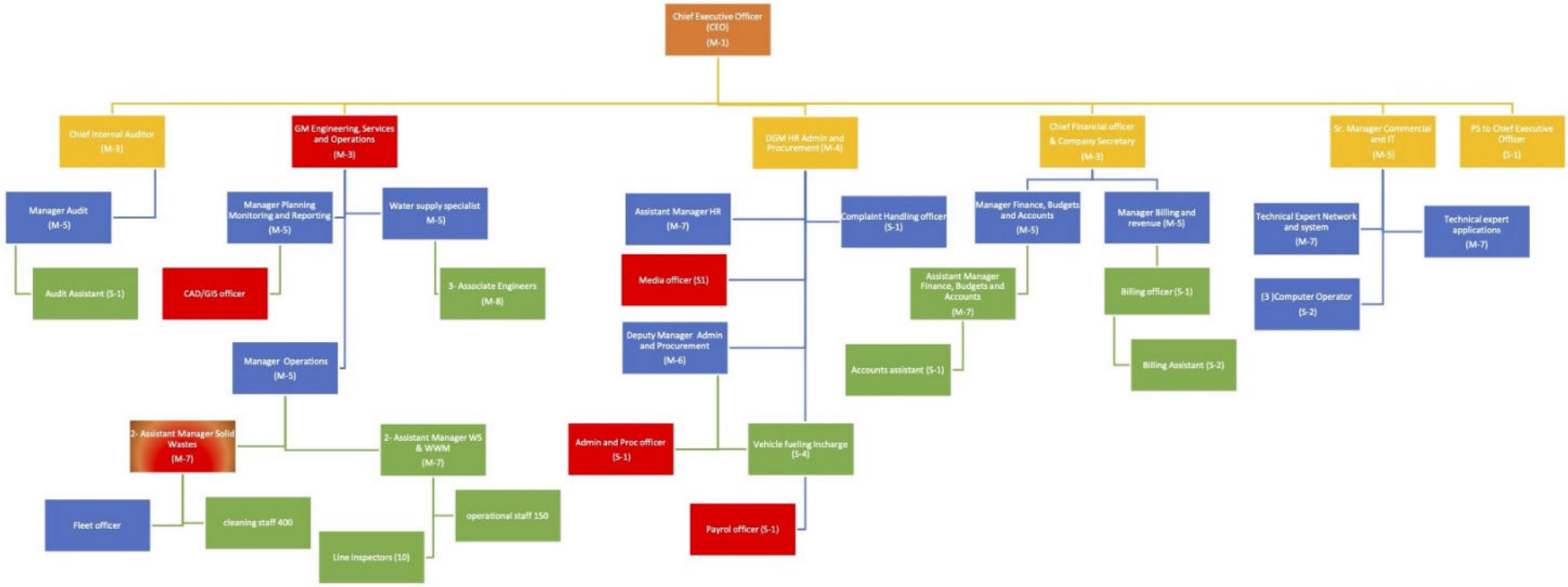


Figure 80: Organogram of Water and Sanitation Services Company, Mingora-Swat



Appendix 6: Social Statistics

Selected Education Statistics

Table 62: Educational institutions in Swat district

Educational Institutions	Government Schools 2016-17				Private Schools
	Boys	Girls	Total	Girls' School %	
Primary Schools	810	531	1341	39.60%	80
Deeni Madaris 2005-06	206	47	253	18.58%	
Middle Schools	78	54	132	40.91%	102
High Schools	78	41	119	34.45%	116
Higher Secondary Schools	30	14	44	31.82%	52
Degree Colleges	4	4	8	50.00%	
Technical and Vocational Centers			3	0.00%	
Polytechnic Institutes			1	0.00%	
College of Management Sciences			1	0.00%	
Universities			1	0.00%	

Source: Government of Khyber Pakhtunkhwa. 2018. *Annual Statistical Report of Government Schools 2017-18*. Peshawar: Department of Elementary & Secondary Education, GoKP.

