GAPS INDENTIFICATION
& NEED ASSESSMENT

STUDY REPORT

AREA AROUND REKO DIQ MINE SITE

NOK KUNDI & DALBANDIN

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We hope this report proves to be a valuable resource for RDMC, government departments, development practitioners, and all stakeholders committed to promoting inclusive and sustainable development in District Chaghi.

Regards,
Asif Sherazi
Country Director - Islamic Relief Pakistan

Abbreviations

AC	Assistant Commissioner
ADC	Additional Deputy Commissioner
AI	Artificial Intelligence
BHU	Basic Health Unit
BTEVTA	Balochistan Technical Education & Vocational Training Authority
BUITEMS	Balochistan University of Information Technology, Engineering and Management Sciences
CD	Civil Dispensary
C&W	Communication and Works
CSR	Corporate Social Responsibility
DC	Deputy Commissioner
DEO	District Education Officer
DFO	District Forest Officer
DHO	District Health Officer
DHMIS	District Health Management Information System
DHQ	District Headquarter Hospital
EMIS	Education Management Information System
FGD	Focus Group Discussion
GIL	Government Innovation Lab (University of Balochistan)
IRP	Islamic Relief Pakistan
LHW	Lady Health Worker
LHV	Lady Health Visitor
MICS	Multiple Indicator Cluster Survey
M&E	Monitoring and Evaluation
NGO	Non-Governmental Organization
P&DD	Planning and Development Department
PPIU	Policy Planning and Implementation Unit
PSDP	Public Sector Development Program
PSLM	Pakistan Social and Living Standards Measurement Survey
PTSMC	Parent-Teacher School Management Committee
QESCO	Quetta Electric Supply Company
RHC	Rural Health Center
RDMC	Reko Diq Mining Company
ROW	Right of Way
RTA	Regional Transport Authority
RTSM	Real-time school monitoring
SDO	Sub-divisional Officer
THQ	Tehsil Headquarter Hospital
UHC	Universal Health Coverage
UNICEF	United Nations Children's Emergency Fund
UoB	University of Balochistan
XEN	Executive Engineer

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Preface

This Needs Assessment Study for targeted areas around the Reko Diq mine site, including Nok Kundi and Dalbandin in Chagai District, Balochistan, has been conducted against the backdrop of transformative potential brought about by the development of one of the world's largest copper-gold mining projects. Commissioned by Barrick Gold Corporation and implemented by Islamic Relief Pakistan (IRP), this comprehensive assessment aligns with IRP's longstanding commitment to empowering marginalized communities through sustainable and inclusive development.

Chagai, including specific study areas, despite its significant mineral wealth, remains profoundly underserved, confronting persistent challenges across education, healthcare, water supply, livelihoods, infrastructure, energy access, and climate resilience. This assessment is particularly timely, as rapid population growth and urbanization exacerbate existing gaps, underscoring the urgent need for informed, sustainable interventions.

In line with IRP's methodology emphasizing stakeholder participation and community-driven solutions, this study synthesizes extensive data collection through stakeholder dialogues, household surveys, focus group discussions, key informant interviews, and technical analyses. The assessment strategically identifies sector-specific challenges and opportunities, proposing phased interventions integrated with global best practices and frameworks such as the Sustainable Development Goals (SDGs), the Paris Agreement, and the Sendai Framework.

The findings and recommendations contained herein are intended to guide future development plans, resource allocations, and collaborative efforts among government bodies, development partners, private sector stakeholders, and the communities themselves. It is our hope that this document will serve as a pivotal reference to achieve meaningful, lasting improvements in the quality of life and resilience of the communities in Chagai.

Executive Summary

Chagai District, Pakistan's largest district in land area (44,748 km²), is poised for transformation due to the Reko Diq copper-gold mining project-one of the largest untapped mineral deposits in the world. Despite this immense potential, the region remains deeply underdeveloped, with persistent challenges in education, health, drinking water, livelihoods, infrastructure, energy, and climate resilience. With over 92% of its population residing in rural areas, and urban centers like Nok Kundi experiencing an annual population growth rate of 5.46%, the pressure on basic services and infrastructure is rapidly intensifying. Projections indicate that the district's population may nearly double by 2046, underscoring the need for urgent, inclusive, and climate-adaptive investments in human development and urban services.

The education sector in Chagai (including the study areas) is facing a learning crisis. As of Census 2023, the literacy rate has declined to 21%, with female literacy at a stark 15%. More than 68,000 children aged 5-16 remain out of school, and 55% of the population has never attended school. Despite having 317 government schools, the region suffers from a massive infrastructure deficit-83% of schools lack drinking water, 88% lack electricity, and 80% lack toilets. Teacher deployment is inefficient, resulting in highly skewed teacher-student ratios, sometimes reaching 1:213. There is minimal use of digital tools and limited access to secondary and technical education. The district requires a 10-year phased plan that emphasizes community-based schooling, EdTech integration, mobile learning, and vocational education aligned with emerging local industries such as mining and renewable energy.

The region suffers from both underutilization and under-resourcing. While the physical network of health facilities is relatively extensive, functionality remains poor. Nearly one-third of sanctioned health posts are vacant, and some Basic Health Units (BHUs) are completely non-functional. Only 42% of health facilities have electricity, and 36% lack sanitation facilities. The DHQ Hospital in Dalbandin serves over 135,000 people, creating overwhelming demand. Over 18,000 people in the district live with functional disabilities, yet there is no screening or rehabilitation infrastructure in place. The district faces high vulnerability to maternal and child health issues, with a lack of emergency transport, data systems, and referral pathways. The health strategy recommends a phased approach: beginning with rapid staffing, equipment utilization, and solar power upgrades, followed by 24/7 BHUs, referral networks, and ultimately a district-level teaching hospital and universal health coverage (UHC) model.

Access to safe drinking water remains a critical issue, especially in Nok Kundi and Dalbandin. Although 88-91% of the population reportedly accesses "improved sources," over half rely on distant or unregulated supplies. Water pumped from sources like boutique and Gut, located 65-75 km away is costly and vulnerable to illegal punctures and fuel shortages. Groundwater in many areas is brackish and contaminated, with high Total Dissolved Solids (TDS), sodium, and microbial risks. Seasonal shortages and poor maintenance of tube wells are common, while diesel-dependent booster stations remain financially and environmentally unsustainable. The district lacks water treatment plants, consistent filtration, or a water quality surveillance system. A comprehensive strategy proposes short-term restoration of tube wells, RO plant deployment, and real-time monitoring, followed by solarized pumping, tiered billing, and the establishment of a District Water Resilience Fund and a formal Water Authority for long-term sustainability.

The urban centers of the study area, Nok Kundi and Dalbandin, suffer from fragmented growth, inadequate service delivery, and weak regulatory frameworks. The road network, though totaling 1,070.84 km, has a density of only 0.02 km/km², making vast parts of the district inaccessible. Roads are often unpaved or eroded, with minimal drainage and no maintenance programs. Drone surveys and topographic analysis have informed master plans for both towns, incorporating zoning, stormwater management, and spatial reorganization. Despite this, issues like dust pollution, unregulated land use, and encroachments persist. Strategic interventions include piloting key road upgrades, implementing green belts and facade improvements, and enforcing building regulations. In the medium to long term, these towns are envisioned as resilient, service-optimized urban hubs supported by a dedicated district planning authority and digital governance tools.

Livelihoods in Chagai are constrained by multidimensional poverty, limited formal employment, and poor infrastructure. As per MICS 2019-20, 63% of the population lives in poverty, with 31.2% severely poor. Youth unemployment stands at 53.9% among 15-24-year-olds. The majority of homes (88%) are kacha structures, vulnerable to climatic shocks. Agriculture is practiced on only 144,373 hectares out of 3.26 million, with low productivity due to poor soil, limited irrigation, and low mechanization. The livestock sector has also declined, dropping from 533,000 animals in 2006 to 425,000 in 2021, amid shrinking rangelands and poor veterinary access. The informal economy dominates, centered around cross-border trade and mining-related labor, with limited protection or support. Only one technical training center exists for over 70,000 youth, and there are no microfinance institutions like Akhuwat Foundation. Livelihood strategy recommendations include district-level coordination frameworks, skill training, SME development (especially mineral-linked), digital entrepreneurship, and benefit-sharing models tied to mining royalties.

The district's climate challenges are severe and escalating. Chagai lies in a hot desert zone with temperatures exceeding 45°C, annual rainfall under 100 mm, and mean relative humidity below 23%. Dalbandin, the district's main urban center, records an average daily temperature of 26.3°C, with extremes ranging from 2.1°C to 43.4°C, and daily precipitation averaging just 0.45 mm, highlighting intense aridity and prolonged heat stress. Soils are saline, calcareous, and nutrient-poor, contributing to widespread desertification. Vegetation is sparse, and plantation survival rates are extremely low due to environmental stress. There is no district-wide afforestation plan, and minimal community engagement exists in environmental stewardship. The climate strategy emphasizes short-term greening pilots using mature, drought-resistant species, medium-term cluster plantations, wastewater reuse, and long-term ecosystem governance through a Green Infrastructure Authority, integrated into EIAs and district plans.

Energy access is both a constraint and an opportunity in all the study areas. While 97% of urban households in the district have electricity, over 56% of rural residents rely on off-grid solar, and 75% still use firewood for cooking: highlighting energy poverty and environmental risks. As mining activity expands, energy demand is expected to rise from 63 MW to over 226 MW by 2028. Chagai's hybrid renewable potential, up to 9 GW, is among the highest in South Asia. Yet, affordability, service reliability, and institutional coordination remain poor. The region lacks a district energy policy, financing options for solar adoption, or sustainable after-sales ecosystems. A phased energy strategy proposes immediate rollout of solar home systems and LPG programs, development of Renewable Energy Funds and RTSHs (regional technical hubs), and mid-term mini-grid and carbon finance projects. Long-term interventions include a District Energy Office, smart grid integration, and a circular economy for battery recycling and energy efficiency.

1. Introduction

District Chaghi, situated in the western part of Balochistan, borders Iran and Afghanistan and holds immense strategic, economic, and mineral significance. The Reko Diq mine site, located near Nok Kundi, is one of the largest undeveloped copper-gold deposits in the world and is expected to bring transformative change to the region. However, despite its potential, the broader area, particularly the towns of Nok Kundi and Dalbandin and surrounding villages, remains underdeveloped, facing systemic challenges in nearly every sector of public service and infrastructure.

This needs assessment study has been initiated to establish a clear and evidence-based understanding of the existing gaps and priority areas for development in light of the anticipated socio-economic shifts that the Reko Diq project may catalyze. The assessment focuses on key sectors including education, health, livelihoods, water and sanitation, energy access, transport infrastructure, and social services, with the objective of creating a roadmap for inclusive, resilient, and locally grounded development.

The preliminary review indicates severe deficits in basic infrastructure. For instance, out-of-school children (5-16 years) population in the region is 68,191, and literacy rate (10 years and above) only 21%. In health facilities, out of a total of 469 sanctioned posts, only 324 are currently filled, leaving 145 critical positions vacant. Water supply schemes are inadequate, and sanitation services are non-existent in many remote settlements, leading to public health and hygiene challenges. Energy access is also a major issue, with a large portion of the population dependent on traditional and unsafe sources for lighting and cooking.

Livelihoods in these areas are fragile and primarily dependent on livestock, small-scale trade, and public employment. However, the expected economic activity linked to the Reko Diq project presents a unique opportunity to reshape the local economy through skill development, enterprise promotion, and local employment strategies. This transition, however, requires targeted planning, infrastructure development, and strong coordination among government agencies, the private sector, and civil society.

The methodology of this study integrates a comprehensive and participatory approach to ensure that the findings are both practical and grounded in the realities of the region. Two district-level workshops were conducted, one in Nok Kundi and the other in Dalbandin, providing a platform for local stakeholders, including community members, service providers, and local officials, to share their perspectives and priorities. These were followed by a provincial-level workshop in Quetta, where senior government officials and experts from relevant departments provided detailed feedback on sectoral challenges and opportunities. In addition, departmental data was collected and reviewed, and a desk review of relevant reports, policies, and development plans was undertaken. This triangulated methodology ensures that the assessment reflects both community realities and institutional perspectives, creating a strong foundation for evidence-based planning and targeted interventions.

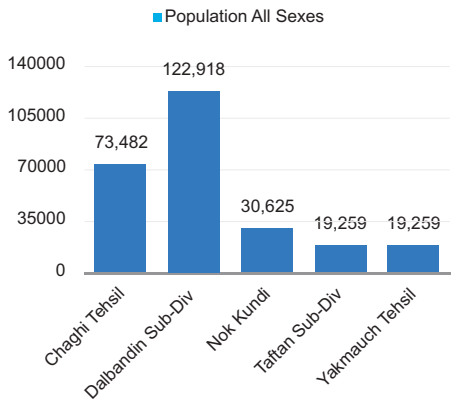
Ultimately, this needs assessment will inform the design of short, medium, and long-term development strategies, including public sector investments, private sector partnerships, and donor-supported initiatives. The goal is to ensure that the benefits of mineral wealth are translated into tangible improvements in human development and living standards for the local population, setting a precedent for responsible, inclusive, and sustainable development in mineral-rich but resource-poor regions.

1.1 Population Distribution and Growth Dynamics

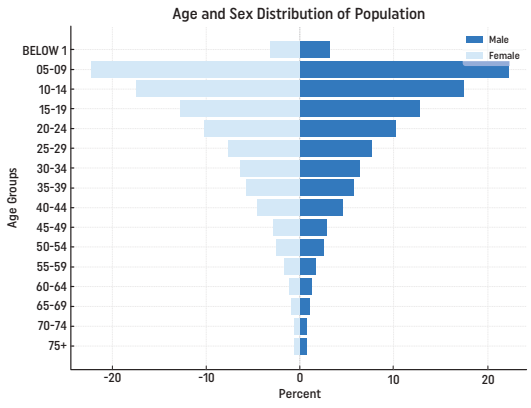
Chagai District covers an area of 347,190 km² and consists of three administrative divisions: Chagai Tehsil, Dalbandin Sub-Division, and Nok Kundi Tehsil. Chagai has 23 union councils (Details in annex-PA). The district has a total population of 269,192[1] , accounting for 1.18% of Balochistan's total population. With a population density of just 6 persons per square kilometer, Chagai is sparsely populated. The graphical representation below compares the population of its administrative divisions.

[1] 7th Population and Household Census 2023

Dalbandin has the largest population in Chagai District, making up 45.66% of the total. The district is predominantly rural, with 92.55% of residents living in rural areas. Notably, the average household size in Chagai is 7, whereas in Nok Kundi, it is significantly higher at 9.7. A detailed breakdown of the population by gender, urban and rural distribution, area, and average household size is provided in annex-PB.



Census data from 2017 to 2023 indicates that Nok Kundi has the highest annual average population growth rate in Chagai District at 5.46%. In comparison, Chagai Tehsil has a lower growth rate of 2.93%. The higher growth rate in Nok Kundi may suggest migration from other areas into the tehsil.



The population pyramid of Chagai District exhibits a broad base, indicating a youthful population with a high proportion of individuals in the 0-9 age group. Males slightly outnumber females across most age cohorts, particularly in the working-age groups (15-44 years). The sharp decline in population after the age of 50 suggests lower life expectancy and possible outmigration among older age groups. The higher population share in younger age brackets implies a high birth rate, which, coupled with the rapid growth in Nok Kundi, may indicate ongoing demographic changes due to migration and fertility trends.

For a more detailed breakdown of the population distribution, a single-year population table is provided in annex-PC. This table presents granular data on the age structure of Chagai District, further illustrating demographic trends, including the concentration of younger age groups, gender distribution, and shifts in population dynamics over time.

1.2 Population Growth Trends: 2023-2046

The population projections reveal a steady and significant increase across all regions of District Chagai, with Nok Kundi showing the fastest growth. The overall population of Chagai district is expected to nearly double, rising from 269,192 in 2023 to 511,814 by 2046, reflecting an average annual growth rate of 2.93%. This exponential rise places increasing pressure on already limited infrastructure and public services. To understand future service delivery needs, the table below shows how the population is expected to increase significantly in all key settlements, with Nok Kundi showing the sharpest rise.

The Chagai Tehsil, which includes parts of Dalbandin, grows at a faster annual rate of 3.96%, with its population expanding from 73,482 in 2023 to 174,044 by 2046. This steep growth highlights the need for accelerated investments in education, healthcare, water supply, and transport services in the Tehsil to prevent service delivery gaps.

Dalbandin, the district headquarters, shows a comparatively moderate growth of 2.4% annually, increasing from 122,918 in 2023 to 204,922 in 2046. While lower than Nok Kundi and Chagai Tehsil, this growth is still substantial, necessitating the expansion of municipal and urban services, especially given its administrative and commercial significance.

This population momentum across the district emphasizes the importance of long-term planning to ensure sustainable development, with differentiated strategies tailored to each region's growth rate and projected needs. Population projections, except for Nok Kundi, are given below.

Table 1: Demographic Trends in Chagai: Population Projections by Sub-Region (2023-2046)

Year/Area (Growth Rate)	Chagai (2.93%)	Chagai Tehsil (3.96%)	Dalbandin (2.4%)
2023	269,192	73,482	122,918
2025	285,273	79,437	128,917
2026	293,638	82,583	132,011
2028	311,037	89,207	138,316
2030	329,447	96,301	144,827
2032	348,897	103,890	151,549
2034	369,420	112,007	158,488
2036	390,152	120,681	165,650
2038	412,032	129,955	173,039
2040	435,101	139,877	180,658
2042	459,391	150,498	188,511
2044	484,947	161,869	196,599
2046	511,814	174,044	204,922

Given the unusually high annual growth rate of **5.43%** observed in Nokundi between **2017 and 2023**, it is unlikely that this pace will persist over the long term. This recent surge is largely driven by the Reko Diq mining project's revival and related development activities, which have attracted a significant number of temporary and permanent migrants, construction workers, and service providers. However, as the project matures and transitions from construction to operations, the intensity of in-migration is expected to stabilize.

To reflect more realistic future trends, a **step-down growth model** has been adjusted in accordance with RDMC feedback. It assumes a high growth rate of **4.5% during 2023-2025**, followed by **3.0%** in 2026-2028, and continuing with a sustained **3.0% rate through 2046**. This scenario reflects both the momentum gained through recent development and the natural tapering that typically follows initial infrastructure booms.

Table 2 : Projected Population of Nok Kundi Tehsil (2023-2046)

Year	Growth Rate	Projected Population
2023	-	30,625
2024	4.5%	32,000
2025	4.5%	33,440
2026	3.0%	34,443
2027	3.0%	35,476
2028	3.0%	36,541
2029	3.0%	37,637
2030	3.0%	38,766
2031	3.0%	39,929
2032	3.0%	41,127
2033	3.0%	42,361
2034	3.0%	43,632
2035	3.0%	44,941
2036	3.0%	46,289
2037	3.0%	47,678
2038	3.0%	49,108
2039	3.0%	50,581
2040	3.0%	52,099
2041	3.0%	53,662
2042	3.0%	55,272
2043	3.0%	56,930
2044	3.0%	58,638
2045	3.0%	60,397
2046	3.0%	**62,209**

2. Education

The provision of education services in Pakistan is primarily governed by article 25A and article 37(B) of the Constitution of Islamic Republic of Pakistan, as well as global commitments such as Sustainable Development Goals, SDG-4 and SDG-8. SDG-4 emphasizes quality education and lifelong learning opportunities for all, ensuring inclusive and equitable education systems. SDG-8 focuses on decent work and economic growth, linking education with skill development, employability, and sustainable livelihood.

The 18th constitutional amendment passed in 2010, introduced article 25A, which made free and compulsory education a fundamental right for all children aged 5 to 16 years. Under this provision, the state is legally bound to provide free education to all children within this age bracket. This amendment was significant milestone in education policy, ensuring that no child is deprived of learning opportunities due to financial constraints.

Beyond compulsory education, article 37(B) places abroad responsibility on the state, mandating it to take effective measures to ensure universal literacy and make education accessible at all levels. This article highlights the government's duty to promote literacy and expand educational facilities, particularly in rural and underdeveloped areas. The 18th amendment not only enshrined the right to education as a fundamental constitutional provision but also transferred education policy making and implementation responsibility from the federal government to the provinces. This means that each province is now responsible for designing and executing its own education policies based on local needs and priorities. In Balochistan, this responsibility was further institutionalized to Compulsory Education Act of 2014, which provides a detailed legal framework for implementing article 25A at the provincial level. This act outlines the role of government institutions, schools, and communities in ensuring that every child in the province has access to education.

Despite these legal guarantees, challenges remain in implementation due to financial constraints, lack of infrastructure, teacher shortages, and governance issues. Stronger policy execution mechanism, public private collaboration, and community engagements are essential to realize the vision of universal education in the province.

The state of education in Dalbandin, Nok Kundi, Reko Diq mine site and the surrounding areas present a significant challenge, marked by both access and quality issues. Despite the fundamental rights to education, thousands of children remain out of school, while many others dropout due to various social economic and infrastructure constraints. The lack of essential facilities such as drinking water, functional toilets and electricity further exacerbates the learning environment, making it difficult for the students to continue their education.

In addition to infrastructural deficiencies, the deteriorating condition of school buildings poses a serious challenge, with many requiring urgent repairs to ensure a safe and conducive learning environment. Furthermore, the imbalance in the teacher-student ratio significantly weakens the education system's effectiveness.

On one hand, many schools face a severe shortage of qualified teachers, making it difficult to accommodate the growing student population. On the other hand, some schools have sufficient teachers but suffer from extremely low enrollment, leading to inefficient resource utilization. This mismatch between teacher availability and student distribution further exacerbates learning disparities.

Scattered population and small settlements pose another big challenge when it comes to providing education to all children. In the absence of road infrastructure and transportation system, it is hard to image that children of such small settlements can have middle and higher-level education.

The combined impact of these issues: poor infrastructure, inadequate teachers, and low enrollment-results in low literacy rates and poor learning outcomes, ultimately limiting educational and economic opportunities for the youth in these areas. Addressing these challenges requires strategic interventions, including school rehabilitation, optimized teacher deployment, and targeted enrollment campaigns, to ensure that every child has access to quality education in a well-equipped and properly staffed school.

2.1 Status of Education in the Study Area

Population and Housing Census 2023 reveals varying challenges related to literacy and school attendance. The indicators of interest include the percentage of the population literate, the total number of individuals who have "Never Been to School," dropout rates among children aged 5 to 16, and the overall number of "Out of School Children" within the same age group.

2.2.1 Literacy Rate

The literacy rate for individuals 10 years and above demonstrates a significant range across these administrative divisions. All the areas have literacy rate below 30%. Nok Kundi demonstrate slightly better literacy (27%) whereas Chagai tehsil has very low literacy (15%) in whole district.

Literacy rate (10 year and above) of Chagai district from 2005 to 2023 shows a bleak picture. It was 34% in 2005, it rose till 2009 and then decline to again 34% in 2013. The census data shows it to be 21% with female literacy 15% and male literacy 26%. After time travel of 18 years, the literacy rate has declined 13%.

Table 3: Literacy Rate (10 Years and Above), Chagai District

Year	Male	Female	Total
2005	46	18	34
2007	55	19	39
2009	62	19	43
2011	53	13	35
2013	50	14	34
2015	82	39	63
2023	26	15	21

Sources: 2005-2015, PSLMs & 2023,
Population and Housing Census 2023

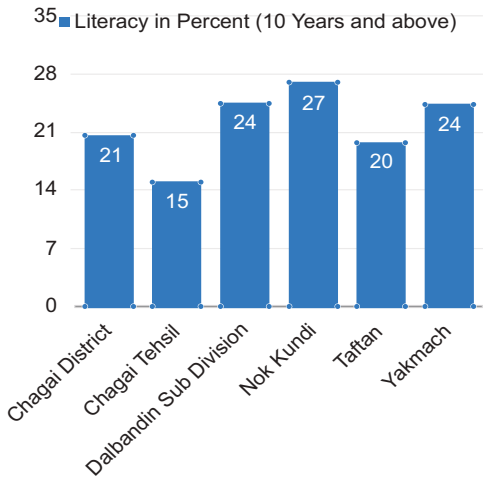


Figure 1: Literacy in Percent (10 Years and Above)

2.2.2 Access Denied: Analyzing Chagai's 55% Never-Schooled Population

Examining the numbers of all individuals who "Never Went to School", Chagai District appears to have significant challenges to school accessibility at 148,808 constituting 55% of the total population. Data of constituent parts of the Chagai district also shows a very large number of individuals who never went to school.

Table below offers statistical view of the situation for two age groups, who never went to schools: all individuals and those who are in the age bracket of 5-16 years.

Table 4: Number and Percent of Individuals Who Never Went to School

Region	Never been to school (All)	Percent	Never to School (5-16)	Percent
Chaghi Tehsil	44,675	61	18,288	25
Dalbandin Sub Division	64,142	52	26,076	21
Nok Kundi	13,219	43	6,384	21
Taftan	12,164	40	5,385	18
Yakmach	14,608	48	6,573	22

Statistics of primary school education completion are very alarming raising questions about schools physical and learning environment, which of course is unable to retain enrolled students till completion of primary education. In Chagai district, the number of individuals who completed primary is only 7,763[2], which is only a small fraction (2.88%) of the total population. Situation in all administrative divisions of Chagai District is almost similar.

[2]National Population and Housing Census 2023

2.2.3 School Infrastructure

The region has a total of 317[3] government schools, including 210 for boys and 65 for girls, reflecting a significant gender imbalance in educational facilities. In terms of school levels, 223 are primary schools, 36 are middle schools, 33 are high schools and only 8 schools offer higher secondary education, highlighting limited opportunities for students to progress to higher education within their locality. List of schools with location data and functional status of each is at Annex-EA.

2.2.4 Enrollment

Further, in all the regions enrollment decreases drastically from primary school to graduation level. Tabulated data below shows a clear enrollment pyramid across all administrative divisions. This trend indicates lack of infrastructure and accessibility issues. On the other hand, very low primary education completion rate leads to comment that even if there was enough infrastructure at middle and higher secondary level, the enrollment might have been low even then. This pattern suggests a significant attrition rate as students' progress through the educational system. The socio-economic status may be one of the reasons besides deficiency of infrastructure and human resource which is preventing children to go to schools and progress in education thereafter.

Table 5: Total Enrollment (Public and Private Educational Institutions) by Education Level

Indicators /Region	Chagai District	Chagai Tehsil	Dalbandin Sub Division	Nok Kundi	Taftan	Yakmach
Enrolment Primary	24,039	5,990	11,290	3,638	1,414	1,707
Enrolment Middle	4,909	873	2,870	806	157	203
Enrolment Matric	1,798	348	998	321	40	91
Sub-total - A	30,746	7211	15158	4765	1611	2001
Enrolment Intermediate	1,574	256	1,014	197	38	69
Enrolment Graduation above	1,048	198	697	114	13	26
Sub-total - B	2,622	454	1711	311	51	95
TOTAL (A + B)	33,368	7665	16869	5076	1662	2096

Source: National Population and Housing Census 2023

The total enrollment across government schools stands at 20,752[4] students, indicating a substantial number of children accessing education. According to Census 2023 data, the total enrollment (from primary to intermediate) is 32,320. This means that 11,568 students (36%) are enrolled in private educational institutions, highlighting the reliance on non-government schools in the region.

The distribution of student enrollment cross primary, middle, and high schools in Nok Kundi, Dalbandin and surrounding areas highlights significant challenges in student retention and progression through different levels of education. The data reveals a sharp decline in enrollment as students move from primary to higher grades, indicating dropout issue and limited access to secondary education.

[3]EMIS, 2023, School Education Department, Balochistan
[4]Ibid

The highest number of students are enrolled in primary schools, with a total enrollment of 11,411 students. This reflects the initial access to education but also suggests that many students start school at the primary level. However, the transition rate from primary to middle school remains a concern, as a large proportion of these students drop out or do not continue beyond primary education due to various social economic and infrastructure barriers.

Middle school enrollment drops significantly to 3100 students, showing a substantial decline in the number of students who continue their education beyond great five. This drop-off highlights several key issues including limited available availability of middle schools in the region. Lack of proper school infrastructure and facilities, discouraging students from continuing their education, Social and economic barriers, especially for girls, who often face restrictions in traveling long distances to attend middle schools

The enrollment at high school level (Grade 9 to 10) is even lower, with only 1509 students enrolled. This steep decline from middle school enrollment further indicates lack of sufficient high schools in the area.

2.2.5 Teaching Staff and Teacher-Student Ratio

The total teaching staff in government schools is 773, including 449 male and 324 female teachers. However, only 761 teachers (446 male, 315 female) are currently serving in 223[5] functional schools, indicating gaps in teacher deployment. The teacher-student stands at 1:31. Some schools face extreme disparities, with the maximum teacher-student ratio reaching 1:213, while some schools have a minimum ratio of 1:3. Many schools are struggling with a severe shortage of teachers, significantly compromising the quality of education and limiting the individual attention students receive. Addressing these imbalances is crucial for improving learning outcomes and ensuring equitable access to education across the region.

2.2.6 Missing Facilities in Schools: A Major Barrier to Quality Education

Beyond numbers, several infrastructural and operational challenges exacerbate the situation. Many schools lack basic facilities such as clean drinking water, functional toilets, and electricity, making it difficult for students to continue their education in a conducive environment. Additionally, several school buildings require urgent repair, and the absence of boundary walls and security measures in some institutions adds to the risk, particularly for girls' education.

The lack of basic facilities in schools across Nok Kundi, Dalbandin and other areas in Chagai district remains a serious challenge, directly impacting student retention and learning outcomes. Despite the presence of 317 government schools, the majority suffers from severe infrastructure deficiencies, making the learning environment highly unsuitable for students.

A staggering 264 schools (83% of total schools) do not have access to clean drinking water, forcing students to either bring water from home or rely on unsafe services. In a region like Chagai, very extreme temperatures prevail, the unavailability of water creates health risks and discomfort, leading to lower attendance and higher dropout rates, particularly among younger children.

Electricity is absent in 279 schools (88% of total schools), meaning that students must study in classroom without fans, lighting or access to electrical teaching aids. Given the scorching temperatures in the region, the lack of electricity creates an uncomfortable and unproductive learning environment.

255 schools (80% of total schools) lack functional toilets, with a severe impact on female's students. The absence of separate and hygienic sanitation facilities discourages many girls from continuing their education beyond the primary level, contributing to already high dropout rate among girls. Schools that do have toilets often suffer from poor maintenance further compounding the issue.

[5]Education Management Information System-EMIS-2023, School Education department

Concerning 175 schools (55% of total schools) lack boundary walls, exposing students to security risks and external disturbances. The absence of boundary walls also discourages parents from sending their children especially girls to school due to safety concerns. Many schools also have damaged buildings, cracked walls and leaking roofs, making them unsafe learning spaces.

The lack of these essential facilities significantly affects students' attendance, retention, and overall academic performance. Schools that failed to provide a safe and resourceful environment struggle with high dropout rates and poor learning outcomes. Without urgent interventions to improve infrastructure and provide necessary facilities, the education crisis in the region will continue to deepen.

2.2.7 Quality of Education

The learning crisis in the target areas is twofold: children struggle with basic reading skills, and even those who succeed within the system, though they represent only a small fraction of the total school-age population, demonstrate low analytical ability.

At the core of this issue lies a fundamental gap in reading, numeracy, and critical thinking skills, which are essential for students to become independent learners. Without strengthening foundational literacy and numeracy, children remain unable to grasp advanced concepts, engage in problem-solving, or apply knowledge effectively in real-world scenarios.

To address this, the education system must shift its focus from mere enrollment to improving learning outcomes, ensuring that every child acquires functional literacy, mathematical competence, and critical thinking skills. This requires teacher training, curriculum enhancement, and innovative learning methodologies, enabling students to develop as self-learners capable of lifelong learning and adaptability.

A comprehensive situation analysis, along with consultations at the district and provincial levels, has highlighted several critical gaps that hinder effective education delivery. These challenges must be tackled through targeted strategies to ensure inclusive, high-quality, and sustainable education reforms.