Table 63: Girls educational institutes as per location in Swat district

Educational Institutions	Government Girls Schools 2016-17			
	Urban	Rural	Total	Girls' School %
Primary Schools	35	496	531	39.60%
Middle Schools	6	48	54	40.91%
High Schools	12	29	41	34.45%
Higher Secondary Schools	3	11	14	31.82%

Source: Government of Khyber Pakhtunkhwa. 2018. *Annual Statistical Report of Government Schools 2017-18*. Peshawar: Department of Elementary & Secondary Education, GoKP.

Table 64: Comparison of GER at Primary level from 2013-14 to 2018-19

Swat Region	GER 2013-14 Primary Level			GER 2018-19 Primary Level		
	Boys	Girls	Total	Boys	Girls	Total
Swat	106%	86%	96%	95%	68%	82%

Source Government of Khyber Pakhtunkhwa. 2018. *Annual Statistical Report of Government Schools 2017-18*. Peshawar: Department of Elementary & Secondary Education, GoKP.

Table 65: Comparison of NER at Primary level from 2013-14 to 2018-19

Swat Region	NER 2013-14 Primary Level			NER 2018-19 Primary Level		
	Boys	Girls	Total	Boys	Girls	Total
Swat	90%	68%	80%	71%	49%	60%

Source Government of Khyber Pakhtunkhwa. 2018. Annual Statistical Report of Government Schools 2017-18. Peshawar: Department of Elementary & Secondary Education, GoKP.

Table 66: Comparison of GER at Secondary level from 2013-14 to 2018-19

Swat Region	GER 2013-14 Secondary Level			GER 2018-19 Secondary Level		
	Boys	Girls	Total	Boys	Girls	Total
Swat	44%	21%	33%	33%	21%	28%

Source Government of Khyber Pakhtunkhwa. 2018. *Annual Statistical Report of Government Schools 2017-18*. Peshawar: Department of Elementary & Secondary Education, GoKP.

Table 67: Comparison of NER at Secondary level from 2013-14 to 2018-19

Swat Region	NER 2013-14 Secondary Level			NER 2018-19 Secondary Level		
	Boys	Girls	Total	Boys	Girls	Total
Swat	33%	16%	25%	23%	16%	20%

Source Government of Khyber Pakhtunkhwa. 2018. Annual Statistical Report of Government Schools 2017-18. Peshawar: Department of Elementary & Secondary Education, GoKP.

Table 68: Children of secondary school age attending secondary school or higher

Districts/Province	Attending Primary School		Attending Secondary School		Out of School	
	Boys	Girls	Boys	Girls	Boys	Girls
Swat	46.9%	28.0%	38.5%	24.5%	14.6%	47.6%
Khyber Pakhtunkhwa	48.9%	30.2%	35.9%	24.9%	15.1%	44.8%

Source Government of Khyber Pakhtunkhwa and UNICEF – Pakistan, 2018. Multiple Indicator Cluster Survey (MICS) 2016-17.

Note: Adjusted net attendance ratio, percentage attending primary school, and percentage out of school (%)

Table 69: Percentage of girls in the total out-of-school population

Districts/Province	Primary School		Secondary School	
	Total out of school children	Girls % in the total out-of-school children	Total out of school children	Girls % in the total out-of-school children
Swat	42.7%	56.9%	30.4%	74.9%
Khyber Pakhtunkhwa	42.1%	55.9%	29.7%	74.3%

Source Government of Khyber Pakhtunkhwa and UNICEF – Pakistan, 2018. Multiple Indicator Cluster Survey (MICS) 2016-17.

Table 70: Youth literacy rate (age 15–24 years)

	Male	Female
Khyber Pakhtunkhwa: Urban	87.8%	73.9%
Khyber Pakhtunkhwa: Rural	81.5%	49.8%
Swat	85.4%	52.7%

Source Government of Khyber Pakhtunkhwa and UNICEF – Pakistan, 2018. Multiple Indicator Cluster Survey (MICS) 2016-17

Table 71: Percentage of children of secondary school age attending secondary school or higher (adjusted net attendance ratio), percentage attending primary school, and percentage out of school

	Male			Female			Total		
	Net Attendance Ratio (Adjusted)	Attending Primary School	Out of School[a]	Net Attendance Ratio (Adjusted)	Attending Primary School	Out of School[a]	Net Attendance Ratio (Adjusted)	Attending Primary School	Out of School[a]
Khyber Pakhtunkhwa	48.9	35.9	15.1	30.2	24.9	44.8	39.7	30.5	29.7
Districts									
Swat	58.4	36.2	5.5	60.8	27.9	11.3	59.6	32.2	8.3
Bannu	51.9	33.6	14.4	19.2	21.5	59.1	35.8	27.6	36.3
Batagram	27.5	50.4	22.1	4.7	21.8	73.4	15.4	35.3	49.2
Buner	45.4	33.8	20.8	17.4	25.4	56.7	31.9	29.8	38.1
Charsadda	50.7	37.8	11.3	31.3	26	42.7	41.3	32.1	26.5
Chitral	70.1	25.9	4	64.8	20.9	14.4	67.4	23.3	9.3
Dinkha	35.2	30.1	34.6	15.8	16.3	67.9	25.3	23.1	51.5
Hangu	52.1	41	6.9	19.7	15.7	64.7	35.2	27.8	36.9
Haripur	57.8	32.5	9.7	51.4	27.6	20.9	54.8	30.2	14.9
Karak	74.6	19.8	5.2	39.4	22.3	38.3	57.3	21	21.4
Kohat	53.4	39	7.6	33.5	28	38.4	44.1	33.9	21.9
Kohistan	33.7	33.3	32.9	1.3	9.9	88.8	19.3	22.9	57.7
Lakki Marwat	50	35.6	14.5	19.8	15.5	64.7	34.5	25.3	40.2
Lower Dir	55.5	36.4	8.1	41.3	27.4	31.3	48.2	31.8	20.1
Malakand	59.6	33.6	6.8	47.1	30.7	21.7	53.1	32.1	14.5
Mansehra	47.2	37.9	14.6	41.3	26.9	31.8	44.4	32.7	22.7
Mardan	55.8	33.2	10.7	40.6	27.7	31.7	48.7	30.6	20.5
Nowshera	57.1	31	11.9	41.4	29.6	29.1	49.3	30.3	20.4
Peshawar	44.9	38.6	16.5	26.3	30.9	42.7	35.1	34.5	30.3
Shangla	24.3	43.7	31.6	8.6	13.5	77.3	17.1	29.9	52.5

	Male			Female			Total		
	Net Attendance Ratio (Adjusted)	Attending Primary School	Out of School[a]	Net Attendance Ratio (Adjusted)	Attending Primary School	Out of School[a]	Net Attendance Ratio (Adjusted)	Attending Primary School	Out of School[a]
Swabi	58.9	30.7	10.4	36.8	25.9	37.3	48.4	28.4	23.2

Source: MICS 20167

Note: [a] The percentage of children of secondary school age out of school are those who are not attending primary, secondary, or higher education.

Selected Health Statistics

Table 72: Health outcome and service indicators

Indicators	National	Khyber Pakhtunkhwa	FATA
Under-five mortality	74	64	33
Infant mortality	62	53	29
Neonatal mortality	42	42	18
Maternal mortality ratio, per 100,000 live births	140	-	-
Stunting prevalence (moderate and severe)	37.6	40.4	52.3
Stunting prevalence (severe)	17.4	18.9	27.6
Wasting prevalence (moderate and severe)	7.1	7.5'	5.3
Wasting prevalence (severe)	2.4	3.1	2.5
Underweight prevalence (moderate & severe)	23	21.8	22.9
Underweight prevalence (severe)	8.4	4.6	8.4
Overweight prevalence	2.5	3	5.8
Service coverage and use			
Percentage of children age 12-23 months who:	66	55	30
received all age-appropriate vaccinations			
Received BCG vaccine	88	81	55
Received 3 doses of diphtheria-pertussis-tetanus (DPT) vaccine and Hepatitis B, Haemophilus influenzae type b	75	65	43
Received 3 doses of oral polio vaccine	86	82	83
Received one dose of measles vaccine	73	63	35
Diarrhea prevalence below age 5, %	19	21	20
Proportion of deliveries in health facility, %	66	62	49
Proportion of deliveries assisted by a skilled provider, %	69	67	52
Antenatal care coverage	86	80	71
Currently married women age 15—49 using any modern contraceptive method, %	25	23	14

Sources: Pakistan Demographic and Health Survey, 2017–2018.
WHO, UNICEF, UNFPA, World Bank Group, and the United Nations Population Division. Trends in Maternal Mortality: 2000 to 2017. Geneva, World Health Organization, 2019.
Notes: All child mortality rates are for the ten-year period preceding the PDHS in 20178.