2.3 Strategic Gaps

Based on the situation analysis and inputs from the participants in the district and provincial workshops, the following strategic gaps have been identified:

2.3.1 High Number of Out-of-School Children

The target areas of the study comprise mainly of rural villages/ settlements. Noticeable urban localities are Dalbandin and Nok Kundi. Alarmingly high number of out-of-school children highlight accessibility issue / lack of required school infrastructure.

The following table presents Out-of-school children (5-16 Year) population projections for 10 years followed by cost of construction of Government primary schools. Though Taftan and Yakmach do not form study area, their statistics have also been given below.

Table 6: Out-of-school Children (5-16 Year) Population Projections, based on the Census 2023 Data

Year/Region	Chagai District	Chagai Tehsil	Dalbandin Sub Division	Nok Kundi	Taftan	Yakmach
2023	68191	19128	29085	7328	5680	6970
2024	70185	19,887	29,782	7,728	5,718	7,082
2025	72236	20,671	30,495	8,150	5,756	7,196
2026	74346	21,481	31,225	8,594	5,795	7,312
2027	76516	22,318	31,972	9,062	5,834	7,429
2028	78748	23,182	32,736	9,555	5,873	7,548
2029	81044	24,075	33,518	10,074	5,912	7,669
2030	83404	24,996	34,319	10,621	5,952	7,791
2031	85832	25,947	35,138	11,198	5,991	7,915
2032	88327	26,928	35,976	11,806	6,031	8,040
2033	90892	27,940	36,833	12,447	6,072	8,167
2034	93529	28,984	37,709	13,124	6,112	8295

2.3.2 Infrastructure Gaps and Non-Functional Schools

The primary education sector in Chagai faces severe infrastructure deficiencies, limiting school access and enrollment capacity. According to Population and Housing Census 2023, the primary school-age population (5-11 years) is 66,047, but only 24,039 children are enrolled. This leaves 42,008 out-of-school children (OOSC), a major challenge for ensuring universal primary education.

Currently, government schools accommodate only 15,220 students (EMIS 2023), while 8,819 students (37%) are enrolled in private schools[6] . Given the existing student distribution, it is assumed that 63% (26,465 students) of the OOSC would need enrollment in government schools, while 37% (15,543 students) would require placement in private schools. However, with only 223 government primary schools operational, each school currently serves an average of 68 students, making it impossible to accommodate the growing demand without significant infrastructure expansion.

While primary school expansion is critical, the lack of middle, high school, and higher education institutions remains a major bottleneck in student progression

EMIS 2023 data shows that 94 schools are non-functional. Given the state of low enrollment, having schools as non-functional refers to various weaknesses in the education system.

[6]Extracted from Population and Housing Census 2023

2.3.3 Lack of Basic Facilities (Water, Electricity, Toilets, Boundary Walls)

The lack of basic facilities in school across Nok Kundi, Dalbandin, and other areas of Chagai is a major barrier to quality education, impacting student attendance, retention and learning outcomes. The data highlights:

- 264 schools (83%) lack clean drinking water
- 279 schools (88%) have no electricity
- 255 schools (80%) lack functional toilet
- 175 schools (55%) lack boundary walls and security measures

2.3.4 Insufficient Institutional Capacity & Policy Execution

This gap was realized years back and Policy Planning and Implementation Unit (PPIU) was established in Education department, Balochistan. Slow progress in education indicators exhibit poor planning, weak implementation and monitoring and ineffective accountability mechanisms. Various education sector indicators show that Education department, with its PPIU, has not been able to translate expenditure into tangible outcomes across Balochistan including Chagai - such as out-of-school children, non-functional schools, and inadequate infrastructure.

2.3.5 Teacher Shortages & Inefficient Deployment

The participants of the workshops highlighted teachers' shortages and teachers' absenteeism. Further, the data presented in the situation analysis section shows that there is room for improvement with regard to deployment of 773 government teachers. There are disparities of teacher-student ratio in different schools, excluding single-teacher schools.

2.3.6 Overlooking Digital Learning & EdTech Integration

Digital learning and EdTech integration face many challenges like lack of access to digital learning tools and technology in schools; limited teacher training on EdTech; unavailability of Internet and electricity in most of the schools; and no structured policy for digital learning implementation.

2.3.7 Lack of Vocational Training, Planning and Execution

The challenges faced by vocational training, planning and execution include lack of structured training programs in the target areas; disconnect between education and labor market needs; limited infrastructure for skill-based learning; and no clear career path phase for student post primary and secondary education.

2.3.8 Financial Sustainability & Budget Constraints

Education infrastructure is increasing gradually. Many new schools, colleges and training institutes have been constructed in the province and many new are in progress. In nominal terms, the education budget of the province has increased nearly eight times between 2009-10 and 2024-25[7]. Similarly, the share of education in the total provincial budget has hovered around 17-18% over the past ten years - this is marginally higher than the 15% average budget share of education across low- and middle-income countries.

Increased spending on education, however, has not translated into improved learning outcomes. The inability of the system to translate expenditure into effective results is explained by weak governance and weak management capacity of the education system in the province. The education system has very limited ability to efficiently and effectively utilize available human, physical and financial resources for achieving it stated goals.

[7]Finance department, Government of Balochistan

In Chagai, for out-of-school population of 72, 236 in 2025, if formal education system of government is adopted then at least 723 schools are required (if each school enrolls 100 students) and at most 1445 schools are needed if each school enrolls 50 students. Cost of constructing one primary school in public sector is about Rs. 25 million. For construction of 100 schools Rs. 18.1 billion will be required. In other case, if enrollment of 50 students per school is considered, Rs. 36.2 billion will be needed. Further, if operational cost is included, this cost will further go up.

In Chagai district including the target areas, from 2014 to 2024, school education and college education received Rs. 344.4 million and Rs. 489.9 million respectively in the development budget (public sector development programs)[8] .

Above tentative estimates and investment made in education in Chagai over 11 years show that Balochistan government does not have resources to construct required number of primary schools to enroll all out-of-school children in district Chagai, including the target areas. Rather, no single entity / agency can.

2.3.9 Lack of Multi-Stakeholder Approach Involving the Government, Private Sector, NGOs, and Community Leaders

The gaps in this domain are: lack of coordination between different stakeholders in education; limited private sector investment in education development; weak community engagement in school governance; and inefficient allocation of resources due to poor stakeholder coordination.

2.3.10 Lack of Data-driven Planning and Monitoring

Based on the desk review, need assessment workshops and thereafter strategic gaps identified, this short to long-term strategies focuses on improving accessibility, infrastructure, teaching quality, and policy execution while integrating data driven planning and multi-stakeholder collaboration. There are not only inter-district disparities but provincial level indicators, literacy rate for instance, show very little improvement over the years. Literacy rate of Balochistan province increased only 2% during 2014-15 to 2019-20[9]. Situation in Chagai is far worse than provincial performance: In 2005 chagai's literacy rate (10 years and above) was 34%[10] and in 2023 it dropped down to 21% (according to the Census data).

In education sector, good amount of data exists. At School Department level, there is Education Management Information System (EMIS). School census is conducted every year and data is fed into EMIS. District level surveys are conducted periodically after certain intervals by Pakistan Bureau of Statistics. These surveys provide data on key education indicators. Censes 2023 also provide data on very important indicators. Education Sector Plan 2021-2026 covered all areas of interventions in education sector. Despite all this data, the planning is not based on data when annual development budget is prepared and funds are allocated to different districts (including Chagai) and projects/program.

[8]Programming Section, Planning and Development department, Balochistan
[9]Pakistan Social and Living Standard Measurement-PSLM surveys of 2014-15 and 2019-20
[10]PSLM 2005

2.4 Short-Term Strategy (1-3 Years)

2.4.1 Out-of-school children:10 Years' Phased Enrollment Strategy

Given the historical progress in the education sector of Chagai district, including the target areas, achieving universal enrollment of out-of-school children within 10 years is a challenging but attainable goal. However, this ambitious target requires significant financial investment, coupled with careful planning, rigorous execution, and continuous monitoring to ensure sustained progress. Without a fundamental restructuring of the existing management approach and financial strategies, achieving this goal will remain out of reach. A systematic, multi-sectoral strategy, backed by effective governance, optimized resource allocation, and strong accountability mechanisms, is essential to ensure that every child in Chagai gains access to quality education within the next decade. The following tentative phase-wise universal enrollment targets are recommended for the short to long term duration.

Table 7: Tentative Phase-Wise Universal Enrollment Targets

Phase	OOSC Targeted	Govt. Schools	BEF/PPP Schools	Home-Based Schools	Literacy Centers	Mobile Schools	Digital Learning
Short-Term (1-3 Years)	30000	5000	6000	9000	5000	2000	3000
Medium-Term (4-7 Years)	30000	7000	7000	6000	4000	2000	4000
Long-Term (8-10 Years)	32000	10000	8000	5000	3000	2000	4000
Total	92000	22000	21000	20000	12000	6000	11000

To achieve above 10 years targets for universal enrollment in the target areas, the following key actions are proposed:

i. Maximizing the use of existing school infrastructure: Many schools in the target areas have low enrollment and underutilized classrooms and some can accommodate more students with minor adjustments. In this regard, the proposed actions are:

- Increase class sizes, where possible, by optimizing teacher - student ratios.
- Introduce second shifts in existing schools (morning & afternoon/evening) to double enrollment capacity.
- Renovate, repurpose abundant or underutilized schools for immediate use.
- Repurpose any available government buildings in the target areas.

Expected impact will be increase in enrollment without heavy infrastructure costs. Faster results can be achieved than waiting for new schools' construction.

ii. Home-based and community schools for scattered populations: This strategy will provide low-cost accessible schooling in a remote and sparsely populated areas. Actions under this strategy are:

- Train literate community members, especially women as teachers.
- Convert a room in homes into classrooms with basic government/CSR/NGOs support (teachers' stipends, books, materials).
- Use multigrade teaching methods where single teacher handles multiple levels.
- Monitor and integrate these schools with formal education system to ensure learning quality.

Expected impact will be low-cost solution for hard-to-reach populations and encourage local ownership and higher female participation. An enrollment target of about 30% (out-of-school children) will be reasonable in the short-term period.

Home-based schools are not permanent solution but a stepping stone to formal schooling. The following phasing is recommended in this regard:

- Short term (1-3 year): establish pilot home-based schools in remote areas.
- Medium term (4-7 year): identify locations where enrollment is growing and transition successful home-based school into small formal schools
- Long term (8-10 year): reduce dependency on home-based schooling as formal schools become more accessible

iii. Public private partnerships for expanding school: This strategy will leverage private sector and NGOs support to build and manage schools in unserved areas. Proposed actions include:

- Expand Balochistan Education Foundation and similar PPP models to open new schools.
- Adopt a performance-based funding model where schools receive support based on attendance and results.
- Encourage CSR funding for school establishment and teacher training.

Expected impact will be to reduce government burden while ensuring accountability and accelerating school expansion in areas needing urgent attention.

iv. Literacy centers to increase literacy levels: Non-formal education with its short courses is the fastest and cost-effective way to increase literacy rate among out-of-school children. If 5,000 out-of-school children are targeted under this 3-year-duration initiative, an estimated budget of Rs. 120 million will be required. Each literacy center costs about Rs. 2.4 million annually, covering salaries, material and training cost of 4 local teachers (provided local teachers are available), excluding infrastructure or rent costs. The proposed actions are:

- Establish community-based literacy center in areas with the high concentration of out of school children.
- Recruit and train local instructors to ensure continuity and cultural relevance in literacy programs.
- Introduce flexible learning hours to accommodate working children.
- Leverage digital and mobile learning to enhance outreach and engagement, especially in remote areas.
- Integrate educational training and life skills education into literacy programs to enhance employability and community impact.

The impact will be rapid improvement in literacy rates at a fraction of the cost of formal schooling and greater accessibility for children. Further, it will usher in economic empowerment by linking literacy education with vocational skills training.

v. Mobile schools and digital learning for remote communities: This approach will bring education to nomadic and highly dispersed population through innovative method with the following proposed actions:

- Deploy mobile schools (tent schools) that move with nomadic groups.
- Introduce solar powered digital learning hub in remote villages without schools.
- Use mobile and radio-based education system for children who cannot attend school daily.
- Assign roving teachers to rotate between scattered settlements.

Impact of this approach will be that education reaches population that would otherwise remain out-of-school: cost effective compared to constructing schools in low density areas.

vi. Key reforms to align non-formal education with the formal system: Since non-formal education (home-based schools, literacy centers, and mobile schools) will play a crucial role in enrollment, it must be aligned with formal education to ensure a smooth transition for students. In this regard, the following measures are envisaged:

- Standardized curriculum and certification
- Develop a bridging curriculum that ensures non-formal students can transition into formal schooling.
- Issue official certificates from literacy centers and home-based schools to allow students to enroll in formal schools at the right grade level.

vii. Flexible learning models and accelerated education

- Introduce accelerated learning programs in non-formal schools so that older children can catch up quickly.
- Allows students multiple entry and exit points between non-formal and formal education.
- Teacher training and integration
- Train non-formal education teachers in basic pedagogy and multi-grade teaching techniques.
- Offer professional pathways for community-based teachers to become formal teachers.
- Community engagement and incentive
- Provide conditional cash incentive to families enrolling children in literacy centers and schools.
- Strengthen school management committee to monitor home-based school and literacy centers.

viii. School selection criteria for facility upgradation and integration of non-formal schools
Given the large number of out-of-school children, school upgradation and non-formal integration should happen in phases.

Table 8: Phase-wise School Selection Criteria, OOSC

Phase	Selection criteria	Priority actions
Phase 1 (1-3 Years)	Areas with high out-of-school populations and severe infrastructure gaps	Pilot home-based schools, literacy centers, and mobile schools
Phase 2 (4-7 Years)	Schools with high demand but poor facilities	Expand classrooms, transition home-based schools into formal schools
Phase 3 (8-10 Years)	Fully developed schools needing modernization	Upgrade to STEM and vocational learning models

2.4.2 Infrastructure Gaps and Non-Functional Schools

The short-term strategy focuses on optimizing existing infrastructure & revitalizing non-functional schools. Key Actions under this strategy are:

- Rehabilitate and Utilize Non-Functional Schools
- Conduct an in-depth assessment of 94 non-functional schools to determine causes of closure (low enrollment, teacher shortages, and infrastructure issues).
- Prioritize the rehabilitation of 100% of non-functional schools within the first two years, focusing on high-need areas.
- Reassign teachers, if so required, from overstaffed schools to revived non-functional schools with available student populations.
- Phased Construction of New Schools Based on Prioritization
- Construct 50 new primary schools in high-demand areas, prioritizing schools with large student populations.
- Ensure all new schools include basic facilities (water, electricity, toilets, and boundary walls).
- Leverage Public-Private Partnerships (PPPs) & Balochistan Education Foundation (BEF)
- Encourage private sector investments to expand private school capacity, reducing government burden.
- Subsidize private school enrollment for OOSC who cannot be accommodated in government schools.
- Community-Based and Home-Based Schools
- Establish community-based home schools in remote areas where school construction is unfeasible.
- Provide training and stipends to educated local individuals to serve as community teachers.

2.4.3 Data-driven planning and monitoring

- To improve education governance, a data-driven approach must be adopted, ensuring EMIS and Census data guide district education budgeting. This will help eliminate political influence and address disparities in school infrastructure, teacher deployment, and resources.
- Defining targets will enable systematic progress tracking. Effective execution requires coordination among Education, Finance, Planning Departments, PPP Authority, development partners, RDMC, and NGOs to align education strategies with broader development goals.
- Expanding Real-Time School Monitoring (RTSM) with UNICEF is essential for tracking learning outcomes, teacher performance, and school facilities. Strengthening PPIU will enhance monitoring, evaluation, and data-driven decision-making, ensuring policy execution is based on evidence rather than assumptions.
- To sustain reforms, policymakers must be trained in data-driven decision-making. Awareness sessions will help them interpret education statistics for planning. A mobile-based reporting app for parents and teachers will increase accountability by allowing direct complaints to education offices.
- Transforming EMIS into a real-time monitoring dashboard is key to better governance. Shifting EMIS from a static repository to a dynamic system will enable data-backed policy adjustments, ensuring accurate, timely decision-making.

While primary and secondary education is prioritized, college and higher education in Chagai remain neglected due to limited access, outdated infrastructure, and financial constraints.

To improve higher education, 2 intermediate and 1 degree college must be upgraded with modern facilities such as science labs, libraries, and digital learning resources. Evening shifts can increase capacity without costly expansions, and integrating colleges into real-time monitoring systems will improve enrollment tracking and faculty availability. Higher education must also align with Chagai's workforce needs, particularly in mining, agriculture, renewable energy, and trade. Public-Private Partnerships (PPPs) can support new colleges, scholarships, and internships, helping students transition from education to employment. Expanding higher education opportunities will remove financial and logistical barriers, contributing to Chagai's long-term development.

Based on these strategic priorities, the following table outlines the responsibilities of key stakeholders in implementing this short-term strategy:

Table 9: Responsibilities of Key Stakeholders (Education: Data Driven Planning & Monitoring)

Action Point	Primary Responsible Entity	Supporting Entities
Introduce policy directives making it mandatory to use EMIS/Census data for district school budget allocations.	Chief Minister's Secretariat, School Education Department, PPIU (Policy Planning & Implementation Unit)	Finance & P&D Departments, RDMC, Development Partners
Ensure that EMIS data and the Census 2023 findings are integrated into the budget allocation process in a way that inter and intra-district disparities are removed systematically.	Chief Minister's Secretariat, School Education Department, Finance & P&D Departments	District Education Offices (DEOs), PPIU, NGOs, Development Partners
Define measurable short, medium, and long-term targets based on data for improvement of the state of education in the target areas.	PPIU, School Education Department, Education Section of P&D Department	RDMC, NGOs, Education Policy Research Units

Implement cross-sector coordination between Education, Finance, and Planning departments, PPP Authority, development partners, RDMC, and NGOs to align strategies for the target areas.	Provincial Government, PPP Authority, RDMC	NGOs, Development Partners, Community Organizations
Strengthen RTSM (Real-Time School Monitoring), conducted in collaboration with UNICEF.	Provincial Education Department, RTSM Team, UNICEF	District Education Offices, NGOs, Community Organizations
Strengthen PPIU, Education Department to enhance data-driven decision-making.	Provincial Education Department, PPIU	Development Partners, RDMC, NGOs
Conduct awareness sessions for policymakers on the importance of data-driven decision-making.	PPIU, Provincial Education Department	Research Institutions, Think Tanks, NGOs, Universities
Introduce mobile-based school reporting apps for parents, teachers, and community members to raise complaints directly to the district education office.	Provincial Education Department, District Education Offices	IT Sector, NGOs, Private Sector EdTech Firms
Transform EMIS into a real-time monitoring dashboard.	Provincial Education Department, PPIU, IT Department	UNICEF, NGOs, Development Partners
Upgrade existing colleges with modern facilities such as science labs, computer labs, libraries, and digital learning resources.	Provincial Higher Education Department	College Administration, PPIU, Development Partners, Private Sector (CSR)
Introduce evening shifts in colleges to increase student capacity without major infrastructure expansion.	Provincial Higher Education Department	College Administration, Academic Boards
Ensure higher education institutions are integrated into data-driven monitoring systems to track enrollment, faculty availability, and academic performance in real-time.	Higher & College Education Department,	Development Partners, Private sector
Strengthen the link between higher education and workforce needs by aligning degree programs with job market demands in mining, agriculture, renewable energy, and trade.	Higher Education Commission (HEC), Higher & College Education Department, Labor Department, B-TVETA	Industry Associations, Vocational Training Institutes, Development Partners, RDMC
Facilitate Public-Private Partnerships (PPPs) for the establishment of new colleges, scholarships, and internship opportunities.	PPP Authority, Higher Education & College Department	Private Sector, NGOs, Corporate Donors

Expand financial aid programs and scholarships for students from underprivileged backgrounds to improve access to higher education.	Higher Education Department, Balochistan Education Endowment Fund (BEEF), RDMC	Private Donors, International Education Aid Programs, NGOs

2.4.4 Insufficient Institutional Capacity & Policy Execution

To address these issues in the short term (1-3 years), the following localized actions are proposed:

i. Revitalize the Role of PPIU with a Focus on District-Level Planning

- Conduct a district-specific performance review of how provincial policies and funds have been executed in Chagai.
- Ensure the PPIU includes a dedicated focal point or liaison for Chagai, tasked with overseeing planning, coordination, and progress review for the district.

ii. Build Capacity of Local Education Offices

- Launch targeted training and mentoring programs for the District Education Officer (DEO) Chagai and their teams, focusing on planning, budgeting, monitoring, and data use.
- Strengthen district-level M&E capacity so local officials can generate real-time insights on school functionality, infrastructure gaps, and service delivery.

iii. Create Stronger Coordination Mechanisms

- Establish a district planning and oversight committee under the DEO, with representation from schools, local government, and the community, to align local needs with provincial planning through the PPIU.
- Conduct quarterly review sessions where Chagai's education performance is shared with the PPIU for corrective action.

iv. Leverage Real-Time Monitoring to Drive Accountability

- Integrate Chagai's RTSM data directly into PPIU dashboards and planning cycles. Use this data to track non-functional schools, low enrollment zones, and facility shortages more effectively.
- Develop localized visual dashboards accessible to the district education team for school-wise monitoring.

v. Set Clear, Measurable Policy Targets for Chagai

- In the short term, define clear district-level targets such as the rehabilitation of a specific number of non-functional schools, provision of missing facilities in a priority list of schools, and improvements in school-level data accuracy and reporting.
- Hold the PPIU accountable for tracking progress against these targets and reporting outcomes to stakeholders.

2.4.5 Financial Sustainability & Budget Constraints

Continuously increasing the recurrent budget, not just in education but across all sectors, without achieving meaningful results is unsustainable. The traditional approach of allocating funds without ensuring efficiency and impact is becoming increasingly unsuitable in a resource-constrained environment. To achieve long-term development goals, there is a pressing need to optimize spending, enhance accountability, and shift towards outcome-driven investments rather than relying on conventional development expenditures that yield limited progress.

Suggested action for prioritizing cost-effective and targeted investments, in the short-term period, are:

- Stop uniform spending increases and prioritize investment in high impact areas. For instance, school accessibility, teacher quality and learning outcomes.
- Expand cost sharing models by engaging private sector and community-based initiatives
- Introduce public private partnerships funding models to reduce reliance on government sources.

- Implement performance-based funding, where schools receive additional resources based on learning outcomes and attendance rates.
- Expand low-cost alternative school model (e.g., home-based schools, community lead literacy centers).

2.4.6 Teacher Shortages & Inefficient Deployment

Key actions to improve the utility of teachers' services are as follows:

1. Redistribute teachers' deployment according to requirement of schools.
2. Recruit 200 new teachers (with gender balance) to improve the teacher-student ratio in crowded schools.
3. Provide teacher training in modern pedagogical techniques, classroom management and subject knowledge enhancement.
4. Strengthen RTSM for effective monitoring and controlling teacher absenteeism.
5. Strengthen PTSMCs (Parent-teacher school management committees)
6. Recruit and train local teachers (reducing dependency on urban teachers unwilling to work in remote areas).
7. Launch a "Rural Teachers Fellowship" to train and deploy young educators in the target areas.
8. Use hybrid training models (online and in-person) to improve teachers' skills cost-effectively.

The impact will be to reduce teacher shortages and improve education quality and ensure long-term retention of teachers in remote areas.

2.4.7 Lack of Basic Facilities (Water, Electricity, Toilets, Boundary Walls)

Given the magnitude of problem, a phased and multi-stakeholder approach is required. Since no single entity can bridge the gap alone, financial contribution must be distributed among government, CSR funding, NGOs and community involvement.

Immediate infrastructure interventions for the short-term duration are:

I. Provision of clean drinking water to 64 schools through:

- Installation of water tanks
- Repair and maintenance of existing non-functional water sources
- Collaboration with NGOs, if any, for water supply solutions

ii. Installation of temporary toilets in 255 schools through:

- Deployment of low-cost prefabricated toilets
- Introducing school-based hygiene awareness programs to ensure proper maintenance

iii. Electricity provision to 279 schools through:

- Installation of solar panels in at least 50% of the schools without electricity
- Prioritizing government schools with large students' populations

iv. Emergency repair of damaged school buildings in most unsafe schools through:

- Fixing cracked wall and leaking roofs
- Repairing doors, windows and ventilation systems

2.4.8 Overlooking Digital Learning & EdTech Integration

The strategic interventions, from short to long-term are presented below:

- Deploy solar powered smart classrooms in at least 50% of secondary schools.
- Provide basic digital devices (tablets, projectors, digital content libraries) in high priority schools.
- Train teacher on integrating tech tools into curriculum through workshops and online training modules.
- Introduced mobile digital learning labs in remote areas where School slack Internet or power.
- Create localized digital learning content in Balochi, Brahui and Urdu for better accessibility

2.4.9 Lack of Vocational Training, Planning and Execution

Short-term (1-3 Years) strategy comprises of introducing basic educational training by:

- Integrating vocational subjects into middle and high school curricula, including carpentry, tailoring, mechanics and agriculture etc.
- Establishing school-based skill centers in partnership with technical training institutes & future local industries.
- Offering short term certification courses in practical skills relevant to local employment needs
- Introducing teacher vocational education methodologies.
- Conducting career counseling and skill assessment program to help students choose vocational pathways.

2.4.10 Roles and Responsibilities of Key Stakeholders

This section outlines the key roles and responsibilities of all relevant actors, providing a clear roadmap for collaboration, accountability, and sustainability in achieving universal primary and secondary education in the region.

A. Strengthening the Role of Government (Provincial and District Level)

To ensure the effective execution of education reforms in the target areas, the provincial and district governments must play a proactive role in policy implementation, budgeting, monitoring, and alternative education models. The Balochistan government should focus on strengthening legislative frameworks to reinforce compulsory education laws, ensuring that enrollment and retention targets set under Article 25A of the Constitution and the Balochistan Compulsory Education Act 2014 are met. Additionally, there is a need to decentralize education planning and budgeting, allowing district education offices (DEOs) to make data-driven decisions regarding school construction, teacher allocation, and infrastructure development. A performance-based funding system should be introduced, linking budget allocations to measurable improvements in enrollment, student learning outcomes, and school infrastructure. Moreover, Real-Time School Monitoring (RTSM) should be expanded to track school performance, ensuring teacher accountability and resource optimization. The government must also prioritize non-formal education models, such as home-based schools and community literacy centers, particularly in scattered and nomadic communities where traditional schooling is not feasible.

B. Enhancing Local Government and Community Participation

Local governments and community leaders serve as the bridge between policymakers and grassroots-level implementation. To improve education governance in Chagai, local governments must actively engage in school oversight, ensuring that resources allocated for education are utilized efficiently. The formation of School-Based Monitoring Committees (SMCs), comprising parents, community elders, and local officials, can enhance school accountability by tracking teacher attendance, monitoring student progress, and identifying urgent infrastructure needs. Community leaders can also play a pivotal role in advocating for girls' education and addressing socio-cultural barriers that prevent school attendance. Furthermore, local governments should support the expansion of alternative schooling models, such as home-based schools, mosque-based literacy centers, and mobile schools, to accommodate children in remote and sparsely populated areas.

C. Expanding Private Sector & CSR Involvement in Education

The private sector and corporate organizations can play a critical role in supporting education through Public-Private Partnerships (PPPs) and Corporate Social Responsibility (CSR) initiatives. A PPP Education Fund should be established to channel private investments into school construction, teacher training programs, and digital learning initiatives. Companies operating in Balochistan's mining, trade, and industrial sectors can contribute by sponsoring smart classrooms, vocational training programs, and scholarship opportunities for students. The private sector should also collaborate with the Balochistan Education Foundation (BEF) to scale up affordable schooling models, ensuring that low-cost, quality education options are available in underprivileged areas. Additionally, telecom and technology firms should be encouraged to provide EdTech solutions, such as mobile-based learning platforms, AI-powered personalized learning tools, and digital libraries, to bridge the technology divide in rural schools.

D. Strengthening the Role of NGOs & International Development Partners

Non-governmental organizations (NGOs) and international development agencies have a proven track record in delivering educational support in resource-constrained environments. Their role should be expanded beyond financial aid to include technical assistance, teacher training, and capacity-building programs. NGOs can collaborate with the provincial government to develop structured training programs for teachers, ensuring pedagogical quality in both formal and non-formal education setups. They can also support infrastructure development, particularly in schools lacking water, electricity, and boundary walls, which directly impact student retention and school safety. Furthermore, NGOs specializing in education innovation can help introduce mobile schools, radio-based learning programs, and solar-powered digital hubs to serve students in remote villages. A structured partnership mechanism should be developed between NGOs, government agencies, and community representatives to ensure coordinated efforts and long-term sustainability.

E. Strengthening Parental and Student Engagement

For any education reform to be successful, active parental and student engagement is essential. Parents must be encouraged to take a more active role in their children's education, ensuring regular attendance and participation. To facilitate this, local governments and community organizations should conduct awareness campaigns that highlight the long-term benefits of education, particularly for girls. Additionally, conditional school incentives, such as school meal programs, stipends for girls, and free learning materials, should be introduced to motivate parents to enroll their children. Peer-learning programs can also be promoted, where older students tutor younger ones, reinforcing learning continuity at home. By fostering a strong partnership between schools, parents, and students, dropout rates can be significantly reduced, and learning outcomes can be improved.

Table 10: Strengthening Parental & Student Engagement-Proposed Responsibilities

Stakeholder	Current role	Newly proposed responsibilities
Government	Policy formulation, budget allocation, School infrastructure development and management	Decentralized planning, alternative education policy
Community	Pointing out education challenges	Community-based monitoring, support for home-based school
Private sector (CSR &PPP)	Funding for education	Public private partnerships, digital learning expansion, vocational education sponsorship
NGOs & international development partners	Teacher training school funding	Technical assistance in school governance, facility development, mobile and AI driven learning expansion
Families & students	Sending children to school	Parental involvement in school monitoring, peer learning initiatives, conditional school incentives

2.5 Medium-Term Strategy (4-7 Years)

2.5.1 Infrastructure gaps and non-functional schools

Developing on the short-term strategy, infrastructure expansion and strengthening secondary education is envisaged for medium term period with the following recommended key Actions:

- Continue Phased Construction of New Schools Based on Prioritization
- Construct 200 new primary schools in high-demand areas, prioritizing schools with large student populations.
- Ensure all new schools smart teaching aids
- Expand Middle & High Schools to Retain Students After Primary
- Upgrade selected primary schools to middle schools in regions with no nearby middle school access.
- Construct at least 20 new middle schools to accommodate growing enrollment.
- Introduce secondary-level classes (9-10) in high-enrollment middle schools instead of constructing separate high schools.
- Infrastructure Investment via Public-Private Partnerships
- Leverage donor agencies and development partners for co-financing school expansion.
- Encourage industries in Chagai (mining, trade) to fund education projects under Corporate Social Responsibility (CSR).

2.5.2 Lack of Data-Driven Planning and Monitoring

Review and strengthen performance targets: conduct medium-term reviews of data driven planning initiatives and

- refine target based on actual progress.
- Enhance cross sectoral collaboration for data integration: strengthen coordination between private sector, education, finance, and planning departments Twins sure successful implementation of education strategies.
- Ensure that education planning align with economic and population growth trends to prevent future school infrastructure shortages.
- Expand AI and predictive analytics for planning and budgeting.
- Strengthen governess and policy continuity.
- Ensure that real time dashboard provides transparent progress reports to civil Society, media, and public stakeholders.

2.5.3 Insufficient Institutional Capacity & Policy Execution

- Decentralize planning authority to District Education Offices (DEOs) by delegating powers to develop and revise annual education action plans aligned with provincial targets.
- Develop and implement a Results-Based Framework (RBF) that links planning, budgeting, and performance monitoring to specific, measurable outcomes (e.g., school functionality, enrollment rates, literacy gains).
- Tie funding allocations to results at both provincial and district levels to encourage accountability and efficiency.
- Institutionalize quarterly performance audits and joint review missions involving PPIU, DEOs, NGOs, and community representatives.
- Expand RTSM into a performance dashboard that includes teacher deployment, attendance, infrastructure status, and learning outcomes.
- Promote the use of geo-tagged, school-level monitoring data for evidence-based decision-making and visualization.
- Establish a Provincial Capacity Building Program for DEOs, Head Teachers, and PPIU staff focusing on education governance, data analytics, program implementation, and financial management.
- Partner with universities and training institutes to offer certificate courses for education officers.
- Create a Provincial-District Coordination Platform for policy feedback, learning exchange, and adaptive planning.