Table 73: Maternal and child health services: coverage and use, Khyber Pakhtunkhwa and Swat district

		Khyber Pakhtunkhwa			Swat
		Total	Urban	Rural	
Maternal health services	Modern contraceptive use	26.3%	33.8%	24.9%	35.6%
	Unmet need: contraception	20.8%	17.0%	21.5%	15.9%
	Antenatal care, at least one visit	74.3%	88.3%	71.7%	82.7%
	Antenatal care, 4 visits or more	44.1%	65.2%	40.2%	57.8%
	Effective antenatal care [1]	56.1%	76.0%	52.3%	71.4%

		Khyber Pakhtunkhwa			Swat
		Total	Urban	Rural	
	Deliveries assisted by skilled provider	68.6%	81.5%	66.1%	79.8%
	Health facility deliveries	64.5%	79.0%	61.7%	78.5%
Child health services	Diarrhea prevalence, past 2 weeks	21.4%	21.4%	21.3%	24.6%
	BCG vaccination	72.3%	85.3%	69.9%	91.0%
	DPT3+HepB+Hib vaccination	51.7%	61.1%	49.9%	80.4%
	Oral polio-3 vaccination	55.4%	55.6%	55.4%	72.3%
	Measles 1 dose	54.5%	67.5%	52.1%	75.1%

Source Government of Khyber Pakhtunkhwa and UNICEF – Pakistan, 2018. Multiple Indicator Cluster Survey (MICS) 2016-17.

Note: Effective antenatal care means a minimum of three tests recommended by the World Health Organization guidelines: (i) blood pressure measurement; (ii) urine testing; (iii) blood testing.

Table 74: Malnutrition prevalence among children under five years of age (%)

		Pakistan	Khyber Pakhtunkhwa	FATA
Stunting	Moderate and severe (<- 2 SD)	37.6	40.4	52.3
	Severe (<- 3 SD)	17.4	18.9	27.6
Wasting	Moderate and severe (<- 2 SD)	7.1	7.5’	5.3
	Severe (<- 3 SD)	2.4	3.1	2.5
Underweight	Moderate and severe (<- 2 SD)	23	21.8	22.9
	Severe (<- 3 SD)	8.4	4.6	8.4
Overweight	> + 2 SD	2.5	3	5.8

Source: Pakistan DHS, 20178.

Table 75: Malnutrition prevalence among children under five years of age

		Swat	Khyber Pakhtunkhwa	
			Urban	Rural
Stunting	Stunting, moderate and severe	36.9%	34.2%	42.7%
	Stunting, severe	18.8%	16.1%	21.6%
Wasting	Wasting, moderate and severe	8.4%	7.2%	8.2%
	Wasting, severe	3.7%	2.9%	3.0%
Underweight	Underweight, moderate and severe	19.2%	15.4%	21.8%
	Underweight, severe	6.1%	4.6%	8.0%
Overweight	Overweight	6.7%	6.5%	6.9%
Low birth weight	Low birthweight rate	31.6%	30.7%	32.7%

Source Government of Khyber Pakhtunkhwa and UNICEF – Pakistan, 2018. Multiple Indicator Cluster Survey (MICS) 2016-17.

Table 76: District wise number of medical & paramedical staff actually posted in Khyber Pakhtunkhwa (2018)

	Physicians	Radiologists	Dental Surgeons	Nurses	Nurse Dias (nurse midwives)	Dias (Midwives)	Primary Health Technician (LHV's)	Other Para Medical staff
Khyber Pakhtunkhwa	7,849	53	498	5,885	1,319	2,807	1,481	16,366
Swat	471	4	26	483	97	85	60	799

Source: Development Statistics of Khyber Pakhtunkhwa 2019

Table 77: District wise number of registered private medical practitioners in Khyber Pakhtunkhwa

	2015-16			2016-17			2017-18		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Khyber Pakhtunkhwa	5,075	4,609	466	5,075	4,609	466	3,121	2,816	305
Swat	520	488	32	520	488	32	103	98	5

Source: Development Statistics of Khyber Pakhtunkhwa 2019

Appendix 7: Excerpts from Services and Asset Management Agreement (SAMA)

Responsibilities of the WSSC

- Exclusive responsibility for planning, designing, construction, operation and maintenance of water supply, sanitation, sewerage, drainage, fluid and solid waste systems and allied services, including their enhancement and improvement.
- Managing all activities, facilities, programs, resources and spaces associated with these services previously under the control of the tehsil municipal administration, including machinery, tools and vehicles.
- Managing and supervising personnel, who had previously been delivering these services under the auspices of the tehsil municipal administration.
- Promoting public awareness on the importance of water conservation, waste reduction, resource recovery and the protection of the environment.
- Developing cost recovery measures such as fees and user charges, which the WSSC can request the tehsil municipal administration to implement or which it can undertake to implement on its own.
- Establishing standards of performance and ensuring compliance with such standards.

Responsibilities of the Tehsil Municipal Administration (TMA)386

- May assist and support the WSSC and suggest improvements in a non-intrusive manner.
- Make timely payments for salaries and other allowances and payments of its employees.
- Make transfers to the WSSC for pensions and reimbursements of medical charges for retired regular employees of the TMA.
- Carry out regular promotion board meetings for those employees at the disposal of the WSSC.
- Take appropriate actions to obtain the necessary amendments to existing laws, bye-laws, regulations and son that would facilitate the WSSC achieving its objectives.
- Propose to the province an amendment of the Local Government Act which would make the WSSC a “competent legal body for discharge of its devolved functions independently;”

386 The TMA is now called the Tehsil Local Government (TLG).

Responsibilities of the Province

- Act as the guarantor of the agreement, ensuring all parties perform their respective duties in their true letter and spirit, with no force allowed to scuttle the free operations of the WSSC with artificial or personal hindrances.
- Any dispute or difference between the WSSC and the TMA will be sent to the province and resolved in accordance with the Arbitration Act, having regard to the new concept of corporate governance as expressed in the agreement, and the decision shall be final and binding; the same applies in the case of an alleged breach of the agreement, in which case a financial penalty may also be awarded.
- Ensure that the amounts payable by the tehsil municipal administration to the WSSC under the agreement are transferred.
- Continue to finance the activities of the WSSC related to the development and maintenance of municipal services, capital, operational and establishment cost.
- Transfer funds to the WSSC based on an estimate of financial requirements for the financial year prepared by the WSSC.

Further Financial Provisions

- In the first year, the remaining budget for the performance of water supply, sanitation, solid waste management and hygiene services that was in the tehsil municipal administration's account was to be transferred to the WSSC, minus any amount retained for residual water and sanitation functions agreed to by the WSSC.
- The WSSC is to submit budgetary estimates and budgetary reports to the TMA.
- The TMA is required to inform the WSSC at an early stage of the amounts budgeted for the following year for the functions and services devolved to the WSSC.

Transfer of Employees

- Regular and contract employees of the TMA carrying out these services (along with their sanctioned strength) are to be placed at the disposal of the WSSC, except those retained to carry out residual functions.
- The WSSC can return any employee to the TMA without providing a reason.
- The conditions of service of these employees will remain the same as if they had not been assigned to the WSSC, including opportunities for promotion.

Benchmarking and Performance Indicators

- Within six months after the signing of the agreement, the WSSC is to complete benchmarking of existing services and fix targets for the improvement of services for the following year.

- On June 1st of each year, the WSSC shall submit a list of mutually agreed upon key performance indicators, which shall be qualitative as well as quantitative measurements.

General Provisions

- The length of the agreement is 20 years and may be extended on mutual consent.
- The agreement states, “The following shall be conditions precedents for the effectiveness of this agreement”:
- The WSSC will submit a Business Plan to the TMA.
- A list of deputed staff has been made available and the deputed staff have been transferred to the satisfaction of the WSSC.
- The entrusted assets have been made available and transferred to the satisfaction of the WSSC.
- The funds as per other relevant clauses have been transferred to the account of the WSSC.