- Align planning and monitoring tools used by PPIU, EMIS, RTSM, and Planning & Development (P&D) Department to create interoperable systems.
- Draft and approve a provincial education governance framework that legally mandates district-level implementation units with clearly assigned mandates.

2.5.4 Financial Sustainability & Budget Constraints

- Diversify funding sources and enhancing physical accountability
- Establish Chagai education development fund (CEDF): pooled financing mechanism with contributions from government, donors and CSR funds.
- Digitalize financial reporting for real time budget monitoring and preventing corruption.
- Incentives private sector investment in education sector in the district.

2.5.5 Lack of basic facilities (water, electricity, toilets, boundary walls)

Scaling up sustainable infrastructure
100% water access coverage through:

- Water pipelines for long-term sustainability
- Establishing public private partnerships for local water supply solutions, wherever possible

Permanent toilet construction in remaining affected schools through:

- Government/NGOs/ private sector collaboration for gender segregated sanitation
- Establishing dedicated sanitation budget at district levels

Expanding solar energy systems to power:

- Lighting, fans and digital learning tools in all remaining schools
- Smart monitoring of solar energy performance to ensure long-term efficiency

2.5.6 Overlooking Digital Learning & EdTech Integration

Expanding digital learning across all schools by:

- Ensuring hundred percent of secondary schools have access to digital learning infrastructure.
- Introducing AI powered adaptive learning platforms to provide personalized learning experiences.
- Expanding Internet connectivity to rural schools through partnerships with telecom companies and NGOs.
- Implementing blended learning models on online plus off-line content to ensure learning continuity
- Develop a district e-learning policy to standardize digital curriculum implementation

2.5.7 Lack of Vocational Training, Planning and Execution

Expanding and standardizing vocational education by:

- Engaging national level vocational training institutes to train the secondary and high schools students of the district.
- Introducing dual learning apprenticeship where students spent part of their education in classroom and part in practical training at partner skill-based businesses/industries.
- Launching digital vocational training programs for students in remote areas
- Expanding government scholarships for educational education to encourage students from low-income backgrounds.
- Creating vocational training partnership with industry store graduates have job opportunities

2.6 Long-Term Strategy (8-10 Years)

2.6.1 Infrastructure gaps

To achieve full enrollment and sustainable educational growth, the following key actions are recommended:

- Complete Remaining Primary School Construction
- Construct the remaining primary schools required to fully eliminate out-of-school children.
- Upgrade more middle schools to high schools, ensuring smooth student transition to secondary education.
- Enhance Vocational & Higher Education Opportunities
- Expand intermediate and degree colleges, ensuring at least one higher education institution in each tehsil.
- Establish vocational training centers linked to local economic sectors (mining, trade, renewable energy).
- Integrate Technology & E-Learning for Sustainability
- Establish smart classrooms, digital libraries, and AI-powered learning tools to bridge the urban-rural education gap.
- Promote solar-powered digital learning hubs in remote areas where infrastructure is limited.

2.6.2 Data-driven planning and monitoring

- Establish of fully autonomous education data and policy unit at Dalbandin.
- Fully decentralized education planning and budgeting to the district level.
- Integrate education planning with workforce development and economic policy.
- Develop and implement AI driven automated decision-making for education planning.

2.6.3 Financial Sustainability & Budget Constraints

- Legislate mandatory multi stakeholder contributions (private sector, NGOs) to education funding.
- Ensure at least 25% of total education financing comes from alternative sources (PPP, CSR, NGOs)
- Develop an education investment strategy linking school funding to regional economic growth.
- Implement an endowment model for long-term education financing.
- Strengthen Illuminati and community engagement to generate funds for school improvements.

2.6.4 Lack of basic facilities (water, electricity, toilets, boundary walls)

- Integration of schools into municipal water supply schemes
- Implementation of rainwater harvesting, wherever feasible, in water scarce areas
- Establishing school-led water maintenance programs
- Advance energy and digital learning integration:
- Expanding solar power systems for computers, digital education and labs
- Connecting schools to hybrid power solutions.

Since no single entity can fill all the gap of missing facilities, the financial burden should be shared among multiple stakeholders. Proposed sharing is presented as under:

Table 11: Proposed Percent Contribution to Finance Missing Facilities in Schools

Stakeholder	Proposed contribution (%)	Key areas of contribution
Government	50%	Primary water and sanitation infrastructure, school repairs, Solar energy systems
Private sector (CSR initiatives)	20%	School infrastructure rehabilitation, technology integration, teacher training, digital learning tools
NGOs and international partners	15%	Water filtration systems, sanitation facilities, teacher training
Community contribution	15%	Donations, volunteer teachers, regular school maintenance, and monitoring

2.6.5 Overlooking Digital Learning & EdTech Integration

- Institutionalizing digital education
- Fully integrate into primary and secondary education across all schools.
- Establish a digital teacher training Institute to ensure continuous professional development.
- Introduce AI driven assessment tool to track student performance and suggest interventions.
- Develop partnerships with leading global tech firms to bring advanced learning tools and methodologies.

2.6.6 Lack of Vocational Training, Planning and Execution

- Integrating educational education into mainstream learning
- Fully integrate educational and academic education, allowing students to transitions smoothly between the two.
- Establish a national vocational qualification framework to standardize training certifications.
- Strengthen industry - academia collaboration to align vocational education with future job market needs.
- Introduce AI and robotics based technical education in high school to prepare students for future industries

2.7Aligning Chagai's Education Sector with SDGs: Bridging Access, Quality, and Employment Readiness

The educational challenges identified in Chagai directly impact Pakistan's ability to achieve Sustainable Development Goals, particularly SDG-4 (Quality Education), aimed at ensuring inclusive and equitable quality education and lifelong learning for all, and SDG-8 (Decent Work and Economic Growth), focused on promoting sustainable economic growth and productive employment. Addressing issues such as high rates of out-of-school children, infrastructure deficiencies, teacher shortages, and low literacy levels in Chagai is critical to meeting specific SDG targets and indicators related to universal education, effective learning environments, and youth employment readiness.

3. Health

Chagai District, home to the strategic Reko Diq mining site, presents a complex health landscape marked by both opportunity and challenge. The district's primary population centers, Dalbandin, Nok Kundi, and surrounding rural settlements, are served by a network of health facilities with generally good geographic accessibility but significant disparities in staffing, functionality, and equipment readiness. While the District Headquarters Hospital in Dalbandin is relatively well-equipped and positioned to serve as a referral center, critical care systems and specialist services remain underdeveloped. This chapter draws on key insights and strategic gaps identified during multi-stakeholder need assessment workshops held in Dalbandin, Nok Kundi, and at the provincial level workshop in Quetta. It presents a phased response framework-short-, medium-, and long-term strategies-to address these gaps and strengthen the health system in the broader Reko Diq impact zone.

3.1Current Health Landscape of Chagai

3.1.1Health-Seeking Behavior and Service Preferences in Chagai District

PSLM (Pakistan Social and Living Standard Measurement 2014-15)[11] survey data shows that Health consultations are primarily conducted at private dispensaries and hospitals in urban areas of Chagai district, accounting for 52.68% of visits, while in rural areas, the percentage drops to 36.63%. Conversely, public hospitals and dispensaries are more utilized in rural areas (49.98%) compared to urban areas (32.72%), indicating higher dependence on government facilities in less developed regions. Rural Health Centers (RHCs) and Basic Health Units (BHUs) play a minor role, with 7.30% of urban and 4.93% of rural consultations occurring at these centers. Additionally, traditional herbalists (Hakeems) serve 7.48% of rural patients, while they have no reported usage in urban areas

3.1.2 Functional Disabilities

In parallel to service utilization, the Population Census 2023 reveals a significant burden of disability and functional limitations across Chagai District, which underscores critical gaps in inclusive healthcare planning. The analysis of disability and functional limitations across Chagai District reveals a significant public health concern that requires targeted interventions. Out of a total population of 269,192, 4,460 individuals are reported as having some form of disability, while a larger group, 18,272 individuals, experience varying degrees of functional limitations. These figures underscore the critical need for inclusive health planning, especially in a geographically vast and sparsely populated region like Chagai, where access to health and social services is already constrained.

Among the types of functional limitations, walking or climbing impairments are the most prevalent, affecting 5,681 individuals district-wide, followed by hearing impairments (4,197) and vision limitations (3,929). These are not just statistics, they reflect real challenges to accessing essential services, including healthcare, education, and employment. The Dalbandin Sub-Division, which accommodates the largest share of the district population, shows the highest burden across almost all categories, including 2,661 individuals facing mobility difficulties and 1,903 with hearing issues. This suggests a pressing need to improve physical accessibility and service readiness in that area.

Meanwhile, Nok Kundi Tehsil, despite having a smaller population (30,625), exhibits a notable share of functional impairments, such as 233 individuals with memory and focus difficulties and nearly 500 with walking limitations. This highlights the importance of ensuring that even the more remote and underpopulated areas are not overlooked in the planning and delivery of disability-related health services.

Cognitive and communication challenges are also prominent across the district. More than 2,800 individuals struggle with memory and focus, while over 2,000 face challenges in verbal or expressive communication. These impairments particularly affect children and the elderly and call for specialized interventions, such as mental health services, speech therapy, and inclusive education programs.

[11]Due to Law-and-order Situation, Chagai's data couldn't be collected during PSLM 2018-19

Table 12: Functional Disabilities

Indicator	Chagai District	Chagai Tehsil	Dalbandin Sub-Division	Nok Kundi Tehsil
Population	269,192	73,482	122,918	30,625
Disability	4,460	977	1,446	273
Functional limitation	18,272	4,875	7,939	1,624
Seeing	3,929	1,112	1,624	306
Hearing	4,197	1,214	1,903	356
Walking/ Climbing	5,681	1,702	2,661	492
Communication	2,029	587	865	156
Memorization/ Focus	2,820	789	1,271	233
Self care etc	1,976	491	798	178

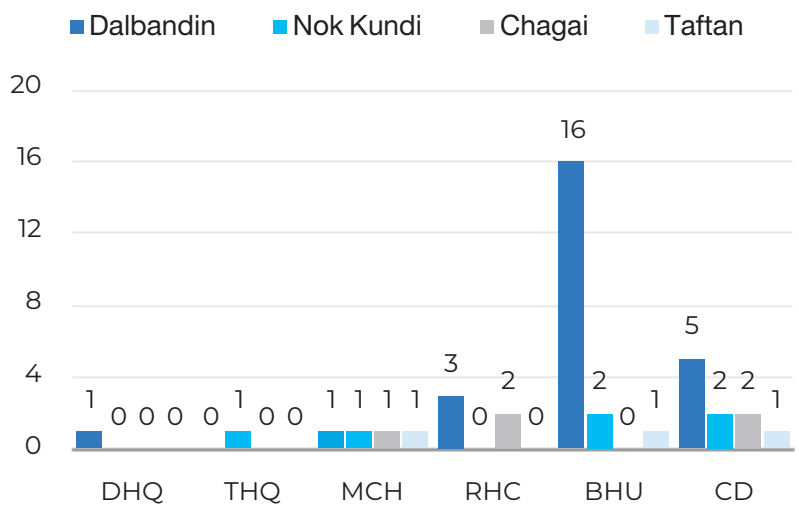
Source: Population & Housing Census 2023

These findings provide the foundation for identifying strategic interventions and service delivery reforms, which are discussed later in this report.

3.1.3 Distribution of Health facilities by Area

Dalbandin, being major population hub, has largest number of health facilities. In most of the target areas Basic Health Units (BHUs), Civil Dispensaries (CDs) and Rural Health Centers (RHCs) are providing health facilities.

Since target areas are mostly rural, 75% of the health facilities are situated in rural areas. All BHUs are being run and managed by PPHI (People's Primary Healthcare Initiative). Rest of the Health facilities are providing services under the umbrella of Department of Health, Government of Balochistan. Bar chart below presents area wise distribution of health facilities.



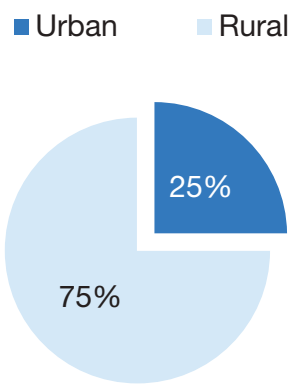


Figure 2: Health Facilities Distribution by Area

The analysis of healthcare facilities across Chagai District highlights a significant variation in service coverage relative to population demand. With 20 Basic Health Units (BHUs), Rural Health Centers (RHCs), 10 Civil Dispensaries (CDs), and a single District Headquarter Hospital (DHQ), the system appears adequate in structure but uneven in population reach in case of tertiary care.

3.1.4 Catchment Area Analysis

Dalbandin Town emerges as the most heavily burdened locality. The DHQ Hospital Prince Fahad Dalbandin serves an overwhelming 135,514 people[12] , making it the single most relied-upon facility in the district. Although the town also hosts RHC Gowanakko and MCH Dalbandin, which serve an additional 7,800 and 3,500 individuals respectively, the concentration of patients at the DHQ indicates a centralized model of care. This centralization creates a bottleneck for services, particularly in the absence of stronger primary care facilities in surrounding UCs that could help absorb the outpatient and general care load.

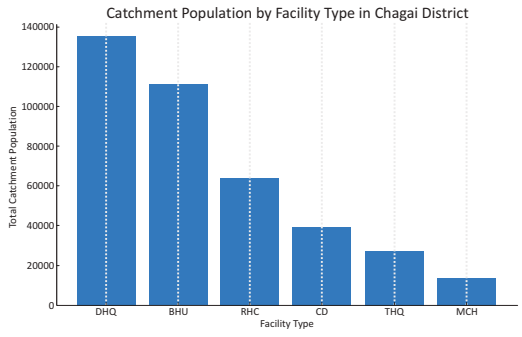


Figure 3: Catchment Population by Facility Type

On the other hand, Padag and Chagai Tehsils reflect a more balanced distribution of healthcare access. In Padag, multiple BHUs and a well-placed RHC (Chiater) collectively serve a population of over 25,000, while Chagai benefits from two RHCs (Amin Abad and Chagai Village), serving 14,283 and 29,433 individuals respectively: complete tabular data in Annex-HA. This tiered structure helps reduce dependency on higher-level hospitals and aligns better with national service delivery standards. The presence of MCH centers in both tehsils further supports maternal and child health services locally.

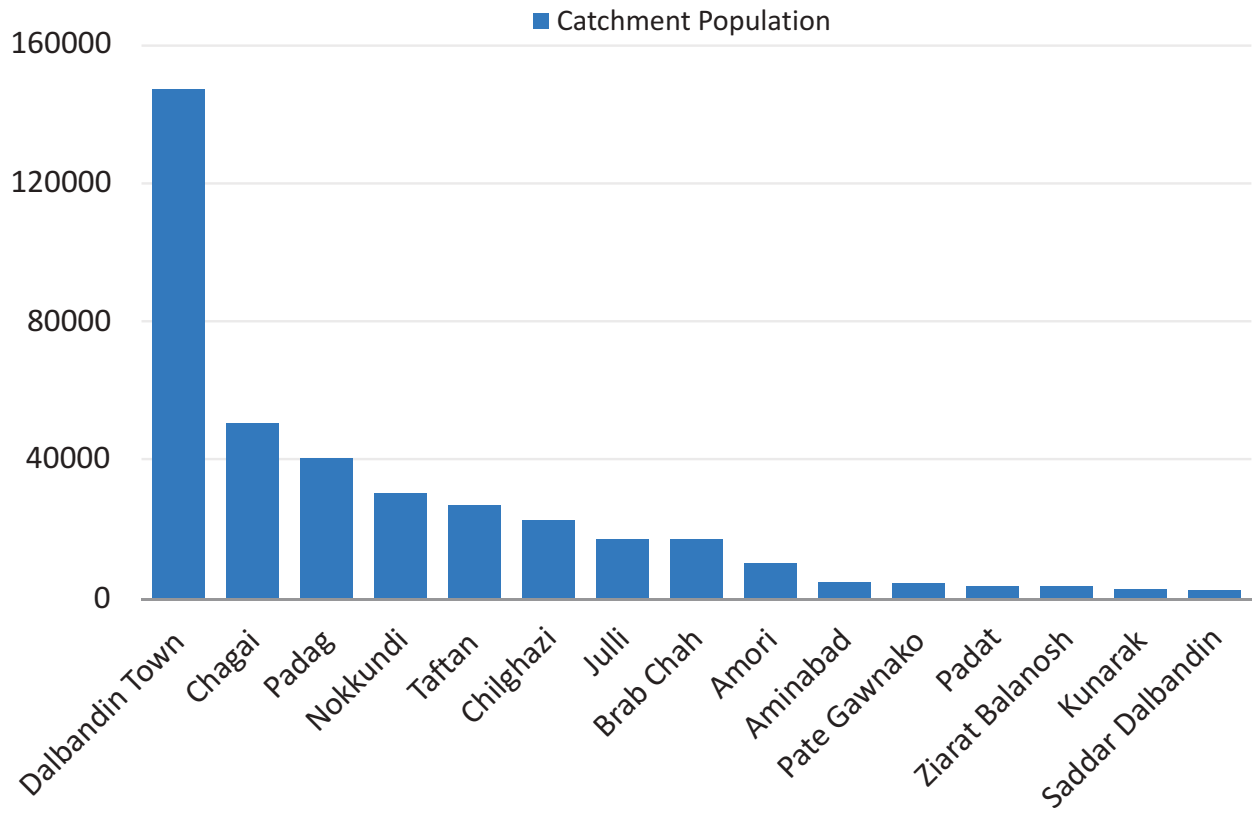


Figure 4: Health Facilities Catchment Population by Area

[12]Source of data: Directorate of Health, Health Department

However, remote areas such as Nok Kundi and Julli are less well-served. Nok Kundi relies heavily on a single THQ hospital catering to 26,821 individuals, supported only by a MCH center and one CD. Similarly, Julli UC has only two BHUs and one CD to serve a dispersed population, raising concerns about access, especially during emergencies or for chronic care. These findings highlight the need for additional mid-tier facilities or mobile outreach services to bridge the service delivery gap.

Significant disparities also exist among BHUs and CDs in terms of their catchment loads. While some BHUs like Taftan (19,645) and Padag (10,324) are serving populations well above the ideal threshold for a BHU (5,000-10,000 people), others like BHU Saleh Karez or BHU Kargoshkan have catchments below 3,000. This suggests the need for a review of both population distribution and facility utilization, possibly leading to reclassification or restructuring of service packages in some locations.

3.1.5 Assessment of Enabling Conditions for Quality Healthcare Delivery

While all evaluated facilities are physically accessible, only 42% of the facilities[13] have access to power, which affects everything from lighting and refrigeration for vaccines to the ability to use essential equipment. Similarly, while 76% of facilities have access to water and 73% offer hand hygiene stations, these figures remain below the thresholds required for safe and hygienic care. More than a third of health facilities lack proper sanitation facilities, further compounding the risk of infection and affecting the dignity and safety of patients and staff.

Communication systems are particularly weak. Only 30% of health facilities reported having access to communication tools such as mobile phones or internet connections, hindering referrals, coordination, and emergency response. Administrative data management is also poor, with just one-third of facilities maintaining birth and death registers, limiting the capacity for civil registration, health planning, and evidence-based interventions.

Waste management practices show moderate compliance, with 55% of facilities practicing waste segregation and having sufficient systems for final disposal of infectious waste. While this represents a step forward, nearly half of the facilities still operate without safe waste handling protocols, increasing exposure risk for healthcare workers and the surrounding community. Furthermore, the availability of cleaning equipment in only 48% of the centers indicates insufficient emphasis on hygiene and facility maintenance. This data indicates that while the network footprint exists, its distribution and functional capacity mostly cover demographic spread.

[13]HeRAMS Balochistan Baseline Report 2021

Table 13: Operational status of the Health System, Chagai

S.No.	Indicator	Percent Result
1	Fully Accessible Health Facilities	100%
2	Health facilities with Access to Power	42%
3	Health facilities with Access to Water	76%
4	Facilities with Functional Hand-Hygiene Facilities	73%
5	Health facilities with Sufficient Final Disposal Methods for Infectious waste	55%
6	Health facilities where Communication Equipment is Available (Mobile phone, Internet, Telephone, Fax and others)	30%
7	Health facilities where cleaning equipment is available	48%
8	Health facilities Practicing Waste Segregation	55%
9	Health facilities with Sanitation Facility (flush/pour-flush toilets)	64%
10	Health facilities where Birth / Death Registers are Available	33%

Source: HeRAMS Balochistan Baseline Report 2021

3.1.6 Proximity Analysis of Health Facilities in Target Areas

An analysis of geographic accessibility to health facilities in key areas of Chagai District reveals generally favorable proximity, based on distance measurements obtained using Google Earth.

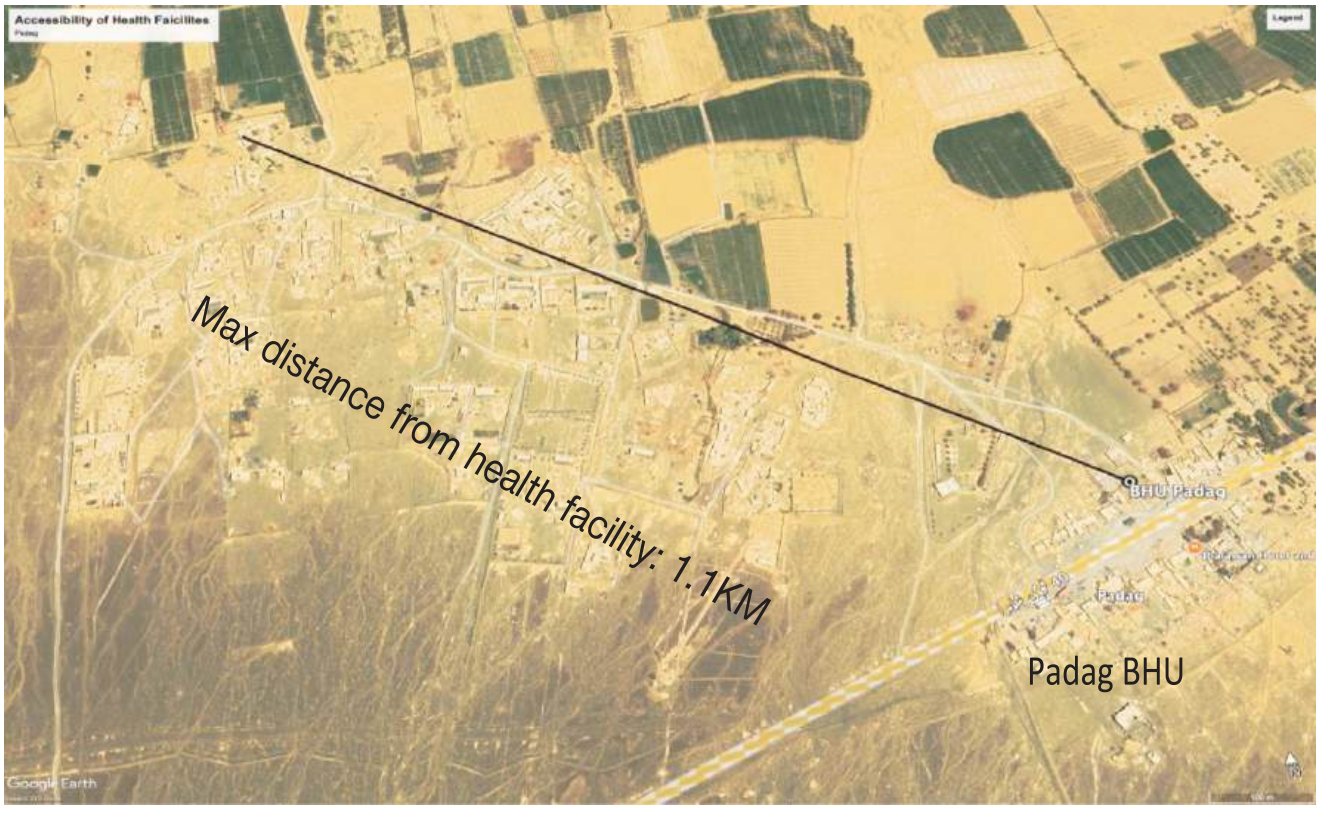


Image 1: Accessibility Distance from Health Facility

In Padag, the maximum aerial distance of a household from the Basic Health Unit (BHU) is just 1.1 kilometers, indicating strong physical access for the local population. Similarly, in Charsar Dilmurad, the distance to the Civil Dispensary is only 0.5 kilometers, suggesting that essential services are well within reach for residents.

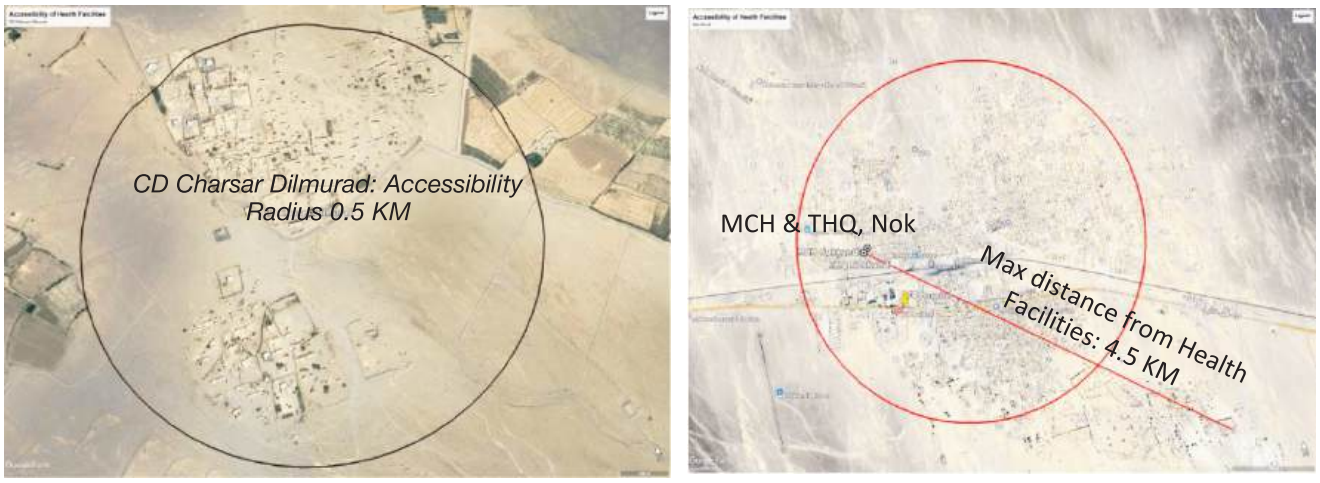


Image 2: Accessibility Radius of Health Facility

In more urbanized settings, such as Dalbandin, the distance to both the District Headquarters Hospital (DHQ) and the Mother and Child Health (MCH) center is approximately 4.1 kilometers in a straight line, and about 6 kilometers by road, which remains within a manageable range for most of the population. In Nok Kundi, the distance from households to the Tehsil Headquarters Hospital (THQ) and the MCH facility is about 4.5 kilometers, reflecting a similar pattern of access. These findings suggest that for many communities in Chagai, health facilities are geographically accessible, and that the key challenges to service utilization are more likely tied to operational functionality, staffing, and availability of services rather than distance alone.

3.1.7 Facility-Level Staffing Analysis and Service Readiness

Reviewing the sanctioned staffing data, maintained by Directorate of Health of the Health department, for Chagai District, the overall numbers point to a concerning but addressable situation. Out of a total of 469 sanctioned posts, only 324 are currently filled, leaving 145 critical positions vacant (Annex-HB). This translates to an approximate vacancy rate of 31%, which poses a substantial challenge to the consistent delivery of health services across the district.

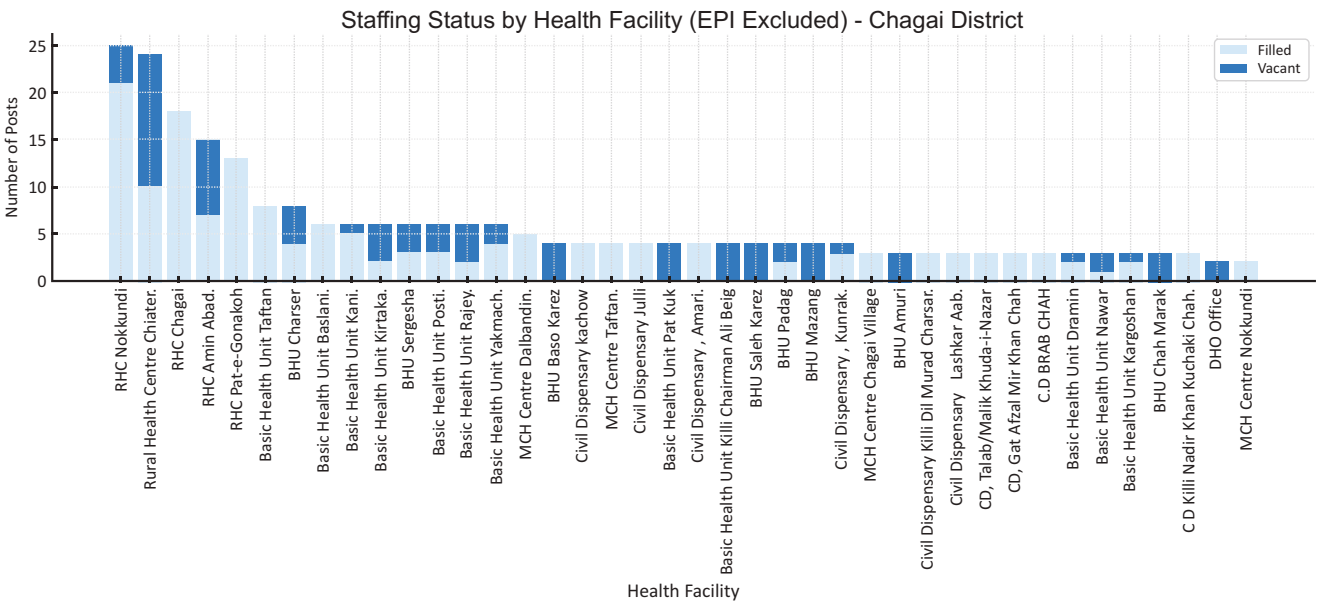


Figure 5: Staffing Status by Health Facility

Based on the facility-wise breakdown of sanctioned health staff in Chagai District, it is evident that staffing distribution and coverage vary significantly across different types and levels of health facilities.
Note: EPI and DHO Office have been excluded from graphical representation (Detail of their staffing position is given in Annex-HC)

At the Basic Health Units (BHUs), which form the cornerstone of primary healthcare delivery, several facilities such as BHU Amuri and BHU Baso Karez have sanctioned positions that remain completely vacant. This is particularly troubling as BHUs are often the first point of contact for rural communities. The absence of staff at these facilities means that catchment populations are either left unattended or pushed to travel long distances for even basic care.

In contrast, Civil Dispensaries (CDs) like CD Gat Afzal Mir Khan Chah, CD Talab/Malik Khuda-i-Nazar, and CD Lashkar Aab show fully filled sanctioned positions, indicating a higher level of operational readiness. While CDs typically offer limited services compared to BHUs or RHCs, the presence of fully staffed facilities enhances their value in addressing outpatient and preventive care needs.

The data (Annex-HB) also implies that smaller, lower-tier facilities may be performing relatively better in terms of staff presence, possibly due to lower sanctioned requirements. However, the overall functionality of the health system cannot rely on dispensaries alone. The challenge remains in larger and more critical health facilities, including Rural Health Centers (RHCs) and the District Headquarters Hospital (DHQ). The data shows that staffing gaps persist across various cadres, with key positions in both clinical and technical roles left unfilled. This undermines the operational capacity of health facilities, affects patient care, and increases the workload on existing staff, often leading to burnout and turnover. Particularly worrying is the vacancy of specialist roles such as senior medical officers, dental surgeons, and drug inspectors, all of which are essential for delivering a wider range of services beyond routine care.

3.1.8 Assessment of Diagnostic and Surgical Equipment Functionality at DHQ Dalbandin

The equipment inventory (Annex-HC) of Prince Fahad Hospital (DHQ Dalbandin) reflects a well-resourced tertiary care facility with a wide range of functional medical equipment essential for both routine and emergency services. The availability of key surgical equipment such as the OT table, OT light, anesthesia machine, suction machine, diathermy, C-section set, and appendectomy set signifies that the hospital is prepared to manage both general and specialized surgeries, including obstetric emergencies.

From a diagnostic standpoint, the presence of CBC machine, X-ray machine, ultrasound machine, microscope, centrifuge, and GeneXpert demonstrates the hospital's capacity to provide timely and accurate diagnostic services, which are critical for early detection and treatment planning. The GeneXpert in particular is crucial for TB diagnosis, reflecting attention to communicable disease control. Laboratory support is further enhanced with a functional micro lab, HB meter, glucometer, and monitor, enabling the facility to conduct essential investigations onsite.

The hospital is also equipped to support neonatal and renal care, with 3 baby incubators and 6 dialysis machines: a significant number, indicating the facility's capability to manage chronic kidney disease and neonatal complications. Maternal care is bolstered by the presence of delivery tables, examination couches, and BP apparatus, while emergency readiness is supported by the availability of oxygen cylinders, wheelchairs, stretchers, and a stand-by generator for power backup.

It is noteworthy, however, that while a ventilator and central oxygen system are present, they are marked as "not installed yet." This is a critical gap, especially in the context of emergency and critical care services. These installations should be prioritized to fully operationalize the hospital's intensive care capabilities.

Overall, Prince Fahad Hospital (DHQ) appears to be well-equipped across surgical, diagnostic, maternal, neonatal, and general outpatient care domains. With nearly all equipment functional and available in adequate numbers, the hospital is structurally ready to serve as a referral hub for the district. Ensuring installation of pending life-saving equipment and routine maintenance will be essential to sustain quality care delivery.

3.2 Strategic Gaps

The comprehensive situation analysis reveals several structural and service delivery challenges that inhibit the performance of the health system in Chagai, particularly in the Reko Diq impact zones of Dalbandin, Nok Kundi, and surrounding rural areas. Despite the presence of an extensive facility network, systemic issues across infrastructure, workforce, governance, and equity in service delivery remain unresolved.

3.2.1 Structural and Infrastructure Deficiencies

While the physical distribution of health facilities is relatively adequate, the functional capacity of these centers is highly variable. A large number of Basic Health Units (BHUs) and Civil Dispensaries (CDs) lack reliable electricity (only 42% coverage), access to clean water (76%), sanitation (64%), and communication tools (30%). Additionally, diagnostic infrastructure is unevenly distributed, with advanced equipment mostly confined to the District Headquarters (DHQ) Hospital in Dalbandin, while peripheral areas have minimal resources for emergency and specialized care. This creates service bottlenecks and compromises quality, especially in areas with high catchment populations and remote terrain.

3.2.2 Service Delivery and Quality Shortcomings

Facility assessments show that 73% of health centers have hand hygiene stations and only 55% practice proper waste disposal and segregation, reflecting inconsistent adherence to infection control protocols. The operational status of many health facilities is hampered by lack of basic maintenance equipment and limited administrative data systems, with only 33% maintaining birth/death registers. Furthermore, there is limited functional integration between different levels of care, leading to overburdened tertiary centers like DHQ Dalbandin (serving 135,000+ people) while nearby primary facilities remain underutilized or under-equipped. The heavy reliance on central facilities reflects both community preferences and gaps in local service confidence.

3.2.3 Human Resource and Capacity Gaps

Human resource shortages represent one of the most acute constraints. Out of 469 sanctioned posts across Chagai, 145 remain vacant-indicating a 31% vacancy rate. BHUs like Amuri and Baso Karez are entirely non-functional due to zero staffing. The distribution of staff is also uneven, with CDs performing better on staffing metrics than BHUs or RHCs, despite the latter having greater responsibilities. Furthermore, specialist and mid-level technical roles (e.g., anesthetists, surgeons, dental surgeons, drug inspectors) remain critically unfilled, particularly at key referral centers. This undermines the health system's ability to provide comprehensive care and reduces staff morale due to overburdened workloads.

3.2.4 Weak Community Engagement and Health Awareness

PSLM data indicates that public utilization of government health services is higher in rural areas (49.98%), but trust and reliance on BHUs and RHCs remain low. Only 4.93% of rural consultations occur at BHUs, and a substantial proportion of the population still consults traditional healers (7.48%). This reflects limited community confidence in government primary care facilities, stemming from irregular availability of staff, medicines, and quality of care. There is also a lack of structured health education or community engagement programs that can enhance health-seeking behaviors, particularly for maternal and child health, disabilities, and communicable diseases.

3.2.5 Governance and Policy Limitations

Despite Chagai's strategic importance and vast geography, there is no district-level health strategy guiding local planning or resource allocation. The potential of public-private partnerships (PPPs) has not been fully tapped, especially in hard-to-reach areas where mobile health units or telemedicine services could bridge access barriers. Fragmentation in service delivery is further worsened by weak monitoring and oversight, contributing to underperformance even in well-resourced facilities.

3.2.6 Supply Chain and Medicine Access Issues

Reliable access to essential medicines remains a persistent problem. Many facilities experience frequent stockouts, and there is no digital system to track inventory or forecast needs. This not only compromises treatment but also discourages patients from using government facilities, further weakening public trust. This is compounded by logistical challenges, budget constraints, black marketing of critical drugs, and weaknesses in procurement systems.

Although the Essential Drug List-EDL (includes 580 medicines categorized into 380 general and 200 specialized drugs) was revised in 2024, reducing the number of listed medicines by 40% to improve cost-effectiveness and focus on indoor patient needs, implementation remains weak. A complete copy of the EDL is provided in **Annex-HD** for reference, enabling better alignment between planning and actual availability at the facility level. There is limited monitoring of adherence to the EDL, particularly in the rational use of antibiotics. Procurement delays, caused by inconsistent models (centralized, decentralized, or mixed), weak planning, and vendor non-compliance, have led to recurring liabilities and frequent stock-outs. Only about 80% of required medicines are typically procured, owing to production shortages and insufficient bids from suppliers. Additionally, a set of approximately 40 life-saving drugs is often unavailable due to black marketing, with limited enforcement by regulatory authorities. Inadequate inventory management, delayed deliveries, and unmonitored pilferage further exacerbate the issue. These disruptions critically affect health service delivery, particularly in remote areas like Chagai, where reliance on public supply systems is high and alternative sources are limited.

3.3 Short-Term Strategy (1-3 Years) - Immediate Interventions

To address the immediate service delivery and operational bottlenecks identified during the assessment, the short-term priority is to restore the minimum functionality of health facilities, improve staffing and supervision, and strengthen basic infrastructure for safe and reliable care. These interventions are designed to be cost-effective, locally implementable, and aligned with the capacity of the existing provincial and district health administration.

Rapid Filling of Critical Vacancies

The immediate deployment of essential clinical and technical staff, including lady medical officers, medical technicians, and dispensers, to underperforming BHUs and RHCs is a top priority. Special attention should be given to facilities with zero filled positions, such as BHU Amuri and BHU Baso Karez. District-level hiring with support from the provincial health department and short-term contracts through PPHI or other partners should be used to close urgent gaps. In line with workshop feedback, a short-term strategy must include emergency recruitment drives, contract-based placements, and provincial-level deputations to fill key clinical roles, especially in Dalbandin, Padag, and Nok Kundi.

Restoration of Non-Functional Facilities

At least five BHUs and several CDs are only partially functional or inactive due to lack of basic human and material resources. A targeted facility revitalization package-including basic furniture, examination equipment, medicines, and hygiene supplies-should be rolled out to ensure at least minimum service readiness in each union council. This can be guided by the HeRAMS baseline indicators.

Installation of Delayed Equipment

Equipment such as ventilators and central oxygen supply systems, already available but not installed at Prince Fahad Hospital, must be made functional within the first year. Fast-tracking procurement of installation services and staff orientation will help operationalize critical care services at the district level.

Essential WASH and Power Improvements

Interventions must prioritize water, sanitation, and electricity in health facilities. Facilities without running water or functional toilets should be connected to local supply lines or provided with low-cost solar-powered bore systems. Solar energy units should be installed in off-grid or partially electrified centers, especially in Nok Kundi and Charsar.

Basic Communication and Reporting Tools

All RHCs, BHUs, and major dispensaries must be equipped with basic communication tools (mobile phones or wireless routers) and trained to submit monthly data reports into DHIS2. This is critical for improving accountability, service coordination, and district-level planning.

Community Health Screening and Disability Detection

Launch low-cost community-based screening days through BHUs and Lady Health Workers (LHWs), focusing on detecting functional impairments in school-aged children, elderly populations, and persons with suspected disabilities. Screening tools should be adapted to local languages and cultural contexts, with referral pathways to the DHQ Hospital for confirmatory diagnosis.

Birth and Death Register Activation

Reinstate or initiate standardized birth and death registers at all RHCs and BHUs. This will improve demographic surveillance and support health indicators tracking in the district. Technical support should be provided by the district health office with data aligned to NADRA and DHIS platforms.

Formation of a District Health Coordination Committee (DHCC)

A functional multi-stakeholder health coordination body should be established, led by the District Health Officer (DHO), to meet quarterly and monitor implementation progress. Members should include health department officials, PPHI, NGOs, community representatives, and Reko Diq-linked corporate partners to ensure transparency, alignment, and resource mobilization.

Restocking and Resupplying Essential Medicines

Participants of the workshops strongly emphasized the irregular and insufficient supply of essential medicines, forcing patients to seek private care or go untreated. The target areas should implement a priority supply plan for key pharmaceuticals, antibiotics, maternal drugs, antipyretics, antihypertensives, and basic surgical kits, based on WHO's essential drugs list. Integration with a simple inventory management tool (manual or DHIS2-linked) can reduce stockouts. Recently, Health department has prepared list (Annex- HE) of essential medicine for primary health care facilities. Supply of essential medicine according to the list will help resolve the issue.

3.4 Medium-Term Strategy (4-7 Years) - Systemic Improvements

Upgradation of Key BHUs to 24/7 Primary Care Centers

Building on the revitalization of Basic Health Units in the short term, BHUs in high-catchment areas such as Padag, Brab Chah, and Amori should be upgraded to Round-the-Clock (24/7) facilities. This would require the provision of additional staff (especially female medical officers and midwives), night-duty accommodation, and enhanced drug stocks. Upgraded BHUs will reduce dependency on DHQ Dalbandin for minor emergencies and maternal care, improving response time and outcomes in remote areas.

Establishment of a District Referral and Transport Network

To strengthen continuity of care across facility levels, the target areas need a formal referral and emergency transport system. This includes equipping key RHCs and the THQ Hospital in Nok Kundi with ambulances linked to a referral hub at DHQ Dalbandin, supported by communication tools, referral protocols, and trained focal persons. This will address delays in emergency care, particularly for obstetric referrals and trauma cases from distant union councils.

Development of a Mid-Level Health Workforce Cadre

Given the long-standing challenge of specialist shortages, target areas should develop a strategy for training and retaining mid-level professionals-such as anesthesia technicians, surgical assistants, and community-based rehab workers. This cadre can be deployed across RHCs and THQ hospitals to extend the scope of services, particularly in maternal and surgical care. Partnerships with nursing and paramedical institutes in Quetta or nearby districts may be leveraged for this.

Integration of Disability and Rehabilitation Services

With over 18,000 individuals in Chagai experiencing some form of functional limitation, it is essential to move beyond one-time screenings and establish institutional disability support services. This includes creating a Disability & Rehabilitation Unit at DHQ Dalbandin and gradually expanding to THQ Nok Kundi and RHC Chagai. Services should include physiotherapy, basic assistive device distribution, and referral to tertiary facilities in Quetta for complex cases.

District-Level Health Information Management Strengthening

To enable data-driven decision-making, the provincial government should invest in strengthening its District Health Information System (DHIS). This includes expanding reporting coverage to 100% of facilities, digitizing registers, and training staff in data use for local planning. A dedicated Monitoring & Evaluation (M&E) Unit should be formed within the DHO office with support from provincial MIS staff and partners.

Public Health Education and Community Engagement Strategy

Community trust in government health services remains low, particularly for primary care. The district should design and implement a community health engagement strategy, using Lady Health Workers (LHWs), religious leaders, teachers, and radio channels to increase awareness on safe maternal practices, disability inclusion, hygiene, and rational medicine use. This effort should be sustained and embedded within BHU-level outreach programs.

Institutionalize Facility Quality Audits

A medium-term goal should be the regular assessment of facility performance, using tools such as the WHO Service Availability and Readiness Assessment (SARA) or HeRAMS (Health Resources Availability Mapping System) indicators. Results should inform quarterly planning and budgeting at district level and be reported to the Provincial Health Directorate.

These interventions aim to consolidate early gains, embed them into local health governance systems, and expand the range and quality of services available to the population in and around the Reko Diq mining zone. They also create a solid foundation for longer-term investments in specialist care, hospital infrastructure, and public-private partnerships.

3.5 Long-Term Strategy (8-12 Years) - Sustainable Transformation

Establishment of a Multi-Specialty Teaching Hospital in Dalbandin

As the population around Dalbandin grows due to mining-related migration and urbanization, there is a strong justification for developing a multi-specialty teaching hospital at the DHQ level. This facility would provide advanced diagnostic and treatment services, emergency care, ICU, surgical specialties, and pediatric and maternal sub-specialties. Affiliation with a medical or nursing college would help build a locally sustained health workforce pipeline, reducing reliance on external postings.

Development of a Chagai Health Workforce Training Institute

To address long-term workforce sustainability, a district-level Health Training Institute should be established to train paramedics, nurses, midwives, lab technicians, and rehabilitation workers. Located in Dalbandin or Nok Kundi, this institution would provide context-specific training for the district's unique health challenges, and ensure continued supply of mid- and lower-cadre staff to rural areas.

Health Emergency Preparedness and Resilience System

Chagai's geographical isolation and harsh terrain necessitate a robust health emergency and disaster response system. This should include: (a) a fully functional emergency operations center (EOC), (b) mobile medical units, (c) a disaster stockpile and cold chain system, and (d) integrated disease surveillance mechanisms. These systems must be embedded within the DHO structure and tested through simulation exercises regularly.

Public-Private Partnership (PPP) Framework for Specialized Care

To address the anticipated demand for high-end diagnostic and referral services, a PPP policy framework should be introduced to contract private providers for CT scan, dialysis, and non-communicable disease (NCD) management in Nok Kundi and Dalbandin. This model will help offset capital costs while ensuring services reach underserved populations. Models used in other districts (e.g., Sehat Card empanelment or NGO-run diagnostics) can be adapted.

Digital Health Integration and Telemedicine Hubs

To address distance barriers and specialist shortages, the district should invest in digital health infrastructure, including telemedicine hubs at DHQ Dalbandin and THQ Nok Kundi. These hubs would be linked to Quetta and national referral centers for consultations, diagnostics, and remote training. E-prescriptions, electronic medical records, and remote follow-up care could drastically improve continuity of care and reduce patient travel burden.

Institutionalization of Disability-Inclusive Health Systems

Long-term investment should go into creating a fully integrated disability-inclusive health system, including accessible infrastructure, routine disability screening, mental health services, community-based rehab networks, and integration of disability data into health planning. Chagai, with study target areas, can serve as a model district for inclusive health in Balochistan.

Universal Health Coverage (UHC) Financing and Insurance Models

Finally, the study target areas should transition toward a universal health coverage model, piloting community-based insurance or public sector health financing schemes to ensure equity in access. This may include health cards for chronic disease patients, conditional cash transfers for maternal care, or performance-based financing for rural health facilities.

These long-term interventions aim to transform the target areas from a service-deprived area into a district-level health hub, capable of withstanding demographic shifts and external shocks. They are also aligned with national health goals under Pakistan's Universal Health Coverage (UHC) agenda and the Sustainable Development Goals (SDGs).

3.6 Linking Chagai's Health System Challenges with SDGs

Sustainable Development Goal (SDG) 3: "Good Health and Well-being," specifically addressing targets such as reducing maternal mortality (Target 3.1), ending preventable deaths of newborns and children under five (Target 3.2), ensuring universal health coverage and access to quality essential healthcare services (Target 3.8), and substantially increasing health financing and workforce (Target 3.c). Indicators relevant to this assessment include maternal and neonatal mortality rates, proportion of births attended by skilled health personnel, coverage of essential health services, and the density and distribution of healthcare workers. Addressing infrastructure, human resource gaps, service delivery quality, community engagement, medicine access, and governance challenges outlined in the situation analysis are pivotal for making significant progress towards achieving these global health targets in Chagai.

4. Drinking Water

Water availability, accessibility, and quality are central to the well-being, livelihoods, and sustainable development of communities in Balochistan's desert belt. In the context of Nok Kundi, Dalbandin, and the Reko Diq mine site and its surrounding areas, water emerges not just as a basic necessity but as a critical determinant of public health, economic viability, and social stability. Despite high reported access to improved water sources in official statistics, many communities continue to experience water scarcity, unreliable supply, poor quality, and infrastructure gaps. These challenges are compounded by climatic variability, population migration, and the rising demand linked to large-scale mining activities. This chapter provides a detailed assessment of the current water supply landscape, identifies emerging risks, and outlines short-, medium-, and long-term strategies to achieve sustainable and climate-resilient water security.

4.1 Assessing the Water Landscape

According to the Population and Housing Census (2023), the reported access to improved drinking water sources appears relatively high in all three locations under study: Chagai (88.56%), Dalbandin (88.71%), and Nok Kundi (90.70%)-Annex-WA. While these figures suggest widespread coverage, it is important to emphasize that access does not automatically translate into sufficiency. Having a connection to a water source, whether a tap, well, or tanker, does not guarantee that the water is available in adequate quantity, reliable in supply, or safe for consumption.

This gap becomes evident when examining usage patterns. A significant proportion of households in all three areas continue to rely on external water sources, with 55.52% in Chagai, 55.95% in Dalbandin, and 47.50% in Nok Kundi reporting the use of sources located outside their homes. This reliance points to limitations in the household-level water supply infrastructure, and likely reflects both distribution challenges and service irregularity.

4.1.1 Source Type and Distribution Challenges

Primary water sources vary across the regions. Tap water is used by 28.70% of households in Chagai, 37.30% in Dalbandin, and 35.94% in Nok Kundi. However, a large share of the population depends on dug wells, with reliance reaching 44.64% in Nok Kundi. These sources, while vital, often suffer from water quality issues and seasonal variability.

4.1.2 Gaps in Water Quality Infrastructure

The Census also highlights a major service gap in water quality management. Filtration plants are virtually absent, and bottled water consumption remains negligible, which may reflect a combination of affordability barriers, logistical constraints, or lack of consumer trust and awareness. This underscores the urgent need to address both the quality and sufficiency of drinking water alongside expanding access.

Image 3: Distribution of Watering Points / WSS
Source: Government Innovation Lab, University of Balochistan

As part of a broader effort to assess drinking water availability and infrastructure coverage in arid regions of Balochistan, the Government Innovation Lab at the University of Balochistan (UoB) conducted a comprehensive geospatial mapping exercise of existing tube wells and associated water supply assets. The dataset compiled through this exercise includes 286 distinct water infrastructure points (Annex-WB), covering various union councils and settlements across the Chagai region, including Dalbandin and peripheral areas. This mapping by the Government Innovation Lab is a vital step toward evidence-based water resource planning in one of the most water-scarce regions of Pakistan. It provides a visual and analytical foundation for:

- Identifying priority areas for infrastructure expansion or rehabilitation.
- Assessing the feasibility of alternative water sources like Chehtar (60 km from Dalbandin) or the suitability of interventions such as RO treatment units for low-quality sources like Laghab.
- Evaluating the viability of renewable energy integration (solar/wind) in operating tube wells and booster stations, especially in off-grid or diesel-dependent zones.
- Supporting community-centric planning by highlighting mismatches between asset locations and demand hotspots, especially in the context of population shifts due to large-scale projects like Reko Diq.

The heatmap of functional tube wells shows a relatively strong clustering around key populated areas, particularly in Padag, Saddar Dalbandin, and adjoining settlements. These hotspots reflect locations where water supply infrastructure is active and supporting local communities. The density of red zones indicates areas with a higher concentration of working infrastructure, potentially linked to recent investments under public sector development programs. However, the map also reveals large geographic gaps, particularly in remote zones, suggesting that many communities may remain underserved or dependent on tanker-based water delivery.

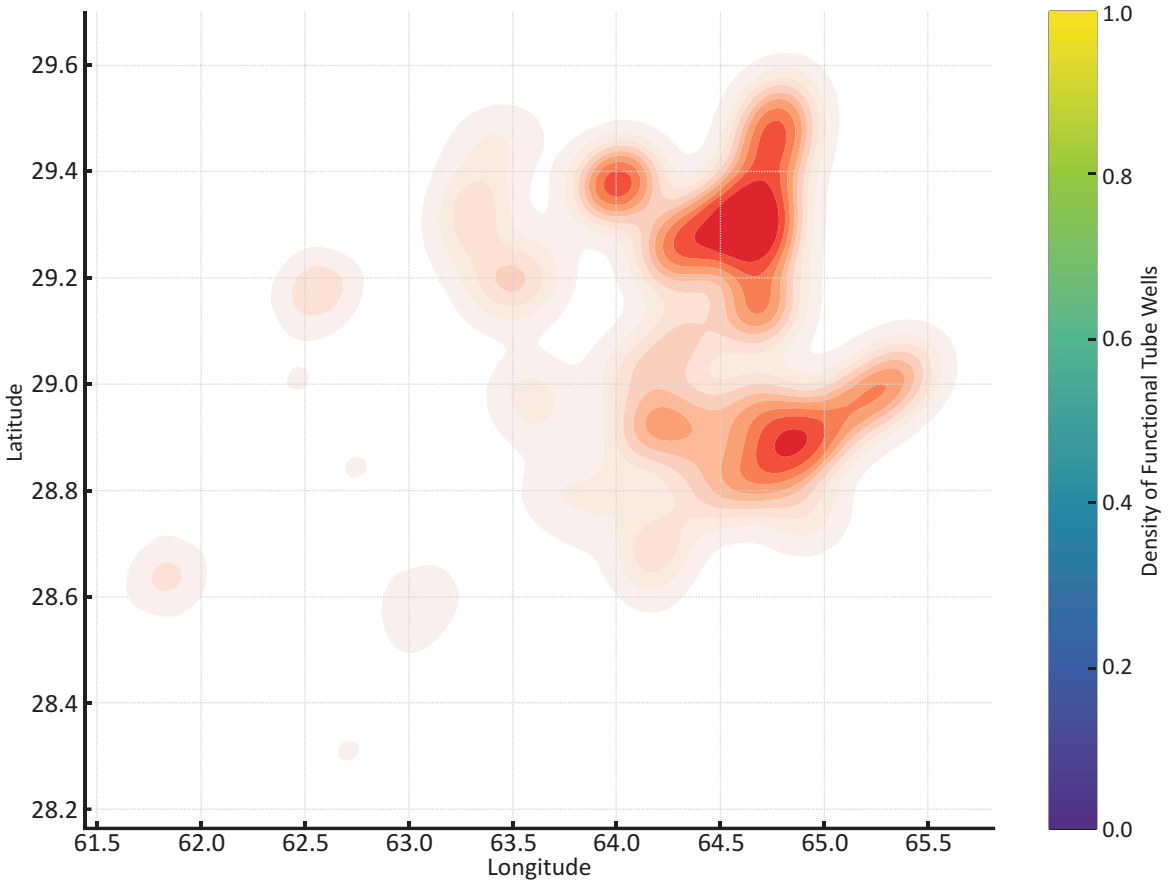


Figure 6: Heatmap of Functional Tube Wells / Water Supplies

Note: Red zones indicate high-density clusters of operational tube wells, primarily around Dalbandin and Padag, reflecting active service areas.

In contrast, the heatmap of non-functional tube wells highlights several scattered zones where infrastructure exists but is not operational. These blue-shaded clusters indicate infrastructure decay, groundwater depletion, energy shortfalls, or mechanical failures. While these non-functional assets are less densely clustered, their presence in peripheral or sparsely populated areas may indicate higher vulnerability, as residents in these locations often lack alternative water sources. In some cases, these may represent abandoned or poorly maintained water schemes that require rehabilitation or reassessment.

Note: Blue clusters show locations of non-functional tube wells, pointing to areas where infrastructure exists but is currently inactive or deteriorating.

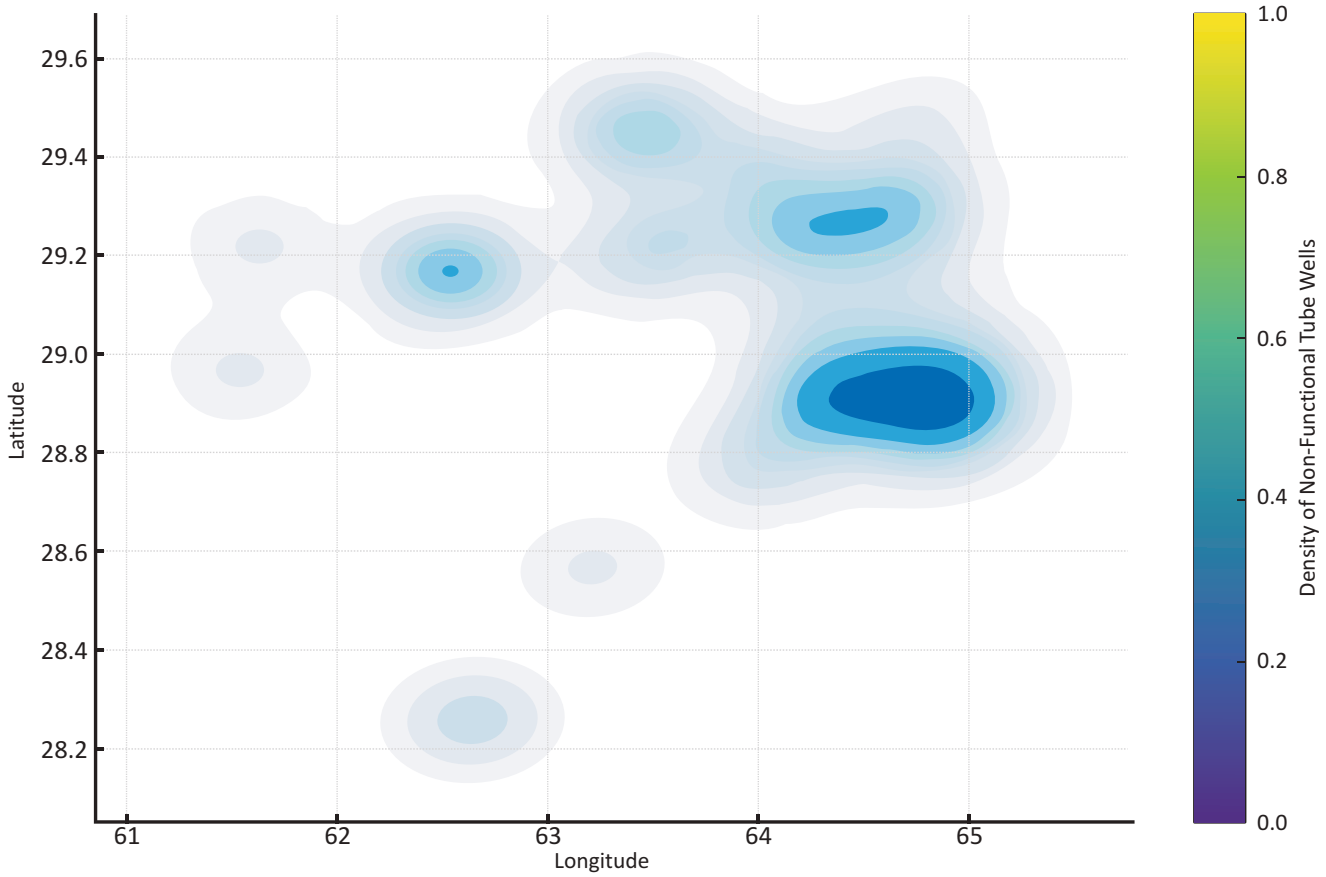


Figure 7: Heatmap of Non-functional Tube Wells / Water Supplies

When viewed together, the two heatmaps illustrate an imbalance in service coverage and operational continuity. Functional tube wells dominate more accessible or developed zones, while non-functional wells are more frequent in outlying or geologically stressed areas. This visual evidence supports the case for:

- Prioritized repair and rehabilitation of non-functional assets
- Strategic siting of new schemes in unserved zones
- Integration of renewable energy systems (solar, wind) to reduce diesel-dependence and downtime
- Deployment of water quality testing and treatment in areas with potential but non-potable underground sources

4.1.3 Main Sources of Fresh Water in Nok Kundi

The water supply situation in Nok Kundi, Balochistan presents a complex and increasingly urgent challenge, particularly in light of the region's harsh arid environment and its growing population due to recent developments such as the Reko Diq mining project. Currently, drinking water is supplied to the town through two major water supply schemes at Bootak and Gut, located approximately 75 km and 65 km away, respectively. These schemes supply around 300,000 gallons of water per day on a rotational basis to surrounding villages. However, the system faces significant operational challenges. In particular, the pipeline of the Gut water supply scheme has been illegally punctured near residential areas, compromising the integrity of the system. In response, a new 5-kilometer bypass pipeline is being laid under the Provincial PSDP program to protect the infrastructure and restore uninterrupted flow.

Each of the three water boosting stations in the Gut system operates with a 40 HP pump powered by 65 KVA diesel generators, making the system heavily reliant on fossil fuels. This reliance not only increases operational costs but also adds risk due to fuel price fluctuations and availability issues. While the primary water sources at boutique and Gut benefit from solar-powered submersible pumps, the booster stations remain a weak point in terms of sustainable energy use. Notably, there is a nearby QESCO electricity transmission line, and although the demand note has been paid, no connection has been established, representing a lost opportunity for renewable or hybrid power integration.

Adding to the challenge is the fact that underground water within a 65 km radius of Nok Kundi is reportedly not drinkable, as confirmed by the PHE Department. This limits the potential for developing new local water sources and emphasizes the importance of efficient use and protection of existing infrastructure. Moreover, the town depends on water tankers provided by the Public Health Engineering (PHE) Department, which distribute water free of cost to areas without a pipeline network, including for law enforcement use. There is growing recognition of the need for containerized reverse osmosis (RO) treatment plants to make brackish water sources usable, especially in outlying and underserved areas.

The demand side of the water equation is also under strain. Population growth, partly driven by migration linked to the Reko Diq project, is increasing the burden on an already limited supply system. Compounding this issue is the omission of livestock water needs in official demand projections, despite the area's dependence on animal husbandry. Financial sustainability is another concern; although water charges are fixed at Rs. 150 per month per household, there is widespread non-payment, undermining the revenue base of the PHE Department and making it difficult to maintain or upgrade infrastructure.

4.1.4 Underground Water Quality Analysis and Implications for Livelihoods and Ecosystem Health, Nok Kundi

Two samples of underground water were taken from Nok Kundi (Gharibabad and Zora-abad) and tested in lab of Q-WASA in Quetta. Results in Annex-WC, Annex-WD. Analysis of the results is as follows.

The water quality data from two tested samples reveal a mixed picture of compliance with international standards, particularly those prescribed by the World Health Organization (WHO) and the European Community (EC). While certain parameters fall within safe limits, several key indicators significantly exceed permissible thresholds, signaling potential risks for human health, agriculture, and ecosystem sustainability.

Key Exceedances and Health/Ecological Risks are:
Turbidity: Gharibabad's sample recorded turbidity of 17.8 NTU and Sample from Zorabad recorded 7.2 NTU, both of which exceed the WHO limit of 5 NTU. High turbidity may harbor pathogens and interfere with disinfection processes, posing a risk for drinking and domestic use.

Total Dissolved Solids (TDS): The TDS level in Gharibabad's sample is 1810 mg/l, far above the WHO limit of 1000 mg/l. Such high concentrations impact taste, agriculture productivity, and may lead to long-term health issues with continuous exposure.

Sodium: Gharibabad's sample contains 410 mg/l, exceeding the WHO limit (200 mg/l). Elevated sodium levels may worsen hypertension, and limit water usability for irrigation due to salinity-related crop stress.

Hardness, Chloride, Sulfate: All show elevated values in Gharibabad's sample (e.g., Hardness = 780 mg/l vs permissible 500 mg/l), which affects taste, plumbing infrastructure, and long-term health.

Total Coliforms: Present in both samples, with Gharibabad's sample showing 15 CFU/100 ml and Sample 2 at 11 CFU/100 ml, indicating biological contamination and a threat of gastrointestinal diseases. However, E. coli was absent, which is a relatively positive indicator.

Comparative Observations

- Zorabad's sample is generally safer than Gharibabad's sample, with fewer parameters exceeding limits, possibly due to better source protection or treatment practices.
- The overall pH levels in both samples are within WHO's acceptable range (6.5-8.5), which supports basic water usability but doesn't offset the issues with other elevated parameters.

Implications for Livelihood Planning

1. Drinking Water Safety: Contaminated water poses a serious threat to public health, especially in schools, hospitals, and areas with children and the elderly. This necessitates the integration of point-of-use filtration or chlorination strategies.
2. Agricultural Impact: Elevated salinity and hardness can reduce crop yields, especially in water-sensitive crops. Promoting salt-tolerant varieties and soil salinity management practices will be essential.
3. Livestock Health: Animals are equally vulnerable to water quality stress, particularly from sulfates and high TDS. This could affect livestock productivity, requiring alternate water sources or treatment before use.
4. Eco-restoration Efforts: High TDS and sodium content make afforestation and plantation drives more difficult, as only halophytic or highly drought-tolerant species can survive. Hence, afforestation planning must integrate soil and water suitability criteria.

4.1.5 Water Supply System in Dalbandin

The water supply system for Dalbandin, located in the arid Chagai District of Balochistan, presents both operational stability and future development potential, although certain constraints persist. At present, the town is primarily supplied water from Sia Jungle, which is approximately 10 kilometers away. This proximity provides Dalbandin with a relatively more efficient and manageable water supply chain compared to more remote towns like Nok Kundi. Water from Sia Jungle is distributed on a rotational basis to various parts of the town and surrounding settlements, indicating that while the infrastructure is functional, the demand may exceed consistent supply capacity at times.

The water supply system includes nine functional tube wells that collectively provide 500,000 to 600,000 gallons of water per day. This supply has proven sufficient for the existing population base but may need augmentation to account for future demand, especially in light of climate variability, urban expansion, and seasonal stresses. Encouragingly, the Public Sector Development Program (PSDP) is actively involved in strengthening this existing system, which suggests that Dalbandin's core infrastructure is receiving institutional support and is recognized as a development priority.

In addition to the main system, a supplementary water supply scheme is being developed at Pizhoee, also under PSDP funding. This scheme is projected to provide between 150,000 to 200,000 gallons per day, further diversifying Dalbandin's water source base and potentially improving supply resilience during periods of stress on the main network. The expansion into new sources reflects a proactive approach to building redundancy and flexibility into the system.

However, not all identified water sources are immediately viable. For example, Laghab has been flagged as a potential water source, but its water quality has been found to be unsuitable for drinking, limiting its immediate utility. Meanwhile, Chehtar, located about 60 kilometers away, holds significant development potential as a

supplementary or backup source. However, its integration into the supply system requires a detailed feasibility study to assess technical viability, cost implications, water quality, and environmental impact. Such a study would also need to evaluate the potential for renewable energy integration (solar/wind) to power extraction and transmission systems, given the energy challenges typical to the region.

In summary, Dalbandin is comparatively well-positioned in terms of water access, with a reasonably short distance to its primary source and multiple ongoing development initiatives under PSDP. Yet, there remains a critical need to expand and diversify the water supply system to accommodate future demand and ensure resilience. Priority actions should include feasibility assessments for Chehtar, exploration of treatment options for Laghab, and integration of renewable energy solutions to power remote pumping stations. Additionally, a comprehensive water quality monitoring program and a demand-side management plan-potentially incorporating community participation and better usage tracking-would further enhance the long-term sustainability of water provisioning in Dalbandin.

Given these challenges, several strategic interventions are urgently needed. These include upgrading booster stations to operate on solar or wind energy, resolving the QESCO connection issue to reduce diesel dependency, and installing containerized RO plants for localized treatment. Additionally, livestock should be included in future water demand calculations, and community-based governance models could help improve compliance with user fee collections. Finally, protective measures should be taken to secure water pipelines from tampering, such as rerouting or encasing them through protected corridors. Without such interventions, Nok Kundi risks facing a critical water security crisis in the near future.

4.1.6 Projected Water Demand Estimates for Nok Kundi and Dalbandin (2023-2034)

The projected water demand estimates for Nok Kundi and Dalbandin provide important insights into the scale of future drinking water needs in these arid towns. Using population data from the 2023 Census and extending it to 2034, water demand has been calculated under three consumption scenarios-low-end (10 gallons/person/day), mid-range (20 gallons/person/day), and high-end (30 gallons/person/day)-to capture a range of planning possibilities.

For the year 2023, Nok Kundi's daily water demand is estimated at approximately 612,500 gallons under the mid-range usage scenario, while Dalbandin's demand is substantially higher at 2,458,360 gallons per day. These figures reflect the current supply burden on existing water infrastructure. At the low-end consumption level, the demand reduces to 306,250 gallons for Nok Kundi and 1,229,180 gallons for Dalbandin, which could serve as a baseline for emergency or minimal service level planning. However, under high-end consumption projections, which assume improved access, lifestyle upgrades, and full population coverage, the demand escalates to 918,750 gallons/day in Nok Kundi and 3,687,540 gallons/day in Dalbandin.

Looking ahead to 2034, with expected population growth, particularly in Nok Kundi due to the influx linked to the Reko Diq mining project, the estimated daily water requirements increase significantly. The mid-range projection for Nok Kundi rises to 994,200 gallons/day, while Dalbandin's climbs to 3,030,980 gallons/day. In the high-end scenario, Dalbandin's demand could exceed 4.5 million gallons/day, indicating a substantial strain on existing water systems unless proactive interventions are made.

These projections underscore the need for a strategic response to secure future water supply. This includes the expansion of existing schemes such as those at Sia Jungle, Gut, and boutique the development of new sources such as Chehtar (subject to feasibility); and the integration of containerized RO treatment units in areas with poor water quality like Laghab. Additionally, incorporating renewable energy sources, improving network efficiency, and introducing community-level water conservation measures will be crucial to ensuring sustainable water access over the next decade.

4.2 Strategic Gaps

Strategic Gaps in Drinking Water Management: Insights from Stakeholder Consultations Community consultations and stakeholder workshops held in Nok Kundi and Dalbandin revealed several critical strategic gaps that hinder effective, equitable, and sustainable water service delivery. These gaps are not isolated technical issues but reflect a combination of policy, institutional, environmental, and socio-economic challenges. Addressing them is essential for building long-term water resilience in the region.

4.2.1 Absence of an Integrated Water Management Strategy

There is currently no unified framework guiding the use, conservation, distribution, and quality control of water resources across the district. This absence leads to fragmented initiatives, ad hoc infrastructure development, and poor alignment between supply and demand. An integrated water management strategy is necessary to coordinate actions across sectors (agriculture, domestic, mining) and ensure sustainability in a water-scarce context.

4.2.2 Lack of Institutional and Policy Support

Stakeholders noted weak institutional capacities, unclear roles between government departments, and limited local empowerment in managing water resources. The absence of a clear policy framework or enabling legislation at the local level results in delays in project implementation, poor enforcement of water use regulations, and weak accountability mechanisms.

4.2.3 Inadequate Infrastructure for Water Supply and Conservation

Existing infrastructure, especially pipelines, tube wells, and storage tanks, is either aging, insufficient, or inefficiently maintained. Furthermore, no major investments have been made in water conservation systems, such as rainwater harvesting, greywater reuse, or leak detection mechanisms. The infrastructure gap widens during periods of high demand or mechanical failure, particularly in areas reliant on distant sources or tanker-based delivery.

4.2.4 Financial Constraints and Affordability Issues

Limited fiscal resources at both government and household levels restrict the development and maintenance of water infrastructure. Even when basic services are available, low cost recovery due to poor user fee compliance affects the sustainability of public water schemes. At the household level, affordability concerns prevent investment in water treatment options like filtration units or storage solutions.

4.2.5 Limited Water Quality Monitoring and Treatment

There is an absence of systematic water quality testing, especially in dug wells and remote tube wells. Water treatment infrastructure, such as chlorination units, filtration plants, or RO systems, is either missing or underutilized. This poses significant health risks, especially in communities relying on untreated groundwater or open wells, where salinity, fluoride, and microbial contamination are common.

4.2.6 Climate Vulnerability and Seasonal Water Shortages

Both Nok Kundi and Dalbandin experience high climate variability, with extreme heat, low precipitation, and seasonal groundwater fluctuations. The absence of climate-adaptive planning, such as drought contingency measures or seasonal demand forecasting, leaves communities highly vulnerable during prolonged dry spells or sudden increases in demand.

4.2.7 Absence of a Migration-Responsive Water Management Plan

With increasing inward migration, particularly linked to economic developments such as the Reko Diq mining project, there is no strategic response to accommodate the growing and shifting population pressure on water resources. Without adaptive planning, supply systems risk being quickly overwhelmed, leading to shortages, informal access, or conflict over scarce resources.

4.2.8 Undefined Implementation Plan for Alternative Water Sources

While alternative water sources such as Chehtar (60 km from Dalbandin) have been identified, there is no concrete roadmap or feasibility study to guide their development. Additionally, the lack of clarity around operational models (public vs. community-managed), financing mechanisms, or environmental safeguards prevents these potential sources from being mobilized as backup or primary supply options.

4.3 Short-Term (1-3 Years) Strategy - Immediate Actions & Infrastructure Stabilization

Over the next three years, the focus must be on stabilizing existing water infrastructure, addressing urgent water quality concerns, and laying the foundation for sustainable and equitable service delivery in the rapidly changing context of the Reko Diq mine site, its surrounding settlements, Nok Kundi, and Dalbandin. These areas are experiencing growing pressure on their already fragile water systems due to population growth, economic activity, and climate vulnerability. The following strategic actions are prioritized to respond to the immediate drinking water needs across the study region while also preparing for long-term water security and resilience.

Strengthen and Develop Key Water Sources

a. Strengthen Sia Jungle Water Supplies for Dalbandin

The nine tube wells at Sia Jungle, located approximately 10 km from Dalbandin, remain the primary water source for the town. Strengthening their operational capacity through financial and logistical support, particularly under the Government of Balochistan's ongoing initiatives, is vital for stabilizing supply to both the town and its peri-urban expansion zones.

b. Complete the Pizhoee Water Supply Scheme

The Pizhoee WSS, about 43 km from Dalbandin, has long been identified as a supplementary water source capable of supplying 150,000 to 200,000 gallons/day. However, progress has stalled since 2019 due to budgetary delays. Immediate resumption and completion of this scheme will add much-needed redundancy, especially as water demand rises with industrial and population growth near Reko Diq.

c. Conduct Feasibility Studies for Alternative Sources

Laghab, while possessing significant underground reserves, faces water quality concerns. A detailed study is needed to assess whether it can be made potable through advanced treatment. Chehtar, located 60 km from Dalbandin, has been cited as a promising source. A comprehensive feasibility study should assess groundwater yield, treatment needs, and pipeline viability, with special consideration of supply to Reko Diq's expanding settlements.

Address Water Quality and Accessibility Issues

a. Install Filtration Plants at High-Demand Points

Small-scale filtration plants should be deployed at community centers, health facilities, and schools, particularly in high-density zones near the Reko Diq labor colonies, where safe water access is a pressing health concern.

B. Deploy Containerized RO Units Where needed

in remote and brackish groundwater zones such as Laghab or fringe Nok Kundi localities, containerized RO plants offer an effective short-term solution. Their deployment should be supported by an O&M model rooted in public-private collaboration or local management.

c. Expand Water Quality Surveillance

Beyond basic TDS and pH testing, there is a need for baseline water quality surveys targeting microbial contamination, heavy metals, and nitrates. This will help prioritize intervention areas and develop tailored treatment responses.

d. Develop an Affordability and Support Model
Given the socio-economic profile of many residents and migrant workers in and around Reko Diq and Nok Kundi, there is a need for financial support mechanisms. These could include government subsidies, donor support, or community-managed cost-recovery systems to ensure affordability of purified water.

e. Establish Real-Time Water Quality Monitoring
Inspired by the Government Innovation Lab's model in Quetta, real-time water quality monitoring systems should be introduced in Nok Kundi, Dalbandin, and the Reko Diq development zone. These systems will enhance transparency, facilitate early warning for contamination, and promote data-driven planning.

Strengthen Groundwater Management and Conservation
Groundwater remains the most critical and over-extracted resource across the region. There is an urgent need to:
- Map aquifers and recharge zones using GIS and hydrogeological surveys
- Introduce water-efficient technologies (e.g., low-flow taps, lined storage tanks)
- Regulate groundwater extraction, especially in high-demand industrial zones
- Promote community-level water stewardship in fast-growing settlements

Mitigate Migration-Driven Pressure on Water Resources
Population growth, especially in and around the Reko Diq mine site, is accelerating due to labor inflows, housing development, and associated economic activity. In the short term, authorities must:
- Develop population-linked water demand projections
- Identify and plan for temporary or mobile water delivery systems
- Ensure inclusive service delivery models for migrant populations, avoiding disparities between host communities and new arrivals

Improve Institutional Capacity and Policy Coordination
The absence of coordinated institutional action is a key bottleneck. Immediate steps should include:
- Clarifying roles and mandates between PHE, local government, and mining stakeholders
- Capacity-building for local institutions, particularly in water asset management and service regulation
- Developing a local water policy framework that integrates public health, environmental, and industrial needs

Pilot Renewable Energy for Water Infrastructure
With diesel-powered pumps dominating current systems and energy reliability posing a major constraint, solar and wind energy should be piloted at:
- Booster stations in Gut and boutique
- Remote water supply points near Reko Diq settlements
- RO and filtration units, to reduce operating costs and carbon footprint

These pilots can serve as scalable models for wider deployment across Balochistan's desert corridor.

4.4 Medium-Term (4-7 Years) Strategy - Infrastructure Development & Policy Implementation

Following immediate stabilization efforts, the medium-term strategy must shift focus to infrastructure expansion, policy enforcement, and the scaling of water governance systems that ensure equitable, efficient, and sustainable water access. The years 4 to 7 represent a crucial window for institutionalizing reforms, accommodating demographic and industrial growth, particularly around the Reko Diq mining zone, and closing long-standing infrastructure gaps in Nok Kundiand Dalbandin. This phase builds on short-term interventions and transitions toward structural resilience and integrated management.

Scale Up Water Infrastructure to Meet Growing Demand

By this phase, population growth, driven by labor migration and settlement expansion near Reko Diq, will require major augmentation of water sources and delivery systems. Actions include:

- Expansion of successful short-term water schemes, such as increasing capacity at Sia Jungle and Pizhoee through additional boreholes, storage, and transmission.
- Developing Chehtar or other viable sources into fully operational water supply schemes, contingent upon feasibility results.
- Upgrading distribution networks in both Nok Kundi and Dalbandin to ensure 24/7 piped supply, reduce leakage, and improve coverage in new residential and worker settlements.
- Constructing decentralized water depots near mining and peri-urban zones for bulk tanker filling, emergency distribution, and mobile RO deployment.

Implement a Comprehensive Water Policy and Governance Framework

The medium term must see the adoption and enforcement of a local and regional water policy, aligned with Balochistan's broader water strategy. Key priorities include:

- Codifying service standards, tariff policies, and quality benchmarks for all water supply providers - public, private, and community-led.
- Creating legal and institutional mechanisms for regulating groundwater extraction, reuse, and aquifer protection, particularly near industrial zones.
- Mainstreaming water governance in local development plans (Dalbandin and Nok Kundi master plans particularly), ensuring that housing, health, education, and mining projects account for water stress and integrate sustainable water planning.

Establish Long-Term Water Quality Management Systems

During this period, water quality management must shift from reactive treatment to preventive and regulatory systems. Strategic steps include:

- Scaling up real-time water quality monitoring, expanding the network of sensors and digital dashboards across key urban and rural points (GIL, UOB's water quality reporting dashboard with quality testing kit, can be used).
- Institutionalizing annual regional water quality assessments, to identify new risks, evaluate treatment needs, and prioritize vulnerable communities.
- Constructing zonal water treatment plants with integrated pre-treatment and RO units, especially where multiple small systems are inefficient.
- Developing community-level water safety plans, including training, awareness, and local monitoring in areas dependent on wells or small-scale systems.

Establish Climate-Responsive and Migration-Aware Water Planning

Given the region's extreme climate and population dynamics, this period should focus on embedding climate resilience and demographic responsiveness into water systems:

- Developing climate-adaptive infrastructure designs, including heat-resistant storage tanks, flood-protected pump houses, and solar backup for outages.
- Creating water demand forecasting models that incorporate seasonality, climate projections, and migration flows, especially near industrial hubs (feasibility for industrial Estate at Nok Kundi will be conducted by Industries Department, GoB in FY 2025-26).
- Instituting buffer supply planning[14] with reserve tanks and mobile systems to serve rapidly growing zones or settlements under temporary stress.

[14] Buffer supply planning refers to the creation of reserve water systems or storage capacity that can be mobilized during:
- Peak demand periods (e.g., summer months, migrant influx)
- System breakdowns (e.g., pump or generator failure)
- Delays in tanker delivery or pipeline disruptions
- Extreme climate events (e.g., droughts, prolonged dry spells)

Institutionalize Renewable Energy in Water Infrastructure

By this stage, renewable energy should no longer be a pilot, it must be integrated into all new water infrastructure investments:

- Convert existing diesel-based booster and submersible pump systems to solar or hybrid alternatives.
- Design new schemes with solar-powered automation, enabling remote operation and monitoring to reduce downtime and labor dependency.
- Establish partnerships with Energy department, energy companies, donors, and technology providers to scale up off-grid renewable solutions, especially in remote and isolated supply points.

Strengthen Local Institutions and Workforce Capacity

The medium term is critical for investing in the human and institutional backbone that underpins water service delivery. Recommended actions include:

- Establishing Water Services Units at tehsil and district levels, staffed with engineers, community facilitators, and data specialists.
- Creating performance-based contracts and accountability frameworks for PHE and contractors.
- Launching technical training programs in water treatment, pipeline maintenance, renewable energy, and digital monitoring for youth and local technicians.

Sustain Financing through Blended Approaches

To support long-term financial sustainability:

- Introduce tiered user charges and smart metering to reflect actual consumption while ensuring affordability for low-income users. Given the current flat-rate model of Rs. 150/month, which suffers from poor compliance, a restructured tariff system with usage-based billing and targeted subsidies can improve revenue generation and accountability, while making water services more financially sustainable.
- Leverage blended finance through public-private partnerships (PPPs), mining-linked CSR contributions, and donor funding for infrastructure.

While the Government of Balochistan has initiated various sectoral funds to promote sustainable operations and ensure continuity of development interventions, a significant financing gap remains for covering routine Operations and Maintenance (O&M) of water infrastructure. To address this, a dedicated District Water Resilience Fund should be established and managed with transparency and public oversight. This fund would support emergency repairs, regular water quality monitoring, innovation pilots, and small-scale renewables, ensuring system reliability beyond initial infrastructure investments. Contributions can come from provincial allocations, mining-linked CSR initiatives, development partners, and progressive local co-financing.

By the end of this medium-term phase, the water supply system in Nok Kundi, Dalbandin, and the Reko Diq corridor should evolve from fragile and reactive to planned, resilient, and partially self-sustaining. This period serves as the turning point from foundational repairs to systemic reform and institutional maturity, paving the way for long-term, climate-resilient water security.

4.5 Long-Term (8-12 Years) - Climate Resilience & Large-Scale Sustainability

In the long-term phase (Years 8-12), the focus shifts toward building a resilient, self-sustaining water system that can withstand climate shocks, meet the needs of a growing population, and support large-scale economic activity, especially around the Reko Diq mining project. By this stage, the foundational infrastructure should be in place, and the governance mechanisms matured. The emphasis now is on sustainability, ecosystem integration, circular water use, and cross-sector alignment, ensuring that water remains a secure, affordable, and equitably managed resource across generations.

Achieve Full Water Security for Urban and Rural Settlements

By this point, both Nok Kundi and Dalbandin, along with the Reko Diq development zone, should have transitioned to a model where every household and settlement has reliable access to sufficient, safe water. This includes:

- Full coverage of piped water networks, with upgraded service standards and extended supply hours
- Universal access to treated water, through centralized and decentralized systems
- No reliance on unsafe or untreated water sources, even in remote and seasonal settlements
- Integration of smart metering[15] and demand-responsive systems to optimize supply and reduce waste

Embed Water Planning in Climate Resilience Frameworks

With climate variability projected to intensify, long-term planning must embed water security into broader climate resilience strategies, including:

- Construction of regional-level storage and recharge infrastructure, including check dams, aquifer recharge basins, and large overhead reservoirs. Construction of Mashkel Dam, if found feasible, can be a milestone to support water supply needs. Similarly, Washuk Dam, when constructed, can be a potential source for Nok Kundi / Dalbandin.
- Integration of water planning into climate adaptation plans for the Reko Diq project and surrounding communities
- Use of hydro-climatic modelling[16] and forecasting systems to support proactive planning and shock response (e.g., droughts, heatwaves)

Promote Circular and Efficient Water Use

As water stress persists, efficient use will become non-negotiable. The long-term strategy should promote circular water practices, such as:

- Wastewater treatment and reuse in agriculture, industry, and construction
- Dual water systems (non-potable and potable) for settlements around industrial zones like Reko Diq
- Promotion of water-efficient appliances and fixtures through policy incentives and regulations

Institutionalize Water Stewardship and Community Ownership

Water security must evolve from a government-led service to a shared responsibility. This includes:

- Empowering community water boards to manage local supply and enforce quality and equity standards
- Establishing inter-agency coordination units across health, environment, energy, mining, and local governance for holistic water planning
- Creating legal frameworks for water rights, including dispute resolution mechanisms and participatory budgeting

[15]Smart metering refers to digital water meters that record real-time consumption, enabling accurate billing, leakage detection, and usage monitoring. Demand-responsive systems adjust water distribution based on real-time demand data, helping prevent overuse and ensure efficient supply during peak periods.

[16]Hydro-climatic modelling combines hydrology and climate data to simulate future water availability under different climate scenarios. It helps predict droughts, rainfall variability, and groundwater recharge trends for informed water planning and risk management.

Develop Water-Resource Resilient Economies

Given the centrality of water to all sectors, future economic growth should be water-sensitive. Long-term priorities include:

- Designing and enforcing water efficiency protocols for industries, especially mining and construction
- Creating economic incentives for water conservation (e.g., reduced water tariffs for greywater reuse, tax breaks for water-saving technologies)
- Promoting water-smart agriculture in peri-urban zones using treated wastewater and efficient irrigation systems

Establish a Regional Water Knowledge Hub

To drive innovation and policy alignment, a Chagai Regional Water Knowledge Hub could be established by Year 10 in collaboration with academic institutions like the BUITEMS and University of Balochistan. This center would:

- Lead research and innovation in desert water management
- Serve as a training and certification body for local water professionals
- Act as a repository for water data, digital mapping, and public access tools

Ensure Long-Term Financial Sustainability

By this stage, water systems should be fiscally sustainable and locally accountable. Measures include:

- Full deployment of tiered, smart tariffs based on consumption and ability to pay
- Transition of successful schemes to community-managed models with public oversight
- Establishment of a provincial water security endowment fund, supported by public, private, and international contributors

4.6 Alignment with Sustainable Development Goals (SDGs): Drinking Water

The water security challenges identified in Chagai District, particularly in Dalbandin, Nok Kundi, and around the Reko Diq mine site, directly align with several targets of SDG 6 (Clean Water and Sanitation). Specifically, these include Target 6.1, which aims to achieve universal and equitable access to safe and affordable drinking water, and Target 6.4, focusing on sustainable water withdrawals and addressing water scarcity. Furthermore, the strategic interventions outlined, such as integrating renewable energy in water infrastructure and community-level water governance, directly support Target 6.b, strengthening local participation in water management. Addressing these issues thus contributes substantially to Pakistan's broader commitments under the SDGs framework.

5.Infrastructure and Urban Development Needs: A Focus on Roads and Town Growth

The Reko Diq mining project, located in the Chagai district of Balochistan, is one of the world's largest undeveloped copper-gold deposits. With its vast economic potential, the project is expected to play a transformative role in the development of western Balochistan and its surrounding regions, particularly the towns of Nok Kundi, Dalbandin, and adjacent settlements. However, the realization of this potential depends heavily on the availability of robust infrastructure and well-planned urban development.

The region currently faces significant challenges in terms of connectivity, urban amenities, and basic services, which hampers mobility, economic diversification, and quality of life. Roads are often in poor condition or non-existent in certain stretches, while the existing towns lack essential facilities such as proper housing, water supply systems, and solid waste management. Without deliberate planning and investment, the influx of workers, businesses, and logistics operations associated with Reko Diq may overwhelm the existing infrastructure, leading to unregulated and unsustainable growth.

This chapter presents a focused assessment of the infrastructure and urban development needs of the targeted areas, with a special emphasis on road connectivity and town growth. It identifies current gaps, analyzes key development constraints, and outlines strategic interventions to support inclusive, sustainable, and future-ready urbanization aligned with the mining-led development trajectory.

5.1 Road Infrastructure and Connectivity, Chagai

According to the latest data[17], the total road length in Chagai district stands at 1,070.84 kilometers, comprising 737.60 kilometers of black-topped roads and 333.24 kilometers of shingle roads. Despite this extensive network, the road density remains low at just 0.02 kilometers per square kilometer, highlighting the vast and sparsely connected geography of the district. To improve connectivity and address regional development gaps, the Government of Balochistan (GoB) is currently funding 21 ongoing and 4 new road infrastructure projects, which are expected to add an additional 249 kilometers to the network. This expansion aims to strengthen inter-settlement access, improve logistics for economic zones such as the Reko Diq mining site, and enhance mobility for residents across the district.

[17]Communication & Works Department, Government of Balochistan (2025)

5.1.1 Urban Morphology and Infrastructure Conditions in Nok Kundi

The spatial layout of Nok Kundi, as revealed through drone survey imagery[18] , reflects the characteristics of an organically grown settlement with limited planning controls. The central and older parts of the town show high-density development with compact housing units, narrow internal streets, and irregular plots. There is no evidence of a structured zoning framework or pre-defined street hierarchy. While some peripheral areas exhibit signs of planned expansion, the town overall lacks a cohesive development pattern.

Image 4: Drone View of Nok Kundi Town - Urban Fabric in the Arid Landscape of Chagai District

The N-40 National Highway, which bisects Nok Kundi and connects it to Dalbandin and Taftan, serves as the primary urban and commercial corridor. This highway has substantial lateral clearance and wide shoulders, currently underutilized. The corridor hosts the main bazaar and offers strong potential for spatial reorganization, streetscape enhancement, and facade uplifting of shops and structures along its length. In contrast, the internal road network consists predominantly of unpaved, narrow, and discontinuous lanes that lack proper drainage and surface treatment, hindering smooth movement, especially during harsh weather or emergencies.

Image 5: Urban Revitalization Potential of Nok Kundi's Main Bazaar: Facade Improvement, Median Development, and Streetscape Greening

[18]P&D department, Government of Balochistan (2024)

existing built environment is typified by low-rise, flat-roofed structures made of local materials. Public amenities, open spaces, and civic infrastructure are sparse, and the lack of a town-level planning mechanism further constrains the delivery of services and facilities. Land use across the settlement is mixed and unregulated, with commercial, storage, and residential uses often coexisting in close proximity.

Image 6: Extended Urban Corridor of Nok Kundi's Main Bazaar: Opportunities for Median Design, Facade Enhancement, and Traffic Flow Optimization

From an environmental perspective, Nok Kundi suffers from an extreme lack of urban greenery. Vegetation is largely restricted to private compounds, with almost no roadside or community plantation. Dust storms, heat stress, and the absence of shading elements significantly affect the urban microclimate. The harsh desert environment necessitates strategic planning interventions in greening and environmental design using water-efficient, native plantation models.

Image 7: Nok Kundi's Unplanned Urban Fabric with Sparse Infrastructure

5.1.2 Technical Site Conditions (Topography)

The terrain of Nok Kundi has been assessed through aerial topographic surveys and contour mapping. These provide a base understanding of the area's elevation gradients and surface drainage behavior, which are essential for zoning, road alignment, drainage design, and infrastructure development.

Interpretation of Contour Map - Nok Kundi

The contour map[19] of Nok Kundi, produced from aerial topographic surveys, indicates a generally mild and continuous slope across the area, suitable for urban development. The contour intervals are consistent and smooth, with no abrupt elevation changes or ridges that would hinder construction.

Note: The central part of the image is an overlap between two topographic sheets, and not a natural drainage or depression. This distinction is important to avoid misinterpretation during land use planning or infrastructure alignment.

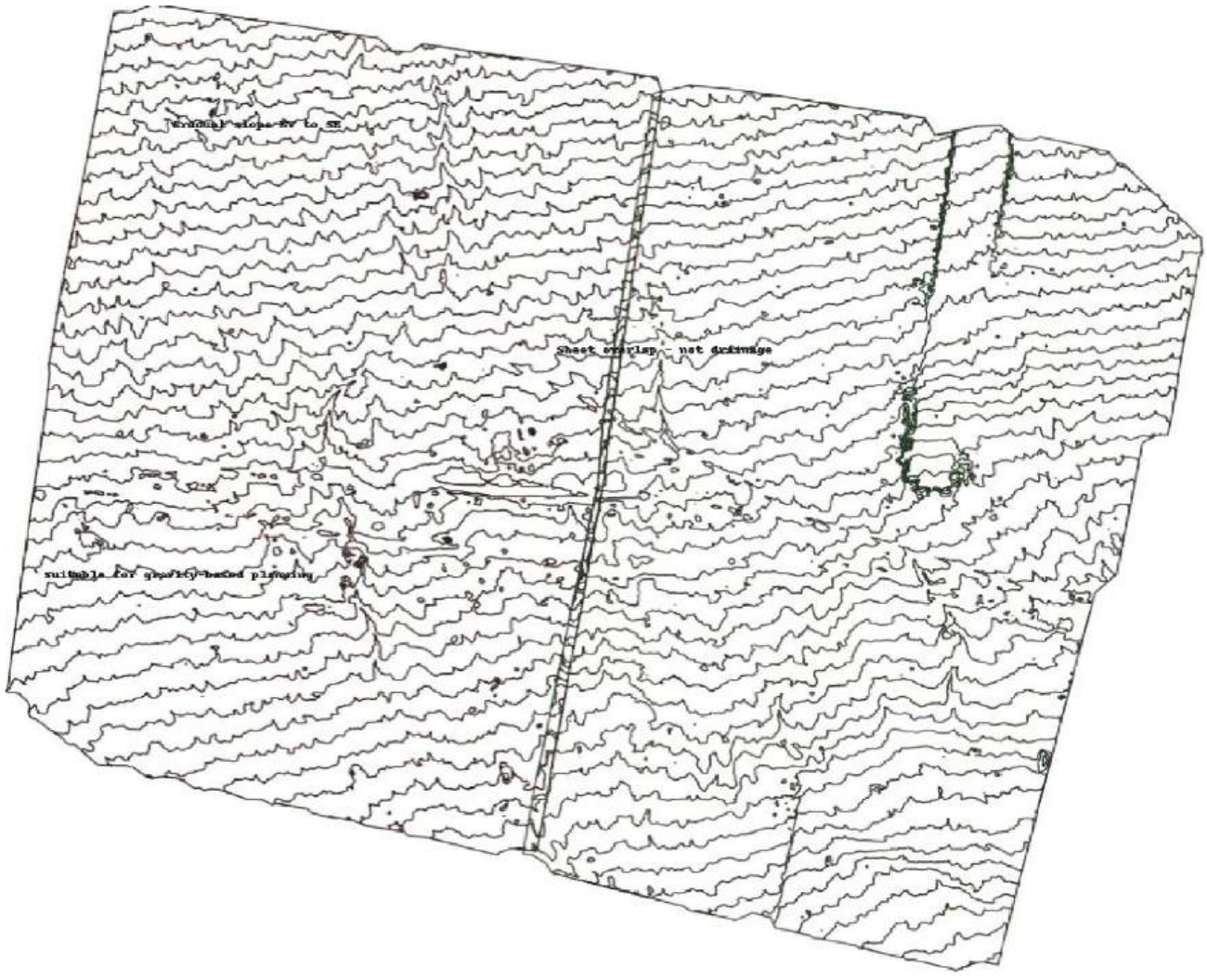


Image 8: Contour Map, Nok Kundi

The terrain shows a gentle slope from west to east, offering a natural advantage for gravity-based infrastructure systems such as stormwater drainage and sewerage. The smooth topography supports a grid-based layout of roads and zoning, allowing efficient earthwork planning and minimizing cost.

[19]P&D department, Government of Balochistan (2024)

5.1.3 Master Planning and Zoning of Nok Kundi

Following the topographic assessment and spatial diagnostics, a master plan has been developed for Nok Kundi[20] to guide future urban growth, infrastructure investment, and land use regulation. The planning approach aligns closely with the site's natural terrain, as revealed in the aerial contour survey, and seeks to create a structured and service-oriented town layout capable of absorbing future population and economic pressures, particularly in connection with the Reko Diq mining project.

Image 9: Proposed Master Plan for Nok Kundi: Terrain-Aligned Urban Growth Strategy

The planning process incorporates multiple layers of data, including topographic constraints, existing built form, accessibility corridors, and future civic needs. Zoning was carried out with attention to both physical site suitability and functional integration of uses.

Planning Features:

- The planning layout incorporates zoning discipline with functional segregation of residential, commercial, and institutional spaces.
- Compact block design has been adopted that improves walkability, reduces infrastructure cost, and allows for efficient land utilization.
- The layout supports phased implementation, starting from higher elevation zones to minimize early drainage problems.
- Public spaces have been proportionally distributed, promoting environmental resilience and community cohesion.

[20]P&D department, Government of Balochistan

5.1.4 Urban Profile and Infrastructure Assessment of Dalbandin

Overview of Urban Form and Growth Patterns

Dalbandin, serving as the district headquarters of Chagai, presents a more complex and expansive urban form compared to Nok Kundi. The town is spatially spread across both sides of the N-40 National Highway, with the highway acting as a spine connecting multiple residential colonies, commercial strips, and institutional nodes.

Image 10: Urban Growth Pattern, Dalbandin

The presence of major landmarks such as DHQ Hospital, District Courts, Railway Station, and multiple shopping centers suggests a relatively central role in governance, services, and trade within the region.

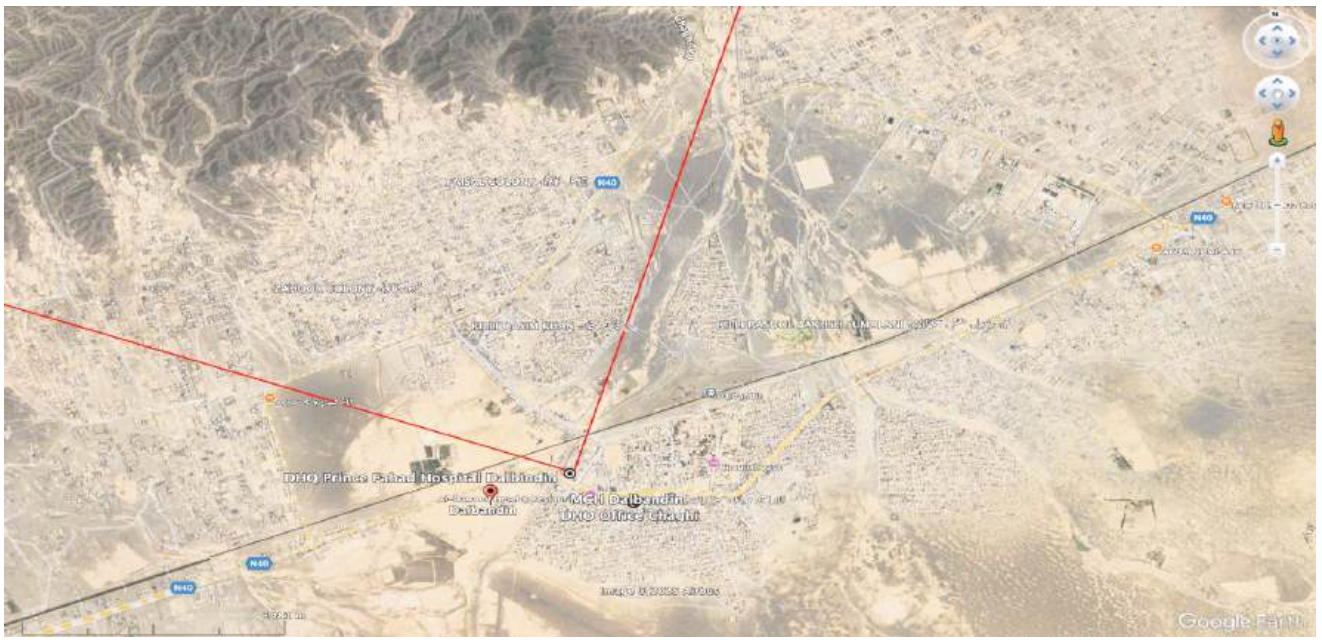


Image 11: Housing Pattern around N-40 Highway, Dalbandin

The urban fabric is semi-organic with a partial grid pattern visible in colonies like Faisal Colony and Killi Qasim Khan, while the southern and peripheral zones show unstructured and fragmented growth. The newer developments along the highway and western zones exhibit larger plot sizes, disconnected road patterns, and undeveloped areas with visible traces of spontaneous settlement.

5.1.5 Road Infrastructure and Connectivity, Dalbandin

The N-40 highway is the primary artery cutting across Dalbandin and serves as the spine for regional connectivity. It is paved, visibly maintained, and well-aligned. However, internal road connectivity within the town shows a highly irregular and discontinuous pattern, particularly in the peripheral zones such as Zahoor Colony and Killi Qasim Khan. Several areas appear to have been developed through incremental or informal growth, lacking proper right-of-way allocation and resulting in narrow, dusty, and poorly linked lanes.

The town is divided by a railway line, which creates a natural barrier and limits east-west connectivity. Internal road geometry in newer areas (as seen in the western side) lacks any structured hierarchy and consists of an organic network of winding tracks and semi-developed paths. Road access to public facilities like DHQ Prince Fahad Hospital, Circuit House, and MCH Dalbandin is present but could be better supported through structured approach roads and signage.

5.1.6 Urban Planning and Land Use Patterns, Dalbandin

Dalbandin's urban landscape exhibits fragmented land use, where residential, institutional, commercial, and informal retail units are dispersed rather than zoned. The town lacks a consolidated central business district (CBD), though areas near the hospital and DHO office function as a semi-core. Peripheral areas, especially along the southern and southwestern edges, show low-density sprawl with large, underutilized plots and minimal infrastructure.

There is no consistent building line or facade design, and plot boundaries are often irregular. Areas west of the railway line (e.g., near Govt. Inter Girls College) are poorly connected and may remain under-served due to natural topography and limited bridges/culverts. Potential exists to identify one or two growth centers or service zones to consolidate economic and civic activity.

5.1.7 Integration with Ongoing Master Planning Efforts

It is important to note that the Urban Planning & Development (UP&D) Department is currently undertaking the preparation of a comprehensive master plan for Dalbandin. The findings and observations presented in this assessment are intended to complement and reinforce that effort by identifying immediate infrastructure needs, spatial challenges, and opportunities for quick-impact interventions. While the master plan will provide a long-term strategic framework for Dalbandin's growth, this study highlights priority areas, such as road connectivity, civic space enhancement, and environmental upgrading, that can be aligned with the upcoming master plan and phased into early implementation cycles. Collaborative alignment between the recommendations of this needs assessment and the UP&D Department's formal planning process will be essential to ensure coherent, sustainable, and locally responsive urban development in Dalbandin.

5.1.8 Environmental and Open Space Analysis, Dalbandin

Dalbandin suffers from arid conditions, with scarce vegetation, high dust levels, and no visible green zones or formal parks. Natural dry riverbeds (locally known as karez or ravines) intersect the town, especially west of the railway line, increasing erosion and flood vulnerability. These ravines could be formalized and landscaped as green corridors or water channels.

The absence of green buffers along main roads or public institutions is evident.
Several open tracts of land near the town's edge can be designated for:

- Green belts
- Public parks
- Water harvesting and recharge zones
- Plantation initiatives using date palms, mesquite, and neem can be prioritized to mitigate dust and improve air quality.

5.2 Strategic Gaps in Road Infrastructure and Maintenance

During district workshops at Dalbandin and Nok Kundi, stakeholders identified several critical gaps undermining road connectivity and mobility in the target areas. These gaps are summarized and elaborated as follows:

1. Rural areas, particularly, have very few roads-areas not interconnected.
Much of the target areas, including Nok Kundi and surrounding settlements, remains poorly connected. Settlements are often isolated due to the lack of internal link roads, and the existing road network primarily comprises longer-distance corridors like the N-40. Rural and peripheral habitations lack reliable access to main highways, markets, schools, and healthcare facilities, making socio-economic integration challenging. This isolation is particularly evident in aerial assessments and contour-based zoning, where vast patches of settlement remain unserved by formal roads.

2. Poor road conditions, with many roads damaged or incomplete.
Field observations and drone imagery confirm that many existing roads are either unpaved, eroded, or partially constructed. Internal roads in Nok Kundi and Dalbandin display signs of wear and neglect, with dusty, uneven surfaces and irregular alignments. Construction of new roads has often remained incomplete due to funding delays, harsh climate, or lack of follow-up, resulting in fragmented connectivity.

3. No proper road drainage system, leading to rapid deterioration of roads.
Due to the absence of side drains and structured stormwater management, most roads, especially in residential areas, suffer rapid degradation during rains. Even though rainfall is infrequent, the lack of drainage causes environmental and road maintenance issues, leading to cracking and erosion. Latest drone imagery substantiates the stakeholders' point by showing that there is no drainage system in most built-up areas.

4. Bridges and culverts are inadequate, restricting transport during floods and heavy rains.
In low-lying areas or across seasonal streambeds (nullahs), the absence or inadequacy of culverts and small bridges disrupts mobility during rain events. This affects rural access and emergency services and further isolates already vulnerable communities. Topographic analysis shows natural slopes and drainage patterns that, if unaccommodated with proper crossings, become major mobility bottlenecks.

5. No road maintenance programs, causing continuous degradation of existing roads.
There is no dedicated road maintenance unit or scheduled maintenance cycle in the target area. Roads, once constructed, often fall into disrepair due to lack of resurfacing, patchwork, or shoulder repair. The absence of preventive maintenance leads to higher reconstruction costs and poor asset longevity, weakening the return on investment made by the government in past years.

6. Lack of a structured transport system in rural areas, making travel expensive and unreliable.
Rural populations depend on informal, often expensive, transport options, mainly private vehicles or shared pickups, due to the lack of organized public transport. With roads either absent or in poor condition, the cost and time of rural travel are significantly higher than urban areas, limiting access to economic and social opportunities.

7. No roadside plantation
Across most of the study target areas, there is almost no roadside plantation. This lack contributes to dust pollution, high surface temperatures, and a barren visual environment. Integrating green corridors alongside roads could improve air quality, provide shade, and contribute to a more sustainable and liveable townscape.

5.3 Short-Term Strategy (1-3 Years): Town Planning and Infrastructure Development

The short-term strategy focuses on initiating visible, high-impact interventions using the data and designs already available for Nok Kundi, while concurrently launching baseline planning and priority identification in Dalbandin and settlements around the Reko Diq mine site.

Integration of Engineering Designs (Nok Kundi)

- Adjust proposed road layouts and zoning maps based on real ground conditions visible in aerial surveys.
- Q-WASA in Quetta. Results in Annex-WC, Annex-WD. Analysis of the results is as follows. for early construction.
- Prioritize roads serving key civic functions: hospitals, schools, markets, and public offices.

Road & Drainage Work Initiation

- Begin phased road surfacing with basic drainage in areas requiring minimal earthwork (aligned with natural slope from contour data).
- Ensure at least one pilot drainage corridor is functional before the monsoon season.
- Install temporary signage and ROW demarcation for future expansions.

Bazaar & Public Space Improvements

Initiate a bazaar uplift pilot along the N-40 corridor:

- Shopfront alignment and facade improvement
- Defined pedestrian pathways and shaded sitting areas
- Low-cost urban furniture and lighting

Green Initiatives & Dust Control

- Launch a pilot roadside plantation initiative using drought-tolerant native species.
- Develop 1-2 community green pockets in vacant government plots using basic fencing and recycled water for irrigation.

Urban Regulation & Control Measures

- Begin marking building lines and road boundaries in key residential and commercial sectors.
- Introduce temporary regulatory notices to prevent encroachment on future road alignments.
- Engage local committees for community sensitization on zoning and right-of-way protection.

Institutional Readiness

- Form a local implementation task team (Planning + Roads + Local Govt) to oversee short-term rollout.
- Prepare standard operating procedures (SOPs) for site-level validation and engineering plan adjustment.

Dalbandin and Reko Diq Mine Site Adjacent Areas

- Get approval of Dalbandin Master Plan, being prepared by UP&D department
- Roll out Dalbandin Master Plan
- Launch basic geo-referencing and mapping exercises using satellite imagery and field validation for other target areas
- Identify key roads, crossings, or facility access routes needing urgent surfacing or rehabilitation.
- Begin scoping for drainage improvements in low-lying or flood-prone colonies.
- Prioritize public facilities (e.g., schools, health units) for connection to accessible routes (facility mapping data already available).
- Mobilize LG&RD department to start spatial profiling and needs listing for these areas.

District-Level Coordination

Establish a unified planning cell to oversee short-term works in all the target areas.

Use Nok Kundi as a demonstration site to generate replicable models for phased rollout in Dalbandin and Reko Diq fringe settlements.

5.4 Medium-Term Strategy (4-7 Years): Infrastructure Consolidation and System Strengthening

With foundational works initiated in the short term, the medium-term strategy focuses on consolidating infrastructure, enforcing spatial planning, and expanding access to underserved areas. This phase builds on the lessons from Nok Kundi while operationalizing the master plan for Dalbandin and extending structured development to the broader Reko Diq influence zone.

Nok Kundi (From Pilots to Full Implementation)

Full-Scale Road and Infrastructure Rollout

- Complete construction of all remaining priority roads from the engineering design portfolio (Annex-IA).
- Upgrade previously surfaced roads with permanent drainage, signage, and road furniture.
- Convert temporary ROW markings into permanent street boundaries with signage and enforcement.

Zoning and Regulatory Enforcement

- Formalize zoning regulations and enforce building lines across residential and commercial sectors.
- Launch a digital plot verification and property mapping system to support building control.

Green Urbanism and Public Spaces

- Expand roadside plantation and initiate block-level tree cover programs.
- Develop larger green belts and community parks using areas identified during aerial mapping.
- Begin greywater reuse systems in public parks and plantation zones.

Public Amenities and Utility Infrastructure

- Build out civic infrastructure on institutional plots (schools, BHUs, administrative buildings).
- Begin trenching and installation of underground ducts for water, sewerage, and electricity in new sectors.

Dalbandin (Operationalizing the Master Plan)

Master Plan Implementation

- Advance implementation in priority clusters (e.g., Faisal Colony, Zahoor Colony, DHO/Circuit House zone).
- Initiate zoning enforcement and land regularization in high-growth areas.

Road and Access Infrastructure

- Design and construct internal roads based on topography and settlement patterns.
- Prioritize links to public facilities and markets.
- Integrate proper drainage channels aligned with natural terrain.

Digital Mapping and Land Record Integration

- Digitize Dalbandin's layout, land records, and municipal assets for transparent governance.
- Reko Diq Adjacent Settlements (Phased Entry)

Infrastructure Reach-Out

- Extend basic road access to settlements within the Reko Diq development corridor.
- Construct culverts and small bridges across seasonal water paths to ensure year-round access.

Spatial Planning and Land Use Guidance

- Prepare Local Area Plans (LAPs) or interim development frameworks for larger settlements.
- Identify sites for future civic amenities, green spaces, and logistics points.

Basic Service Integration

- Align planned roads with future water and power layouts to avoid rework.
- Pilot integrated solar lighting and water tanks in remote community clusters.

District-Level Systems and Institutional Strengthening

Governance and Oversight

- Expand the unified planning cell into a District Urban Development Coordination Unit.
- Link planning processes with LG&RD, Roads, and Revenue departments.

Monitoring & Evaluation Systems

- Develop a dashboard for tracking road construction, service delivery, and zoning compliance.
- Conduct annual infrastructure audits and feedback loops using community inputs.

Policy and Capacity Support

- Initiate training for local officials in spatial planning, GIS, and infrastructure regulation.
- Prepare for PPP-based projects in commercial development, solar energy, and inter-town transport.

5.5 Long-Term Strategy (8-10 Years): Sustainable Urban Expansion and Regional Integration

The long-term strategy focuses on transforming Nok Kundi, Dalbandin, and Reko Diq Mine site with its surrounding settlements into climate-resilient, economically integrated, and service-optimized urban systems. By this stage, the district will be prepared to absorb large-scale development pressure from the Reko Diq / Sia Diq mining zones, regional trade, and internal population growth.

Nok Kundi: Model Mining-Support Town

Urban Maturity and Growth Management

- Implement controlled expansion through town extensions guided by the master plan.
- Upgrade town-level services (waste, water, sewerage, energy) to city-grade standards.
- Introduce building regulations to allow mixed-use vertical development in commercial zones.

Mobility and Public Transport

- Introduce a local public transport loop (electric mini-buses or shuttles).
- Expand parking zones and implement smart traffic management in busy sectors.

Environmental Resilience

- Complete canopy-based tree corridors along all major streets.
- Introduce solar-powered infrastructure (lights, water pumps, charging stations).
- Construct soakage pits and stormwater retention ponds at strategic points.

Dalbandin: Secondary Urban Hub for Regional Connectivity

City-Level Facility Development

- Establish Dalbandin as the regional administrative and service hub, supporting logistics, governance, and social services for the wider Chagai district.
- Develop a civic complex combining municipal services, public counters, and citizen facilitation centers.

Regional Integration

- Strengthen road links between Dalbandin, Nok Kundi, and Reko Diq to support mining logistics and regional trade.
- Advocate for rail connectivity enhancement with freight platforms if feasible.

Urban Infrastructure Upgrades

- Develop municipal-level sewerage, solid waste, and treated water reuse systems.
- Enforce land use planning and building control in all growing colonies.

Reko Diq Surroundings: Sustainable Satellite Settlements

Planned Settlement Nodes

- Establish formal settlement layouts for larger worker or support populations that may emerge from mining activities.
- Allocate zones for community facilities, open spaces, and worker housing with access to basic utilities.

Renewable and Smart Infrastructure

- Develop smart micro-grids, solar water supply, and ICT infrastructure in remote clusters.
- Integrate these settlements with mining-linked health, emergency, and vocational service systems.

District-Wide Systems and Governance

Institutional Strengthening

- Formalize a District Urban Planning & Infrastructure Authority with planning, engineering, GIS, and regulatory wings.
- Ensure coordination with provincial bodies like UP&D and Planning & Development Department for integrated budget execution.

Policy, Regulation, and Investment

- Operationalize zoning bylaws, urban taxation, and PPP frameworks for sustainable urban financing.
- Attract private investment in logistics hubs, renewable energy, housing, and commercial development.

Digital Governance

- Implement e-governance platforms for land records, service requests, grievance redressal, and planning permissions

5.6 Building Resilient Towns and Roads for Sustainable Growth in the Reko Diq Corridor: The SDGs Lens

The proposed infrastructure and urban development strategy for Nok Kundi, Dalbandin, and surrounding areas directly aligns with several Sustainable Development Goals (SDGs), particularly SDG 9 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities), and SDG 13 (Climate Action). By prioritizing road connectivity, zoning-based urban planning, and climate-resilient design elements such as green corridors and water-efficient landscaping, the initiative aims to foster inclusive and sustainable urbanization in the arid zone of western Balochistan. The integration of gravity-based infrastructure systems, renewable energy, and public transport supports long-term environmental sustainability, while institutional strengthening and public participation contribute to SDG 16 (Peace, Justice, and Strong Institutions). Moreover, improving mobility and urban services in mining-adjacent towns will catalyze economic diversification and regional integration, addressing SDG 8 (Decent Work and Economic Growth) and SDG 1 (No Poverty) through enhanced access to markets, services, and livelihoods. This strategy not only supports immediate infrastructure needs but also builds the foundation for resilient and future-ready towns aligned with the Reko Diq-led development trajectory.

6. Livelihood

6.1.1 Multidimensional Poverty Index (MPI), Chagai

The Balochistan Multiple Indicator Cluster Survey (MICS) 2019-20 reveals that 63% of the population is classified as poor based on the Multidimensional Poverty Index (MPI). Additionally, 31.2% of the population falls under the category of severely poor, highlighting significant socio-economic challenges in the district. According to Census 2023 data, the 15-24 age group represents a highly active labor force, with 35.5% employed. However, a significant portion (53.9%) remains unemployed, indicating a gap between job availability and workforce entry opportunities. Employment becomes more stable in the 25-40 age group (40.3%), reflecting a shift towards higher job security and career establishment.

6.1.2 Types of Houses

The housing data from Balochistan, with a focused lens on Chagai District and its administrative subdivisions, reveals a critical insight into the region's structural vulnerability and socio-economic conditions. A dominant feature across the district is the overwhelming prevalence of Kacha housing, which comprises roughly 88%[21] of all homes in Chagai. These structures, typically built using mud or other temporary materials, are highly susceptible to weather-related damage, especially in an environment exposed to frequent dust storms, extreme heat, and occasional flash floods.

Within Chagai's subdivisions, the trend remains consistent. In Nok Kundi, Kacha housing represents the vast majority, reflecting deep-rooted challenges in housing security and economic development. Only Dalbandin Sub-Division demonstrates a relatively better situation, with 1,956 Pakka houses, likely due to its semi-urban character and stronger access to services and markets. Nevertheless, even in Dalbandin, over 85% of households remain in Kacha dwellings, showing that the improvements are modest at best. Detailed data at Annex-LA.

Pakka houses, typically built with bricks, concrete, and other resilient materials, are scarce across the district, accounting for just 8.8% of total housing stock in Chagai. Semi-Pakka constructions, combining both durable and temporary materials, are also limited, highlighting that the vast majority of residents lack access to housing that can offer long-term protection or withstand environmental stress.

This structural reality is a direct reflection of broader socio-economic vulnerabilities in the region. The dominance of temporary housing is closely linked to high poverty rates, limited government infrastructure investment, and the absence of formal housing support schemes. The condition of housing not only affects quality of life but also amplifies exposure to climate risks, posing significant threats to the well-being and resilience of local communities. For sustainable development in the target areas, investment in climate-resilient, affordable housing must be prioritized, ideally leveraging locally available materials and labor to stimulate the economy while improving living conditions.

6.1.3 Land Utilization Patterns and Cropping Intensity

Land use statistics from the district reflect a wide gap between total reported area and cultivated land, underscoring the untapped potential for agriculture in Chagai. Of the 3.26 million hectares reported, only 144,373 hectares are classified as cultivated. Within this, 127,683 hectares are currently under crops, while 16,690 hectares lie fallow. The remaining over 3.1 million hectares are uncultivated, a large proportion of which is likely made up of barren desert, culturable waste, and land not available for cultivation.

[21] Pakistan Bureau of Statistics (2023). Housing and Population Census 2023

Table 14: Total Area: Reported, Cultivated and Uncultivated

Reported area (2+7)	Cultivated area			Cultivated area		Un-cultivated area			
	Total (3+4)	Current Fallow	Net sown	Total (4+6)	Area Sown more than once	Total (8+9+10)	Cultur-able Waste	Forest	Not Available for Cultivation
1	2	3	4	5	6	7	8	9	10
3261148	144373	127683	16690	17049	359	3116775	377606	306649	2432520

Source: Development Statistics of Balochistan 2021-22, Bureau of Statistics, P&D department

The data also reveals that multiple cropping is practiced to some extent, with 37,760 hectares recorded as sown more than once. However, cropping intensity remains low due to limited irrigation infrastructure, poor soil fertility in parts of the district, and low rainfall reliability. These figures point toward a landscape that is heavily constrained by natural conditions but holds potential for improved land use through investment in irrigation, soil conservation, and land development programs aimed at expanding cultivable areas.

6.1.4 Cereal Crop Production and Agricultural Potential in Chagai District

Agricultural production in Chagai District reflects a low-input, low-output system largely reliant on traditional methods and constrained by water availability. The four primary cereal crops - wheat, barley, jowar, and maize - illustrate the challenges and potential of the region's farming landscape.

Wheat is the dominant crop by far, with 6,995 hectares under cultivation, producing approximately 14,899 tonnes (Annex-LB). This demonstrates the central role wheat plays in both food security and subsistence farming across the district. However, the yields are modest, suggesting the need for improved seed varieties and irrigation support. Barley, though cultivated on a much smaller area of just 410 hectares, yields 574 tonnes, serving mainly as fodder or for local consumption in areas with harsher conditions.

Jowar (sorghum) and maize are also cultivated, with 1,100 and 1,020 hectares respectively, producing 1,365 and 1,152 tonnes. These coarse grains are important in areas with erratic rainfall and are often favored in traditional mixed cropping systems. The similar area but lower output of maize compared to wheat and jowar may point to soil fertility or irrigation issues. Overall, while the district supports a range of cereals, the low average yields across all crops highlight systemic limitations such as poor access to extension services, inadequate mechanization, and limited water for irrigation.

This agricultural profile underlines the district's dependence on staple cereals and the urgent need for investment in drought-resistant seeds, better water management practices, and smallholder-focused agricultural extension programs. Improving agricultural productivity is essential not only for food security but also for strengthening livelihoods in one of Balochistan's most climate-challenged districts.

6.1.5 Irrigation Sources and Power Supply to Tube Wells

The data on irrigation sources highlights the critical reliance on groundwater in Chagai District. Of the total irrigated area, the vast majority is supported through tube wells, with 1,197 tube wells operating across the district. This heavy dependence on groundwater is a direct outcome of the region's extremely low rainfall and absence of perennial surface water sources. In such a dry landscape, tube wells serve as the primary lifeline for sustaining crop cultivation.

Table 15: Number of Government and Private Tube Wells

Total (4+5+6+7)	Area Irrigated by Canals			Area Irrigated by		Karezes/ Springs/ others	Total number of	
	Govt.	Private	Total (2+3)	Wells	T.Wells		Wells	T.Wells
1	2	3	4	5	6	7	8	9
16,903	-	-	-	445	16,350	108	2,821	2,180

Source: Development Statistics of Balochistan 2021-22, Bureau of Statistics, P&D department

However, the sustainability of this groundwater-dependent irrigation system is contingent upon energy availability. The data shows that a large number of tube wells are powered by diesel engines, followed by electric-powered and a limited number running on solar energy. The dominance of diesel tube wells raises concerns about operational costs, carbon emissions, and long-term affordability for small farmers. Meanwhile, electric tube wells offer improved efficiency but are limited to areas with grid connectivity. The uptake of solar-powered tube wells, although currently minimal, presents a promising solution for off-grid, sustainable irrigation in remote areas of Chagai.

Table 16: Energy Source of Tube Wells

Government				Private				Total			
Elec:	Diesel	Solar	Total	Elec:	Diesel	Solar	Total	Elec:	Diesel	Solar	Total
-	-	-	-	42	421	1,717	2,180	42	421	1,717	2,180

Source: Development Statistics of Balochistan 2021-22, Bureau of Statistics, P&D department

Expanding access to solar irrigation technology, combined with groundwater conservation measures such as lining water channels and promoting drip irrigation, can significantly enhance the reliability and environmental sustainability of agriculture in this arid region.

6.1.6 Agricultural Machinery and Mechanization Status

The data on agricultural machinery indicates a limited level of mechanization in Chagai District, consistent with its traditional and smallholder-based farming systems. Tractors are the most commonly used machine, yet their total number relative to the district's cultivated area remains low. This implies that mechanized land preparation is still out of reach for many farmers, either due to high ownership costs or limited rental services.

Other essential machinery such as threshers, seed drills, and harvesters are present in smaller numbers, often concentrated in areas with more stable agricultural activity like Dalbandin. The low adoption of modern machinery affects not only productivity but also efficiency, labor demand, and post-harvest losses. Manual methods dominate most farm operations, resulting in time-consuming practices and low returns per unit of labor.

Number of Government and Private Machinery

Source: Development Statistics of Balochistan 2021-22, Bureau of Statistics, P&D department

There is significant potential for mechanization support schemes in Chagai, particularly those that promote shared equipment pools, farmer cooperatives, or government-backed machinery banks. Providing access to affordable and appropriate machinery could enhance land utilization, crop diversification, and income levels, thereby increasing agricultural resilience under changing climatic conditions.

6.1.7 Mineral Resources and Economic Opportunity

Chagai District is widely recognized as one of the most mineral-rich regions of Pakistan. The mineral resources table reflects a diversity of deposits including copper, gold, chromite, iron ore, coal, and marble. Key areas such as Saindak and Reko Diq have gained international attention due to their high-grade copper and gold reserves. These sites represent significant economic potential, not only for provincial revenues but also for local employment and infrastructure development.

In addition to these high-profile projects, the district also hosts substantial reserves of coal and marble, which are locally extracted and used in construction and small-scale industries. The presence of iron ore and chromite further highlights the district's strategic relevance to national mineral supply chains.

Table 17: Production Volumes of Metallic and Non-Metallic Minerals - Chagai

S. No	Mineral	Tonnes
1	Marble (Onyx)	6337
2	Marble (Ordinary)	222
3	Chromite	7722
4	Barite	652
5	Pumice	5377
6	Iron Ore	119964
7	Copper	1114
8	lead	370
9	Manganese	184

Source: Development Statistics of Balochistan 2021-22, Bureau of Statistics, P&D department

However, despite the richness of these natural resources, the full economic benefits have yet to materialize for the local population. Issues such as limited local processing, absence of labor skill development, water-intensive extraction practices, and minimal reinvestment into community infrastructure have contributed to uneven development outcomes.

Table 18: Vegetable Cultivation and Local Consumption Trends

Tractors			Threshers			Harvesters		
Govt:	Private	Total	Govt:	Private	Total	Govt:	Private	Total
-	319	319	1	20	21	-	-	-
Reapers			**Reapers**			**Reapers**		
-	-	-	6	-	6	-	210	210

6.1.8 Vegetable Production

The vegetable production data (Annex-LB) from Chagai District shows modest but meaningful cultivation of key crops such as onions, tomatoes, spinach, and turnip. While the total area under vegetables is relatively limited due to climatic constraints and water scarcity, these crops serve an important role in meeting local dietary needs and reducing dependency on imports from other districts.

Onion and tomato are among the most commonly grown vegetables, benefiting from established cultivation knowledge and market demand. Spinach and turnip, though seasonal, contribute to household nutrition and small-scale market activity. However, the yields remain low across the board, largely due to limited use of certified seed, inadequate irrigation, and lack of post-harvest storage facilities. Most vegetable farming is concentrated in areas with better water availability, such as near Dalbandin and along groundwater-fed farms.

To strengthen vegetable production in the district, there is potential to introduce tunnel farming, promote drought-tolerant varieties, and support kitchen gardening at the household level, especially in schools and health centers. These interventions can play a dual role in enhancing nutrition and improving climate-resilient agriculture for local communities.

6.1.9 Fruit Production and Agro-Climatic Potential

Fruit cultivation in Chagai District is practiced on a smaller scale, yet it holds significant relevance for household consumption, nutrition, and potential market diversification. The data shows that fruits such as pomegranate, grapes, dates, and melons are grown in selected pockets where irrigation and soil conditions are more favorable.

Pomegranate and grapes are particularly well-suited to the arid climate, with their deep-rooted systems and high drought tolerance. Their production, however, remains constrained by limited commercial farming techniques, absence of cold storage facilities, and poor access to markets. Dates are a traditional crop in the region, benefiting from heat-tolerant characteristics, though improved post-harvest handling and value addition opportunities are lacking. Seasonal fruits like melons are grown in low-input systems and cater primarily to local demand.

Given the rising national and international demand for arid-zone fruits, Chagai has the potential to emerge as a niche producer of select fruits if supported with appropriate investments. These include the introduction of improved rootstocks, training on pruning and orchard management, and establishment of linkages with fruit processing and packaging enterprises.

6.1.10 Livestock Population and Trends

Livestock rearing continues to be a cornerstone of rural livelihoods in Chagai District. According to the 2006 livestock census, the district was home to a total livestock population of 533,534, which included 205,725 sheep, 299,363 goats, 6,576 cattle, and 17,543 camels, along with a smaller number of buffaloes, donkeys, horses, and poultry. By 2021-22, projections indicate a decline in livestock population to 425,108, comprising 150,527 sheep, 248,267 goats, 10,363 cattle, and 12,244 camels.

Table 19: Total Population of Livestock and Domestic Poultry by District in Balochistan In 2006 Census

Cattle	Buffalo	Sheep	Goats	Camels	Horses	Mules	Asses	Total	Poultry
6576	20	205725	299363	17543	100	83	4124	533534	92931
Projected Population of Livestock and Domestic Poultry By District In Balochistan for the Year 2021-22									
10,363	50	150,527	248,267	12,244	108	234	3,315	425,108	77,069

Source: Development Statistics of Balochistan 2021-22, Bureau of Statistics, P&D department

This trend suggests a notable reduction in overall livestock numbers over the years, likely due to persistent droughts, limited rangeland productivity, and water scarcity. Goats and sheep remain the most commonly raised animals, reflecting their adaptability to arid and semi-arid grazing conditions. Camels also hold cultural and economic importance, particularly in the border and desert zones.

Poultry numbers also declined from 92,931 in 2006 to 77,069 in 2021-22, pointing to growing challenges in backyard poultry systems, such as access to feed and disease management. To revitalize the sector, there is an urgent need for livestock healthcare outreach, pasture regeneration initiatives, and support for smallholder women-led poultry units. Targeted livestock insurance and fodder development schemes could also help stabilize rural incomes against climate-induced shocks.

6.1.11 Digital Access and Livelihood Constraints

Access to digital infrastructure is a growing determinant of livelihood diversification and inclusion in modern economies. As of September 2023, Pakistan's total broadband penetration stood at 54.5%, with 53.2% attributed to mobile broadband and only 1.3% from fixed broadband sources, according to the Pakistan Telecommunication Authority (PTA). While these figures reflect growing national connectivity, they obscure stark regional disparities.

In Balochistan, internet penetration is estimated at just 15%, highlighting a substantial digital divide between the province and the rest of the country.

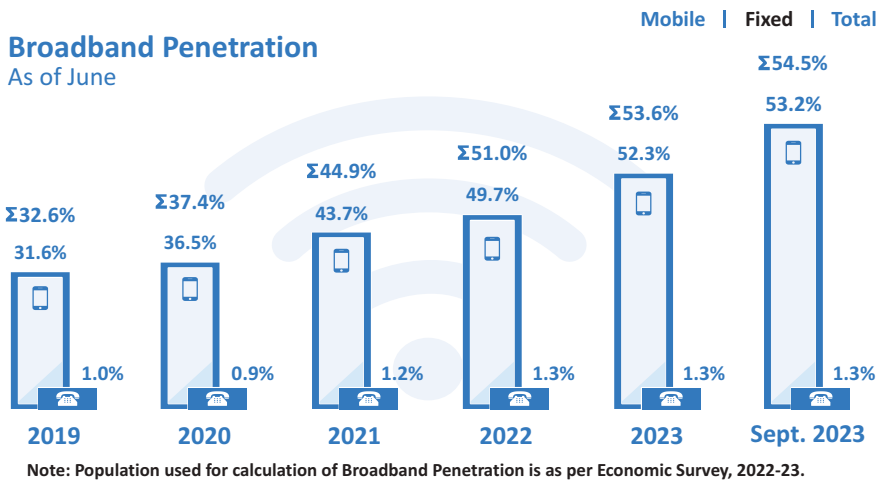


Image 12: Broadband Penetration in Balochistan

In districts like Chagai, including Nok Kundi and Dalbandin, access to reliable internet remains highly constrained or altogether absent. According to the Bureau of Statistics Balochistan, Chagai District has 7 telephone exchanges supporting 1,439 PTCL landline connections (2021-22) and 1,279 fixed broadband connections. These figures refer specifically to fixed-line infrastructure and do not include mobile internet services. Notably, there are no Internet Protocol Television (IPTV) services reported. While these fixed-line services provide some degree of connectivity, they cover only a small fraction of the population, reinforcing the digital divide in the district.

The limited connectivity stems from a combination of factors: sparse population distribution, rugged terrain, high infrastructure costs, and low commercial incentive for telecom providers. This digital exclusion has tangible impacts on livelihoods. Farmers are unable to access timely weather updates, digital marketplaces, or agricultural extension services via mobile apps. Youth in remote areas miss out on online education, freelance work, and skills development platforms, further widening the opportunity gap.

Women, in particular, bear a disproportionate burden, as lack of internet access compounds existing mobility and social constraints, isolating them from potential home-based income-generating avenues such as online handicraft sales or digital literacy training. Similarly, small traders and entrepreneurs are cut off from e-commerce platforms and online payment systems, limiting the growth of microenterprises.

6.1.12 Informal Economy and Non-Agricultural Livelihoods

Beyond agriculture and livestock, the economy of the target areas heavily relies on informal and non-agricultural sources of income, which remain under-documented yet vital for household survival. These include daily wage labor, construction, mining-related work, petty trade, and cross-border commerce, especially in towns like Taftan and Nok Kundi, which are close to the Iran border. Seasonal migration is also common, with many young men traveling to other parts of Balochistan, Sindh, and even Gulf countries to seek employment. Informal livelihoods are often shaped by the scarcity of formal jobs, lack of vocational skills, and geographical isolation of settlements. Additionally, small-scale transport services, retail trading, and personal services such as tailoring or mobile phone repair form essential parts of the income landscape, particularly in semi-urban areas like Dalbandin. However, the informal nature of these livelihoods leaves individuals vulnerable to income shocks, with no access to labor protection, credit, or insurance mechanisms. Policy responses that include skill-building programs, microenterprise support, and recognition of border trade activity can significantly enhance income stability in this sector.

In Chagai's remote and resource-rich landscape, informal livelihood systems have evolved to fill institutional and economic voids. These systems are sustained by various forces, summarized in the following table.

Table 20: Core Drivers of Informal Economy, Chagai

Driver	Description
Border Trade	Smuggling of fuel, food, electronics, and currency exchange via Iran and Afghanistan
Unregistered Mining	Informal gold and copper mining around Saindak & Reko Diq
Labor Informality	Casual labor in mining, construction, and agriculture without contracts
Lack of State Oversight	Weak institutions enable widespread undocumented trade
Mega Projects Exclusion	Resource extraction projects fail to benefit local populations
Women in Informal Sector	Home-based production, livestock care, and handicrafts are underreported

6.1.13 Public Sector Development Program Investments

Assessment of Production-Sector Investments in the 2024-25 Public Sector Development Program

A review of the Public Sector Development Program (PSDP) 2024-25 reveals that only four production-sector projects are currently active in Chagai District, all under the Agriculture Department. While the presence of these projects is a positive step toward improving rural livelihoods, the narrow scope and modest financial commitments point to significant underinvestment in the production sector relative to the district's development needs.

The ongoing project titled "Water Conservation Practices through Construction of Water Storage Tanks (30 Nos)" with a total cost of PKR 54.75 million, aims to address critical water scarcity challenges. However, the limited physical and financial progress (only PKR 3 million spent to date) raises concerns about timely implementation.

Similarly, the "Water Resource Utilization through Bore Development and Solar System Installation" project, with a substantial allocation of PKR 736 million, targets expansion of cultivable land. Despite its scale, just PKR 30 million has been spent, which again highlights early-stage implementation and the risk of delays without focused administrative support.

The cold storage facility at Ameenabad, though vital for minimizing post-harvest losses in fruit and vegetable production, reflects an imbalance in funding execution-PKR 55 million already spent, yet the allocation for 2024-25 is only PKR 39 million, potentially disrupting continuity.

The final initiative, focusing on On-Farm Water Management (OFWM) components to uplift farming communities, suffers from the lowest execution rate (only PKR 3 million expended) and a high throw-forward of over PKR 155 million. This limits immediate impact on water efficiency and farming productivity.

As a whole, these projects indicate an acknowledgment of the pressing needs in water management and storage, but they fall short in addressing other strategic livelihood gaps identified earlier in this chapter-such as livestock productivity, skill-building for youth, agro-processing, and digital inclusion. There are no ongoing or proposed projects for vocational training, SME support, livestock healthcare, or market connectivity, all of which are essential to diversified and resilient livelihoods in Chagai.

To maximize their potential, the PSDP interventions need to be embedded within an integrated local economic development strategy, complemented by social mobilization, value chain support, and community-driven planning mechanisms

6.1.14 Linking Livelihood Opportunities with the draft 10-Year Plan (2025-26 to 2034-35)

The Government of Balochistan has drafted a 10-Year Development Plan that covers all socio-economic and infrastructure sectors. Although the plan has not yet been formally approved, several sectors directly related to livelihoods are included-such as industries, mining, agriculture, forestry, livestock, labour, and manpower/TVET. The Industries Department has initiated a feasibility study for establishing an industrial estate in Nok Kundi, while the Urban Planning and Development (UP&D) Department has been assigned the task of preparing a master plan for Nok Kundi town.

The draft 10-Year Development Plan of the Labour and Manpower Department, Balochistan, offers a significant opportunity to align local livelihood planning in the target areas with provincial-level employment and skill development strategies. The plan envisions expanding Technical and Vocational Education and Training (TVET) across Balochistan, with the aim of upgrading 30 existing institutes and establishing 47 new Technical Training Centers (TTCs), including separate facilities for male and female trainees.

For Chagai District as a whole, where limited technical training infrastructure and low digital literacy hinder livelihood diversification, this initiative can be transformational. Sector-specific training in agriculture, livestock, mining, renewable energy, and IT, as prioritized under Phase II of the plan, would directly address the skills mismatch observed in the district's youth population. Moreover, the introduction of mobile training units under Phase I could be pivotal in reaching scattered and remote settlements, especially in Nok Kundi and surrounding areas.

The plan's emphasis on overseas employment, with a target of sending 60,000 youth abroad by 2034, also aligns well with the target areas' livelihood improvement needs. Localizing this initiative by identifying and preparing eligible youth from the target areas could improve household incomes through remittances, while reducing pressure on the fragile local job market. Additionally, the establishment of entrepreneurship incubation centers and job placement cells in Phase II can address existing gaps in SME development and employment facilitation highlighted in this chapter.

To fully harness these opportunities, it is crucial that Chagai District is prioritized in the early phases of implementation, with tailored curricula, TTC site selection based on local demand, and active coordination between Labour, Agriculture, Livestock, Mines & Mineral, Industries , Science and IT Departments. Such alignment would bridge the current disconnect between production and employment sectors, making livelihood interventions more inclusive, skills-driven, and future-ready.

6.1.15 Access to Livelihood Finance and Enterprise Support Services

An important aspect of enabling inclusive livelihoods is access to microfinance, enterprise development support, and social protection schemes. In this regard, Akhuwat Foundation has emerged as a prominent organization providing interest-free microcredit to low-income households across Pakistan, including Balochistan.

A review of current Akhuwat branches across the province shows that no center exists in Chagai District, while branches are operational in 19 other districts including Quetta, Sibi, Pishin, Gwadar, Turbat, and Loralai. This absence highlights a critical service delivery gap in Chagai, where informal micro-enterprises, livestock-based livelihoods, and women-led household production units could greatly benefit from access to small, interest-free loans.

Given the prominence of the informal economy in the district, ranging from livestock rearing to handicrafts and small trade, introducing Akhuwat or similar community-based financial services in Chagai could be a high-impact intervention. Additionally, microfinance outreach could be linked with vocational training under the 10-Year Labour & Manpower Plan, enabling credit-backed self-employment opportunities.

6.1.16 Empowering Chagai's Future: Aligning Livelihood Development with Sustainable Development Goals (SDGs)

The comprehensive livelihood development strategy for Chagai District aligns strongly with multiple Sustainable Development Goals (SDGs), particularly SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 8 (Decent Work and Economic Growth), and SDG 10 (Reduced Inequalities). Through targeted investments in vocational training, microfinance, agriculture, livestock, SME development, and digital inclusion, the plan aims to reduce multidimensional poverty and promote inclusive economic participation, especially among women, youth, and rural communities. The integration of SDG 9 (Industry, Innovation and Infrastructure) and SDG 13 (Climate Action) is evident in the promotion of solar-powered irrigation, climate-resilient farming practices, and sustainable mineral processing SMEs. Furthermore, the alignment with SDG 4 (Quality Education) and SDG 5 (Gender Equality) is advanced through skill-building initiatives, mobile training units, and women-focused enterprise support programs. By advocating for decentralized governance, participatory planning, and local benefit-sharing of mining revenues, the strategy also supports SDG 16 (Peace, Justice and Strong Institutions) and SDG 17 (Partnerships for the Goals). Ultimately, this approach lays the foundation for resilient livelihoods, equitable growth, and sustainable development in one of Pakistan's most climate-challenged and economically marginalized districts.

6.2 Strategic Gaps in Livelihood Development

In stakeholder consultations, held during district and provincial workshops, there surfaced a number of strategic barriers that limit livelihood diversification and income security in the target areas. These gaps span across policy, infrastructure, human capital, financial inclusion, and digital access. The key strategic gaps are summarized below:

6.2.1 Policy Gap: Missing District-Level Livelihood Framework Despite Provincial Planning Commitments

The Government of Balochistan has articulated a long-term vision for inclusive growth through its draft 10-Year Development Plan (2025-2034), focusing on investments in infrastructure, education, skills, and employment. However, this provincial planning framework has yet to be localized for remote and climate-vulnerable regions such as Chagai District. Despite the unique economic profile of areas like Nok Kundi and Dalbandin, marked by a mix of agriculture, livestock, mining, and informal trade, there is no integrated livelihood development strategy that aligns provincial goals with grassroots realities.

Existing efforts remain fragmented, with limited coordination between sectors such as agriculture, livestock, mineral development, and youth services. The absence of a clear operational roadmap for implementing the 10-Year Plan at the district level will result in lost opportunities to address local unemployment, underemployment, and

income insecurity. Without such contextualized planning, the potential for inclusive and climate-resilient livelihoods remains largely untapped. To fully realize the 10-Year Plan's promise, a district-specific Livelihood Development Framework for Chagai is urgently needed. This framework should establish clear institutional roles, prioritize high-impact sectors, and integrate skills training, value chain development, and financial inclusion into a cohesive district strategy.

Existing development plans, such as the Balochistan Comprehensive Development and Growth Strategy (2020-2026), have struggled to move beyond paper due to chronic underfunding, limited institutional coordination, and lack of localized implementation mechanisms. At district level, this results in disjointed or delayed initiatives that fail to generate sustained livelihood outcomes for rural and peri-urban communities.

Despite growing youth populations and the potential for value-added activities in livestock, mining, and agriculture, Chagai (with the study's target areas) has no dedicated policy or program promoting rural entrepreneurship. Small and Medium Enterprise (SME) development remains underexplored, especially in women-led microenterprises and informal cross-border trade. Access to credit, training, market intelligence, and incubation facilities is negligible, constraining local economic dynamism.

6.2.2 Infrastructure and Industrialization Gaps

Chagai District faces widespread infrastructure constraints that hinder the expansion of diverse livelihood opportunities across its economic sectors. The district's vast geography, low population density, and challenging terrain have resulted in limited investment in essential infrastructure. While agriculture and livestock remain relevant for some rural households, a large portion of the population depends on mining-related employment, informal trade, cross-border commerce, and seasonal migration - all of which require infrastructure support beyond traditional farm needs.

Road connectivity is poor across much of the district, restricting access not only to markets for agricultural produce but also to border trade points, mining sites, and urban centers where employment is concentrated. Inadequate transport infrastructure increases the cost of doing business and limits mobility for job seekers and traders alike.

In mining zones like Saindak and Reko Diq, roads and utilities have been developed primarily to serve extractive operations, with minimal integration into broader district development. These enclaves lack backward linkages to local supply chains and forward linkages that could foster SME growth in services, repair work, or value addition. Industrial development beyond mining is absent, and no dedicated industrial estates, processing zones, or SME clusters exist to facilitate job creation.

In the agriculture sector, lack of cold chains, storage facilities, and agro-processing infrastructure reduces the profitability of crops such as pomegranate and melons. While a cold storage facility is under development in Ameenabad, broader post-harvest and logistics infrastructure is still lacking.

Energy access also remains a bottleneck. Many areas, including urban centers like Dalbandin and Nok Kundi, experience unreliable electricity supply, while rural communities rely on solar-powered solutions. These constraints limit small-scale manufacturing, service industries, and digital economy participation.
In the digital domain, weak internet connectivity and mobile coverage prevent youth from accessing online income opportunities such as freelancing, e-commerce, and digital training. The absence of vocational training centers further limits local capacity to benefit from infrastructure development where it does exist.

6.2.3 Financial and Economic Gaps

Despite the presence of entrepreneurial potential in agriculture, trade, and services, Chagai faces severe financial inclusion constraints that limit the ability of households to diversify or expand their livelihood activities. Access to formal banking, microfinance, and affordable credit is extremely limited, particularly in rural and border regions. As noted earlier, Chagai is among the few districts in Balochistan without an operational Akhuwat microfinance center, and commercial bank outreach remains minimal. This absence prevents aspiring entrepreneurs, especially women and youth, from accessing seed capital or growth financing for micro and small businesses.

Local traders and small-scale producers also suffer from weak integration into value chains and a lack of access to up-to-date market information. Agricultural markets are underdeveloped, and there are no institutional mechanisms for collective marketing or cooperative finance. Informal actors dominate much of the district's cross-border and mining-related trade, operating outside regulatory frameworks and thus lacking protections or incentives for reinvestment.

At the macro level, there is no district-specific financial inclusion strategy or targeted subsidy program that could buffer economic shocks or incentivize innovation. The absence of linkages between financial institutions and vocational training providers further limits the potential for employment-linked financing, such as startup grants or skills-based microloans.

6.2.4 Human Capital and Skills Gaps

According to the latest available population estimates, Chagai District has a projected population of approximately 285,273[22] in 2025. Youth (defined as individuals aged 15-29) constitute around 70,993 individuals, accounting for roughly 24.9% of the district's total population. This demographic pressure, coupled with an annual population growth rate of 2.93%, is expected to escalate the demand for employment, skill development, and enterprise opportunities in the near future. This demographic trend underscores the urgency of addressing the human capital deficit and ensuring that skill-building efforts are both inclusive and market-driven.

Chagai's human capital landscape is marked by a dual challenge: a growing youth population and a severe shortage of relevant education and skills training. The district lacks functional technical and vocational training centers, limiting opportunities for young people to acquire market-oriented skills. This is particularly concerning given the district's economic potential in mining, agriculture, renewable energy, cross-border trade, and digital services.

However, a notable development occurred in 2024 when Reko Diq Mining Company (RDMC), a subsidiary of Barrick, in partnership with The Hunar Foundation (THF), inaugurated a technical training center in Nok Kundi. This facility offers certified courses in carpentry, masonry, computer skills, and soft skills. Future plans include tailoring, plumbing, electrical work, welding, HVACR, and auto mechanics. This initiative is also supported by the Nok Kundi Community Development Committee (CDC), reflecting a locally anchored model of vocational education that can serve as a replicable success story.

While the RDMC partnership represents a significant step forward, the broader district still lacks widespread access to similar facilities, especially in Dalbandin and other remote areas. Women face even more barriers, with negligible access to skills training, digital literacy, or entrepreneurship programs tailored to their needs. The absence of mobile training units, job placement services, and career counseling further constrains their participation in formal or semi-formal employment sectors.

Further, the provincial 10-Year Labour and Manpower Plan proposes new Technical Training Centers, Chagai with only one technical training center under the Hunar Foundation, leaves majority of local youth disconnected from formal training pipelines. Women face even more barriers, with negligible access to skills training, digital literacy, or entrepreneurship programs tailored to their needs. The absence of mobile training units, job placement services, and career counseling further constrains their participation in formal or semi-formal employment sectors.

[22]Projections based on 7th Population and Housing Census 2023

Additionally, linkages between education institutions and market demand are weak. Curricula often fail to reflect the skillsets required by industries such as solar installation, cold storage logistics, livestock extension, or microenterprise management. Without targeted efforts to upskill the labor force, the district's potential for livelihood diversification will remain unrealized.

6.2.5 Lack of Freelancing and Digital Economy Opportunities

The remoteness of the target areas and underdeveloped digital infrastructure have excluded their youth from emerging income streams such as freelancing, e-commerce, digital content creation, and remote service delivery. As global demand for online services increases, the lack of enabling conditions in the target area, including poor internet connectivity, limited digital literacy, and the absence of digital incubation centers, prevents young people from participating in Pakistan's growing digital economy.

There are no public or private institutions offering structured training in freelancing platforms, digital marketing, or coding skills in the district. The absence of co-working spaces or community tech hubs further isolates those who might otherwise explore online income. Gender disparities are pronounced, as women face social and technical barriers to even basic digital engagement.

Despite national-level initiatives like DigiSkills and Kamyab Jawan, their outreach has not yet extended effectively into the areas due to logistical and awareness barriers. This represents a missed opportunity to leverage digital livelihoods for income generation, especially among educated but unemployed youth.

6.2.6 Governance and Stakeholder Collaboration Gaps

The effectiveness of livelihood development in the target areas is significantly constrained by weak governance structures and poor coordination among stakeholders. Line departments such as Agriculture, Livestock, Labor, and Industries often operate in silos, leading to duplication of efforts, resource inefficiencies, and missed opportunities for integrated development. Despite the presence of provincial frameworks and donor-funded projects, there is a lack of district-level platforms to harmonize interventions or align them with local needs.

Local government structures are under-resourced and underutilized, limiting their capacity to engage communities in planning, monitoring, and sustaining livelihood initiatives. Community-based organizations, where they exist, are seldom involved in decision-making or program design by the provincial or the district governments. This top-down approach has led to low ownership and sustainability of projects once external funding ends.

The disconnect between public, private, and civil society actors further hinders value chain development, skills training, and enterprise support. For instance, generally vocational training institutions are rarely linked to local employers or market demand, and microfinance institutions operate with limited engagement with local chambers or community groups.

6.2.7 Climate Resilience Gap

Chagai's harsh climate, marked by arid conditions, extreme temperatures, and frequent droughts, poses a persistent threat to livelihoods, especially in agriculture and livestock. Despite these risks, there is a lack of integration of climate adaptation into local livelihood planning. Water-intensive crops are still grown in areas with falling groundwater tables, and pastoralists lack access to fodder reserves or early warning systems for prolonged dry spells.

The absence of climate-smart agriculture strategies, weather-indexed insurance, or community-based resilience planning has left households exposed to repeated shocks. In particular, women and smallholder farmers are disproportionately affected due to their limited access to adaptive technologies and institutional support.

Moreover, infrastructure investments, such as cold storage, borewells, and solar pumps, are not systematically designed with climate resilience in mind. There is also no local mechanism to monitor environmental degradation, desertification, or climate trends, making adaptive policymaking difficult.

6.2.8 Information and Data Systems Gap

Effective livelihood planning relies on timely, disaggregated, and reliable data, but in Chagai, data systems remain severely underdeveloped. There is a lack of up-to-date and sector-specific data on employment patterns, income levels, labor migration, SME activities, and informal sector dynamics. District-level statistics, where available, are often outdated or aggregated at the provincial level, making it difficult to tailor interventions to local realities.

Line departments and development partners face major challenges in planning and monitoring due to the absence of digitalized records, integrated management information systems, and routine survey mechanisms. For instance, data on women's participation in agriculture, handicrafts, or informal trade is largely anecdotal and unrecorded, leading to underrepresentation in program design.

This gap also hampers resource allocation, impact evaluation, and adaptive management. Without reliable baseline data, livelihood programs struggle to measure effectiveness or pivot in response to emerging challenges like climate shocks or market disruptions.

Interventions

6.3 Short-Term Strategy (1-3 Years)

Policy and Institutional Reforms

As the Government of Balochistan considers developing a local benefit-sharing model to reinvest mining royalties into livelihood and human development programs, the short-term strategy should lay the groundwork for this by initiating district-level consultations and scoping studies. Chagai, being at the center of upcoming large-scale mining operations, is well-positioned to pilot this approach. Aligning with the constitutional provision that allows provinces to retain mineral royalties (Article 172(3)), the district can serve as a test case for developing transparent and participatory frameworks that could later be institutionalized across the province. This strategic thinking should inform provincial policy advocacy from the outset.

In the initial years of intervention, the focus must be on laying the foundation for integrated, cross-sectoral livelihood development through institutional restructuring and localized planning. Chagai's fragmented policy landscape and weak institutional coordination demand immediate action to operationalize provincial visions at the district level. Strengthening governance, creating collaborative mechanisms, and embedding local realities into district-level strategies are critical for unlocking the district's economic potential and for catalyzing results from future investments in agriculture, mining, trade, and skills.

Proposed Actions:

- Formulate a District-Level Livelihood Development Framework (DLLDF): Collaborate with the Planning & Development Department, Labour and Manpower, B-TVETA, Agriculture, Industries, Mines & Mineral Livestock and Science & IT departments to prepare a district-specific strategy that integrates local needs into provincial planning. The framework should be participatory and cross-sectoral.
- Activate District Livelihood Coordination Committee (DLCC): Create a multi-stakeholder forum led by the Deputy Commissioner to ensure regular coordination among government departments, NGOs, and community leaders, with a focus on identifying overlapping roles and aligning budgets.
- Assign Focal Persons in Key Line Departments: Ensure that each relevant department appoints a livelihood-focused focal person at the district level to support strategy implementation and stakeholder coordination.
- Initiate Policy Dialogues with Provincial Authorities: Use workshop outcomes and needs assessment findings to hold consultations with P&D and relevant secretaries for embedding the target areas' priorities in the 10-Year Development Plan and other sectoral strategies.
- Pilot Participatory Planning Tools: Introduce bottom-up planning tools (community resource mapping, value chain diagnostics) to inform annual district development plans with a livelihood lens.

Skill Development and Vocational Training

Investing in workforce development is critical to addressing the employment and skills mismatch in the target areas. With over 70,000 youth and a fast-growing population, the whole of the district needs immediate interventions that offer tangible learning and earning pathways. The newly inaugurated Hunar Foundation Technical Training Center in Nok Kundi, supported by RDMC, offers a replicable model for providing certified, market-aligned vocational courses. Building on this momentum and ensuring equitable access across the district, especially for women and remote communities, should be a core priority in the short term.

Proposed Actions:

- Expand Training through Mobile Vocational Units: Launch mobile skill centers to reach underserved areas such as Dalbandin, Mashkicha, Nokcha, and Doorbuncha, offering short courses in masonry, carpentry, tailoring, and digital skills.
- Strengthen Public-Private Skill Partnerships: Replicate the THF-RDMC model by engaging other mining companies and international development partners like UNDP, GIZ, and FAO etc. to fund and deliver relevant vocational courses, including certified modules on plumbing, auto-mechanics, and computer literacy etc.
- Fast-Track Women's Skill Programs: Initiate women-focused programs in stitching, embroidery, and e-commerce skills, using female trainers and safe training environments. Distribute basic toolkits (e.g., sewing machines) to promote post-training entrepreneurship.
- Support Soft Skills and Job Readiness Modules: Integrate communication, teamwork, and business literacy into all technical courses to improve placement and self-employment readiness.
- Link Training with Local Employers and Credit Schemes: Facilitate internships or post-training placements with SMEs, and connect graduates to micro-finance schemes for setting up small businesses.

Transitioning from Illicit to Legal Trade: A Phased Strategy

Chagai's proximity to the Iran border has long enabled informal and unregulated trade, most notably in fuel, which forms a significant, though precarious, part of the district's livelihood ecosystem. While this provides income to many households, it also perpetuates economic exclusion, legal vulnerability, and lost public revenue. Transitioning from illicit to legal trade must therefore be addressed as a deliberate, inclusive, and gradual process beginning in the short term and evolving through regulatory and infrastructure transformation over the medium and long term.

Proposed Actions:

- Conduct participatory mapping of informal trade routes, actors, and commodities to understand the existing ecosystem and identify opportunities for gradual formalization.
- Launch awareness campaigns and local consultations to highlight the benefits of formal trade, such as legal protection, access to finance, and public investments.
- Introduce simplified registration schemes and voluntary trader databases in Nok Kundi and Dalbandin.
- Offer incentives such as tax holidays or micro-grants for early adopters willing to shift to formal operations.

Mineral Processing based SMEs

As the Industries Department of Balochistan prepares to conduct a feasibility study for a dedicated industrial estate in Nok Kundi during the financial year 2025-26, short-term planning must lay the groundwork to align this development with local livelihood priorities. Coordination between district authorities and provincial planners should begin immediately to ensure that the future estate serves small-scale processing, repair services, and agro-industrial needs. Early identification of suitable land, preliminary stakeholder consultations, and resource mapping can be undertaken to streamline the planning-to-implementation transition.

Chagai's mineral wealth presents an untapped opportunity for broad-based livelihood development through small and medium enterprise (SME) promotion. The district is home to deposits of marble, granite, chromite, barite, and silica sand, but most extraction activities are raw-material focused, with little to no local processing or value addition. In the short term, targeted efforts to support mineral-based SMEs could generate employment, encourage entrepreneurship, and create linkages between extractive industries and the local economy.

Proposed Actions:
Establish a Local Mineral SME Incubation Center: Partner with the Small and Medium Enterprises Development Authority (SMEDA), Pakistan Mineral Development Corporation (PMDC), and the Mines & Mineral and Industries departments of the Balochistan Government to set up a business incubation center for small mineral ventures in Dalbandin or Nok Kundi.

Simplify Licensing for Small-Scale Mining: Collaborate with the provincial government to introduce streamlined, fast-track approval mechanisms for small-scale mining enterprises, especially for marble, granite, chromite, gypsum, and silica sand etc.

Promote Local Value Addition Units: Provide targeted incentives such as subsidized equipment, low-interest loans, and startup grants to encourage the establishment of marble cutting units, stone polishing workshops, and chromite refining plants.

Market Linkages and Export Facilitation: Create digital and physical platforms (e.g., mineral trade expos, online portals) to connect local producers with buyers in China, the UAE, and other international markets. Universities' graduates can be engaged in creating such platforms.
Technical Training for Artisanal Miners: Integrate modules on mining safety, business planning, and processing techniques into existing vocational training curricula to build capacity in artisanal and small-scale mining communities. Mines Directorate should take lead in collaboration with B-TVETA.

Small Business and Microfinance Support
In the target areas, micro-finance can play a transformative role in enhancing the impact of vocational training and entrepreneurship development. With increasing efforts to train youth and women in market-relevant skills, particularly through initiatives like the THF-RDMC training center, there is a growing need to link these graduates with accessible and affordable financial services. Providing credit support to trained individuals not only supports self-employment but also ensures the sustainability and scalability of vocational investments. Such linkages can also help create local service ecosystems (e.g., tailoring, carpentry, mobile repair) that offer income-generation within the community.

Many residents of the target areas, particularly women and youth, engage in informal trade, livestock rearing, handicrafts, and household-based micro-enterprises. However, most lack access to the credit and financial services needed to grow their ventures or transition into formal enterprise models. Given that the target areas lack micro-finance institutions such as Akhuwat and has limited commercial banking access, there is a need to support small businesses with tailored financial products, entrepreneurship services, and incubation models that suit the local context.

Proposed Actions:

- **Expand Microfinance Outreach:** Partner with organizations like Akhuwat, NRSP, and First Micro-Finance Bank to establish at least one micro-finance branch in Dalbandin and offer mobile banking solutions in outlying areas.
- **Launch Women's Enterprise Support Programs:** Provide group-based micro-loans, business mentoring, and revolving credit schemes to women-led enterprises in tailoring, food processing, and livestock.
- **Deploy Business Development Services (BDS):** Engage local NGOs and training institutions to offer coaching on bookkeeping, pricing, inventory, and customer service tailored for micro-entrepreneurs. Akhuwat model can be replicated with trainings offered by Akhuwat.
- **Facilitate Startup Grant Schemes:** Introduce small grant competitions linked to vocational graduates and community groups, especially targeting those trained in THF or similar centers. The program should prioritize innovative micro-enterprises that align with local resource use, such as tailoring, food preservation, mobile repair, or artisanal services. Grants should be complemented by business mentorship, financial literacy training, and linkages with local procurement networks (e.g., government departments or mining camps). Special focus should be given to women-led startups and those in underserved areas.

- **Pilot Community-Led Savings and Credit Groups (SCGs):** Drawing on the successful experience of NRSP in Pakistan and Village Savings and Loan Associations (VSLAs) across sub-Saharan Africa, pilot community-managed savings and credit groups in remote areas of Chagai. These models have proven effective in improving financial inclusion, fostering self-reliance, and building financial resilience where formal banking services are unavailable. In Chagai, such groups can provide working capital, support group-based micro-enterprises, and serve as a stepping stone to formal financial inclusion. Special emphasis should be placed on training, governance, and linking these groups with digital tools and local development initiatives.

Agriculture and Livestock Development

Despite the arid climate and limited water availability, agriculture and livestock remain key livelihood activities in several parts of Chagai, including the target areas. However, productivity is constrained by outdated techniques, inefficient water usage, weak veterinary services, and lack of access to quality inputs and extension support. In the short term, targeted and low-cost interventions can significantly improve the income-generating capacity of smallholder farmers and pastoralists. These actions should also complement other investments in water infrastructure and market development already planned under PSDP 2024-25.

Proposed Actions:

- **Promote Climate-Resilient Farming Practices:** Promote drought-tolerant crops and water-saving irrigation techniques such as drip and sprinkler systems, especially around borewell-fed zones. These practices are crucial in the face of declining water tables and recurring droughts. Partner with agricultural research institutes and extension departments to conduct localized trials of heat-tolerant crop varieties, particularly for pulses, millet, and oilseeds. Encourage farmer field schools and demonstration plots to showcase the comparative advantages of these technologies. Financial support should be provided through subsidized drip kits and training programs to improve farmer adoption, while linking these efforts with ongoing solarization and water resource management projects for sustainability.
- **Improve Veterinary and Extension Services:** Deploy mobile veterinary units and strengthen livestock vaccination campaigns. Revive agricultural extension outreach in remote areas where agriculture is possible.
- **Support Backyard Poultry and Fodder Production:** Provide input kits for backyard poultry and training on community fodder cultivation to enhance food security and animal health.
- **Link Livestock Keepers to Markets:** Facilitate access to regional and urban livestock markets through market information platforms and trader linkages.
- **Integrate Training with Agri-Livelihoods:** Offer vocational modules in greenhouse farming, solar-powered irrigation, and animal husbandry through THF or other local centers. Partnership with FAO can be highly productive. Partnerships with the Food and Agriculture Organization (FAO) can be explored to provide technical expertise, curriculum development, and training-of-trainers programs, particularly for climate-resilient practices and sustainable agriculture models. FAO's existing presence in Balochistan and experience in dry-land agriculture could enhance local training relevance and impact.

6.4 Medium-Term Strategy (4-7 Years)

In the medium term, the focus of livelihood planning in the target areas should shift from foundational efforts to deepening institutional reforms, scaling up productive sectors, and building sustainable infrastructure for inclusive growth. With the groundwork laid through short-term actions, this phase should promote economic diversification by strengthening policy execution, fostering industrial growth, and improving service delivery systems across sectors. Emphasis should also be placed on facilitating regional trade, particularly along the Iran border, and integrating new technologies into agriculture, livestock, and vocational ecosystems to improve productivity and resilience.

Policy and Economic Reforms

In the medium term, the target areas require consolidation and upscaling of the policy interventions initiated in earlier years. While short-term actions focus on institutional activation, the next phase must ensure policy implementation and accountability through structured plans, dedicated budgets, and sectoral alignment. Emphasis should be placed on strengthening fiscal planning, decentralization, and provincial-district coordination to ensure that local livelihood strategies are embedded in the development pipeline. Simultaneously, regulatory reforms should be introduced to encourage investment in SMEs, formalize informal labor markets, and promote transparency in mining and cross-border trade sectors.

Proposed Actions:

- **Operationalize the District Livelihood Development Framework:** Translate short-term planning frameworks into funded, annually updated action plans with clear targets and indicators. These plans should be integrated into the district's Annual Development Program (ADP) / Public Sector Development Program (PSDP) process, with each department assigning dedicated focal persons responsible for monitoring implementation. Standard operating procedures (SOPs) for annual review, target-setting, and interdepartmental coordination should be institutionalized through district-level planning cells. This will ensure that local priorities are not only documented but systematically resourced and followed through year by year.
- **Institutionalize Budget Allocation for Livelihoods:** Advocate for ring-fenced budget lines for livelihood initiatives across relevant departments at both provincial and district levels.
- **Update and Enforce Livelihood-Related Policies:** Review existing policies (e.g., mining regulations, SME support, agricultural marketing laws) and introduce amendments to improve inclusiveness and enforceability. In preparation for the commencement of large-scale mining operations in Reko Diq and Sia Diq expected around 2028-29, update local content and employment policies to ensure that Chagai's workforce (including the target areas) and small businesses benefit from supply chains and service contracts.
- **Formalize Informal Livelihoods:** Develop a simplified business registration and taxation mechanism to integrate informal traders, home-based workers, and seasonal laborers into formal safety nets. This could involve creating one-stop service kiosks at the Union Council or Tehsil level where mobile registration units and simplified digital tools can be used to issue business IDs, connect individuals with micro-finance providers, and provide access to social protection schemes. Special incentives (such as tax holidays or grant access) could encourage early adopters, especially among women-led businesses or cross-border informal traders.
- **Promote Interdepartmental Convergence:** Develop joint programming and data-sharing mechanisms among departments working in livelihoods (e.g., Labour, Agriculture, Industries, Livestock, Planning & Development).

Infrastructure and Industrial Growth

With foundational policy and planning frameworks in place, the medium term is the right phase to invest in core infrastructure and stimulate local industrial development across Chagai. The district's economic diversification is hampered by inadequate roads, unreliable energy supply, weak logistics, and the absence of structured industrial zones. Mining enclaves such as Reko Diq and Saindak, despite having dedicated infrastructure, lack backward and forward linkages with the local economy.

As large-scale mining operations are expected to commence around 2028-29, this period offers a critical opportunity to prepare the target areas to absorb spillover benefits through industrial infrastructure, skills alignment, and service economies. Industrial and agri-based SME zones, upgraded connectivity, and cross-border trade facilities will form the backbone of inclusive and job-rich growth.

Proposed Actions:

- **Develop Agro-Industrial and Mining Service Zones:** Identify and allocate land for dedicated SME clusters near Dalbandin and Nok Kundi with access to energy, storage, and logistics support to attract private investment. This includes aligning with the Industries Department of Balochistan's plan to conduct a feasibility study for an industrial estate in the financial year 2025-26, which may result in its development during the short-term strategy period. Once operational, this estate should be linked to broader industrial service delivery through value chain development, logistics integration, and support for ancillary service businesses (e.g., mechanical repair, packaging, construction). Policies should ensure that the estate becomes a hub for inclusive employment generation and industrial innovation across sectors
- **Upgrade and Expand Road Infrastructure:** Prioritize all-weather roads linking mining zones with Dalbandin, border markets, and agricultural catchments to reduce transport costs and enable mobility.
- **Establish Border Economic Hubs:** Collaborate with Pakistan customs and Industries & Commerce department to create regulated border trade points equipped with inspection facilities, banking kiosks, and logistics terminals to support informal traders and formalize commerce.
- **Transition from Illicit to Legal Trade (Medium Term Focus)**
  As foundational work begins in the short term, the medium term should prioritize infrastructure, capacity, and institutional changes to shift fuel trade and other informal economic activities into regulated systems. During this phase:
- Border trade facilitation centers can be developed in Nok Kundi to provide regulated alternatives to smuggling.
- Local trader cooperatives can be mobilized to serve as bridges between authorities and informal actors.
- Trade registration and licensing frameworks should be simplified and adapted to the realities of small-scale traders.
- Linkages with micro-finance and enterprise support services will further incentivize the transition.

Financial Sustainability and Investment

To sustain and scale livelihood opportunities in the target areas, there must be a gradual transition from donor or project-based financing models to more sustainable and diversified funding mechanisms. This includes mobilizing public-private partnerships, tapping into mineral royalties and local revenue sources, and incentivizing impact-oriented investments. With mining revenues expected to grow significantly in the coming years, particularly from large-scale projects like Reko Diq and Sia Diq, there is a critical opportunity to direct a portion of these resources toward local enterprise promotion, skills development, and infrastructure support. Ensuring transparency, local benefit-sharing mechanisms, and targeted reinvestment will be key to making economic growth more inclusive.

Technology Integration in Agriculture and Livestock

Agriculture and livestock continue to be important, though vulnerable, livelihood sources in Chagai, the medium term offers a critical window for modernizing these sectors through technology. Introducing low-cost digital tools, mechanization, and precision inputs can improve productivity, reduce labor burdens, and make resource use more efficient. With the rise of solar-powered irrigation, mobile veterinary services, remote sensing for land management, and smartphone-based farm advisory services, Chagai can leapfrog into more resilient and knowledge-driven agricultural systems.

Technology integration also helps bridge human capital gaps by offering simplified tools that even low-literacy farmers can adopt. Additionally, aligning these tools with local language content and community demonstrations will increase adoption and ownership.

Proposed Actions:

- **Deploy Digital Advisory Platforms:** Partner with agricultural universities, FAO, and tech startups to introduce mobile-based advisory services that deliver weather updates, planting calendars, and market prices in local languages. Government Innovation Lab (GIL) at University of Balochistan can play a vital role in this regard.
- **Promote Mechanization for Smallholders:** Facilitate group leasing or subsidy schemes for small tools such as solar dryers, tillers, and chaff cutters.
- **Digitize Livestock Services:** Introduce mobile apps and tele-vet platforms for animal health monitoring, vaccination alerts, and input tracking.
- **Introduce GIS and Remote Sensing Tools:** Train district agriculture offices in remote sensing and GIS applications for land classification, crop monitoring, and rangeland management. Forest department has fixed wing drone for surveys / mapping. The department's capability can be used to perform the above listed tasks.
- **Establish Agri-Tech Learning Hubs:** Create pilot technology demonstration plots and agri-tech corners at suitable places to showcase practical use cases for local farmers and herders.

6.5 Long-Term Strategy (8-12 Years)

The long-term phase of livelihood planning for the target areas must focus on consolidating earlier gains, institutionalizing inclusive governance systems, and transitioning the district toward economic self-reliance and global integration. By this stage, the aim is to foster sustainable industrialization, deepen value chains in mining and agriculture, and position the target areas as a border-linked economic hub. Emphasis should be placed on attracting long-term investments, building advanced financial systems, and embedding resilience through social protection, education, and digital infrastructure.

A future-ready target areas will require a workforce aligned with the global market, competitive SMEs, and governance systems capable of managing complex public-private partnerships. Leveraging mining revenues, diaspora networks, and export linkages will be essential to diversify income sources and elevate living standards.

Policy and Governance Strengthening

Over the long term, the focus in Chagai must shift toward embedding inclusive governance systems that can sustainably manage and deliver complex livelihood and economic programs. As large-scale mining and industrialization evolve, the district will require robust institutional frameworks capable of managing public-private partnerships, enforcing regulatory compliance, and ensuring equitable distribution of benefits.

Proposed Actions:

- **Establish District Livelihood Development Authorities (DLDAs):** Transform current coordination bodies into statutory authorities with budgetary and planning autonomy to institutionalize long-term livelihood governance.
- **Institutionalize Local Benefit-Sharing Mechanisms:** Ensure district-level frameworks for revenue reinvestment from mining royalties and trade to fund livelihood and human development programs. While Pakistan lacks a formal nationwide framework for local benefit-sharing, the Constitution (Article 172(3)) allows provinces to retain royalties. Balochistan can take lead by developing its own local royalty investment model, inspired by international practices such as Ghana's Minerals Development Fund and the Philippines' mandated community development spending. This could form the foundation of equitable growth in mining-affected areas.
- **Digitize District Governance Systems:** Introduce e-governance platforms for planning, service delivery, and feedback mechanisms, improving transparency and efficiency.
- **Embed Participatory Accountability Systems:** Institutionalize public hearings, third-party audits, and citizen report cards to monitor livelihood investments and service delivery.
- **Sustainable Industrialization and Economic Diversification:** An important aspect of this transformation is the development of validation industries, those that create a direct link between local skillsets and enterprise development. Over time, vocational training programs must be tied to emerging industrial needs, with emphasis on setting up local manufacturing, repair services, and agri-processing businesses that absorb trained youth and promote inclusive employment.

Infrastructure and Industrial Growth

During the later phases of implementation, the district must move beyond resource extraction toward a diversified economic base that adds value locally and distributes growth more equitably. The operationalization of large-scale mining projects such as Reko Diq and Sia Diq presents both an opportunity and a risk, without deliberate planning, the economy may remain overly dependent on one sector.

To avoid the 'resource curse,' sustainable industrialization must prioritize local supply chains, downstream processing, and service economies. This includes developing mineral-based manufacturing units, food processing industries tied to local agriculture, and renewable energy-linked services such as solar equipment maintenance. As infrastructure and connectivity improve, cross-border logistics, packaging, and warehousing could also emerge as viable sectors.

Diversification strategies should also leverage skills gained through vocational training and entrepreneurship support. SMEs, particularly those led by women and youth, must be integrated into public procurement systems, industrial zones, and export networks. Long-term efforts should focus on enabling institutions such as industrial estates, SME facilitation centers, and innovation hubs tailored to the region's realities.

Proposed Actions:

- **Leverage the Industrial Estate for Cluster-Based Growth:** Operationalize the industrial estate established during the medium term to promote cluster-based industries, particularly in mineral processing, agri-value addition, and logistics. Offer incentives to anchor firms that employ local youth and source locally.
- **Establish SME Facilitation and Export Hubs:** Develop dedicated centers to support small businesses with export certification, quality compliance, branding, and buyer matchmaking, especially in marble, dates, and processed food products.
- **Incentivize Renewable Energy Manufacturing:** Promote solar equipment assembly and repair units in Dalbandin or Nok Kundi as part of the broader shift toward clean energy services.
- **Advance the Benefit-Sharing Framework:** Building on early models piloted in the short term, enact a provincial legal framework that mandates reinvestment of mining royalties into district-level livelihood development funds.
- **Launch Cross-Border Economic Corridors:** Develop warehousing, inspection, and packaging facilities to promote trade with Iran and Central Asia. Facilitate partnerships with customs and trade facilitation agencies.
- **Create Youth Innovation and Startup Zones:** Dedicate space within industrial or SME estates for youth-led startups, with subsidized rent, incubation support, and access to digital tools.

Advanced Financial and Investment Systems

In the target areas, the financial architecture must evolve to support larger and more complex transactions, foster private investment, and extend inclusive financial services. Long-term financial planning should focus on building a localized investment ecosystem that includes commercial banking, and credit guarantee schemes.

With mining royalties expected to increase significantly, mechanisms for pooled reinvestment, such as a District Livelihood Fund, can be institutionalized. Additionally, financial inclusion must be expanded through digital banking, fintech solutions, and tailored products for small businesses, women entrepreneurs, and youth-led enterprises. Investment readiness programs and enterprise development accelerators should be established to support scalable ventures in production sectors.

To attract external investment, there will be need to have improved regulatory clarity, investor facilitation desks, and bankable project pipelines in the target areas, may be centered at Dalbandin or Nok Kundi. Aligning with national economic corridors and export plans will further open up financing options from federal agencies and international donors.

Proposed Actions:

- **Operationalize a District Livelihood Fund:** Institutionalize a Chagai-specific fund sourced from mining royalties, donor financing, and public-private contributions to finance enterprise development, training, and infrastructure for inclusive growth.
- **Introduce Fintech-Based Financial Services:** Partner with fintech providers to pilot mobile-based banking, micro-loans, and insurance platforms tailored for livestock keepers, traders, and youth entrepreneurs in remote areas.
- **Develop Investment Readiness Programs:** Establish district-level training and advisory services for SMEs to improve bankability, pitch readiness, and investor linkages, especially in sectors like solar equipment repair, date processing, and logistics.
- **Promote Credit Guarantee Schemes:** Work with provincial and federal financial institutions to introduce guarantee mechanisms that reduce the lending risk for startups and SMEs operating in the target areas.

Cross-Border and Regional Trade Integration

Although Taftan is the official trade gateway, the Nok Kundi region also holds potential for structured cross-border trade development, particularly given its location and emerging infrastructure under mining-linked growth. In the years ahead, Chagai can strengthen its role in regional commerce by formalizing informal trade practices, promoting local logistics services, and creating regulatory and physical infrastructure that supports legitimate small-scale exports and imports.

The region's trade integration strategy should aim to gradually transition from unregulated exchanges to regulated, community-benefiting commerce. This will require coordination with federal customs, provincial trade departments, and local institutions to promote transparency, build trader capacity, and leverage mining-related transport corridors.

Proposed Actions:

- **Develop Local Trade Facilitation Points in Nok Kundi Region:** Explore the establishment of community-scale, regulated trade facilitation infrastructure near Nok Kundi, including warehousing units, inspection counters, and registration desks that serve informal trade channels. This would improve livelihoods and reduce dependency on illicit trade.
- **Digitize Cross-Border Trade Processes:** Introduce electronic systems for export documentation, customs filing, and trader registration to reduce delays and enhance transparency.
- **Enhance Trade Facilitation Skills:** Provide training for local entrepreneurs and SMEs on export requirements, product standards, and international marketing strategies.
- **Promote Bilateral Trade Forums:** Facilitate trade cooperation dialogues between Balochistan and Iranian counterparts to align market access, product standards, and transit agreements.
- **Support Export-Ready Enterprises:** Assist promising SMEs in scaling up operations to meet export quality benchmarks, including packaging, labeling, and logistics readiness.

Transition from Illicit to Legal Trade (Long Term Focus)

By this stage, Chagai's trade system should be fully regulated and formalized. Community-level trade zones can be institutionalized with digital customs systems and integrated into national trade corridors. Revenues from formal trade should be reinvested into infrastructure, education, and welfare to build long-term community support for legal commerce and reduce relapse into informal practices.

7. Climate and Ecosystem Resilience: Native Plantation Strategies for Arid Landscapes

This chapter aims to provide a comprehensive overview of the climatic conditions of Chagai District, including Nok Kundi and Dalbandin, and assess their implications for development planning and community resilience. By analyzing temperature trends, rainfall variability, and extreme weather events, the chapter establishes the climate context essential for identifying local vulnerabilities and shaping sectoral interventions. The chapter also introduces nature-based solutions, such as strategic plantation, that contribute to long-term climate adaptation in this arid region.

7.1 Climate Resilience in Arid Ecosystems: Baseline Review of Native Plantation Approaches

Understanding the local climate is critical to designing interventions that are context-appropriate and sustainable. In arid and semi-arid regions like Chagai, climate dictates the availability of water, the viability of agriculture and livestock, and the resilience of infrastructure. A clear grasp of climatic risks enables targeted planning for disaster risk reduction, water resource management, health protection, and environmental sustainability.

7.1.1 Climate Classification

Köppen-Geiger or National Classification According to the Köppen-Geiger climate classification system[23], the Chagai District falls under the category of BWh - Arid Desert, Hot. This classification reflects the region's prolonged dry periods, high solar radiation, and minimal annual precipitation. The Pakistan Meteorological Department also categorizes this region as part of the "Dry Arid Zone," which covers much of western Balochistan.

The study area, encompassing Nok Kundi, Dalbandin, and other parts of Chagai District, is characterized by:

- Extremely low annual rainfall averaging less than 100 mm.
- Very high summer temperatures often exceeding 45°C.
- Wide diurnal temperature variation, especially in winter months.
- Frequent dust storms and dry winds, particularly from March to July.

There are no major sub-climatic variations within the district due to the homogeneous desert terrain, though slightly cooler temperatures may be observed in elevated zones and at night. Overall, the district exemplifies the harsh and dry environmental conditions typical of the western edge of the South Asian arid belt.

7.1.2 Temperature Trends

Eleven years (2010-2020)[24] weather has been analyzed for this study data. The time series climate data for Dalbandin, comprising over 4,300 daily entries, provides critical insight into the region's temperature patterns, atmospheric moisture, wind behavior, and rainfall variability. This data-driven analysis underpins the need for tailored climate adaptation and land management strategies.

The mean daily temperature is approximately 26.3°C, with extremes ranging from 2.1°C (min) to 43.4°C (max). These figures underscore the high diurnal and seasonal temperature variability, a hallmark of desert ecosystems. The upper quartile temperature of 35.2°C indicates prolonged periods of heat stress, which affects both human health and agriculture, particularly during summer months.

[23]Beck, H.E., Zimmermann, N.E., McVicar, T.R., Vergopolan, N., Berg, A. & Wood, E.F. (2018). Present and future Köppen-Geiger climate classification maps at 1-km resolution. Scientific Data, 5, 180214. https://doi.org/10.1038/sdata.2018.214
[24]Source: Real-time Air Quality Monitoring Dashboard (Accessed March 27, 2025)

7.1.3 Dew Point and Humidity

The mean dew point of -2.39°C and low average relative humidity of 22.7% highlight the exceptionally dry air throughout the year. This dryness not only reduces soil moisture retention but also increases evapotranspiration rates-an essential consideration for water-sensitive crops. The dew point's minimum of -17.6°C reinforces the aridity of the climate, particularly in winter nights.

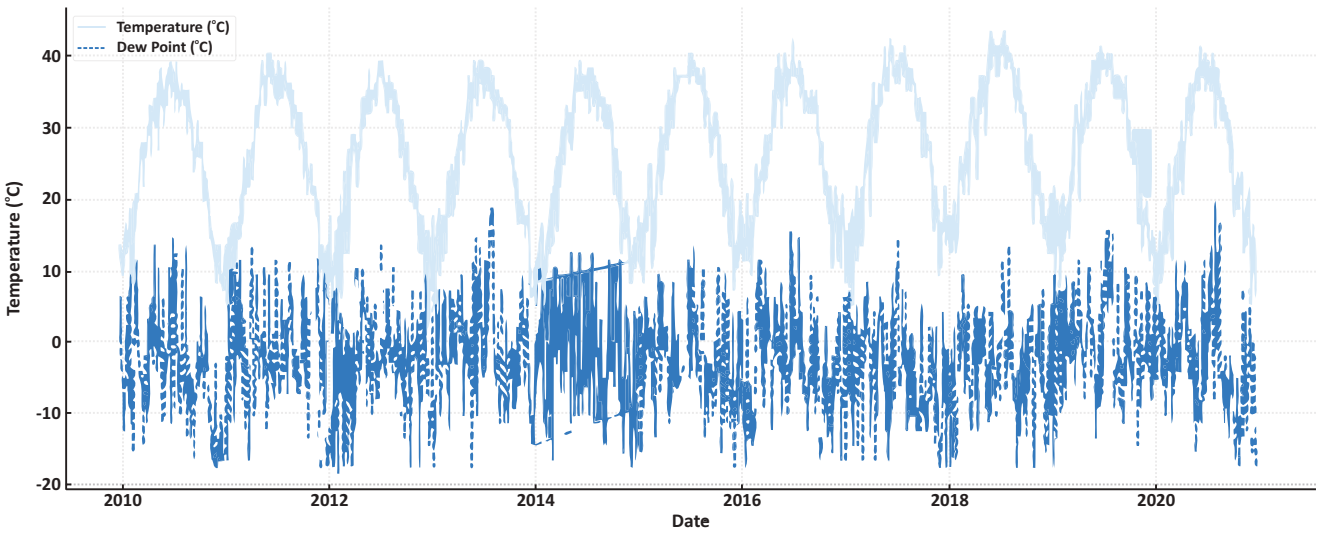


Figure 8: Temperature and Dew point Trends- Dalbandin

7.1.4 Wind Speeds

The average wind speed is 9.37 km/h, with occasional gusts reaching up to 36.2 km/h. This indicates potential for wind erosion, especially in areas with poor vegetation cover or overgrazed rangelands. Wind conditions must be factored into both agricultural planning and infrastructure development, especially for solar or microgrid systems.

7.1.5 Atmospheric Pressure

The observed atmospheric pressure values are consistent (mean ~30.86 mb), reinforcing the stable, dry, high-pressure system typical of continental deserts. The lack of low-pressure activity correlates with limited cloud cover and rainfall.

7.1.6 Precipitation Patterns

Dalbandin's mean daily precipitation is only 0.45 mm, with a median of 0 mm and 75th percentile also at 0 mm, indicating long stretches without any measurable rainfall. Occasional spikes (e.g., the maximum of 81.6 mm) suggest rare but intense rainfall events, likely associated with monsoonal intrusions or westerly disturbances. These characteristics point toward erratic rainfall and flash flood potential, necessitating infrastructure capable of rapid water capture and storage (e.g., check dams, tanks).

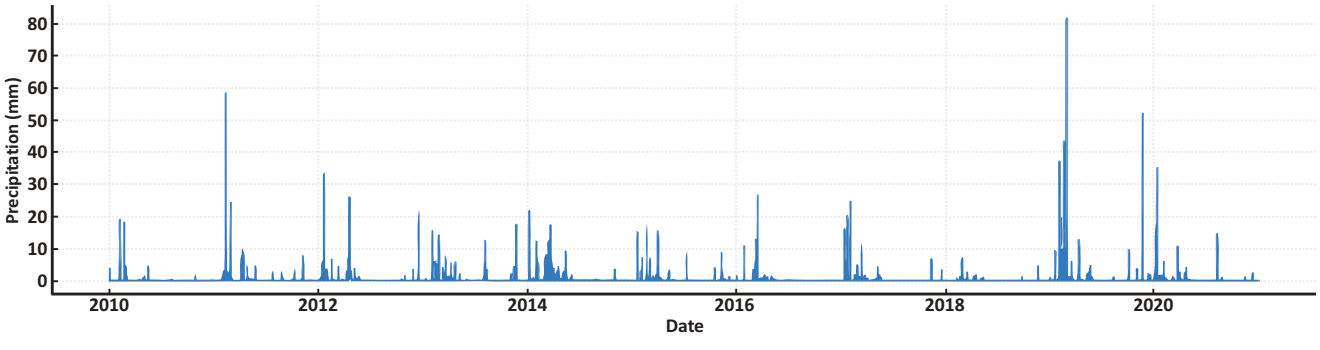


Figure 9: Precipitation Trend - Dalbandin

7.1.7 State of Plantation

Chagai District, including the Reko Diq mining area, features a diverse but sparse vegetation cover due to its arid climate, rocky terrain, and desert ecosystem. The target areas have minimal plantation due to a combination of harsh climatic conditions, poor soil quality, and limited water resources. Chaghi District lies in an arid to hyper-arid zone, characterized by extremely low annual rainfall (less than 100 mm), high temperatures exceeding 45°C in summer, and prolonged drought periods. The rocky and sandy terrain lacks sufficient organic matter, making it difficult for vegetation to establish naturally. Additionally, groundwater availability is scarce, and there are no major rivers or perennial water sources to support large-scale plantations. Over time, overgrazing by livestock, deforestation for fuelwood, and lack of afforestation initiatives have further degraded the land, leading to increasing desertification. The absence of structured green cover has also resulted in frequent dust storms, soil erosion, and rising surface temperatures, making the survival of new plantations even more challenging without proper intervention and water conservation strategies.

Locals of the area find plantation a big challenge. During workshops, distaste holders shared their experiences of planting trees saying that they planted trees but after a year or two the trees could not survive. It was highlighted that extreme hot summers kill trees and plantation, at times spells of cold effect plantation to death. Fiery sandstorms and gusts of strong winds also damaged plants.

The district's plant life is primarily xerophytic, meaning species have adapted to survive in extreme drought conditions, high temperatures, and poor soil fertility. The vegetation distribution varies across different landscape types, including steep rocky cliffs, any sort of hills, piedmont plains, and dry stream beds. Each of these zones supports distinct plant species, ranging from deep-rooted shrubs and desert grasses to salt-tolerant and medicinal plants.

The following table[25] outlines the major vegetation zones of Chagai District, describing their key characteristics and the dominant plant species found in each zone.

Table 21: Major Vegetation Zones, Chagai District

Vegetation Zone	Brief Description
Uphill steep	These mainly cover Koh-e-Sultan and Raskoh hills. In descending direction, we may see Pistacia khinjuk, Stochsia brahuica, Gymnocarpos decandrum, Pistacia terebiuthus, Prunus eburnea, and Periploca aphylla, etc.
Foothills	Here, the transition of vegetation cover takes place, and a mixture of both xerophytic and non-xerophytic plants can be seen. Main plant species include Tamarix macrocarpa, Tamarix articulata (Ghaz), Periploca aphylla, Prunus eburnea (Mazmung), Haloxylon ammodendron (Taghaz). The dominant shrubs in the region include Stochsia brahuica (Kotor), Zygophyllum atriplicoides, Tamarix gallica (Kiri), Astragalus hycanus, Calligonum comosum, Peganum harmala, Ferula asafoetida (Hing); it is both male (kularhing) and female (pauni hing), Nareum odorum(Jaur), Artemisia spp.; tenerium stocksianum (Kalpora), and Nanorops ritchiana (Mazri or dwarf palm). The shrub species generally inhabit this region at the base of hills and extend over the plains. The saline area also contains some plants like Salsola kali, Rhazya stricta, Alhaji camelorum, Salsola foetida, Haloxylon salicornicum and H. Griffithii. Artemisia meritima, Prunus eburnea (Wild almond), and Sophora griffithii (Ghuzaira) are also associated with herbs and grasses.

[25]District Development Profile, Chaghi, 2010, published by P&D department in collaboration of UNICEF

Piedmont plains	This area mostly covers the plains adjoining foothills. Common plant species are Salsola kali, Rhazya stricta, Alhaji camelorum, Salsola foetida, Haloxylon salicornicum, H. Griffithii, and Sophora griffithii (Ghuzaira). (Vitex agnus castus)is also associated with herbs and grasses.
Dry stream beds	Commonly found throughout the district, where Tamarix spp. and Nanorops ritchiana (Mazri or dwarf palm) are common.

To further understand the significance of these botanical species, the next table presents their corresponding scientific names, local names and practical applications.

Table 22: Plant Species with Local Names and Uses

	Scientific Name	Local Name	Uses	Salt tolerance
A.	**Outer Layer**			
1	Tamarix macrocarpa-7	Ghaz	Timber, erosion control	High
2	Tamarix articulata-8	Nali Gaz / Jhao	Fuelwood, soil stabilization	High
3	Haloxylon ammodendron-9	Taghaz	Sand dune stabilizer, firewood	High
4	Tamarix gallica-11	Shinger / Kiri	Grows in saline areas, fuelwood	High
5	Calligonum comosum-13	Pogh / Baggari	Stabilizes sand dunes	Moderate
6	Salsola foetida-23	Larag /Khara lani	Saline-resistant shrub	High
7	Haloxylon salicornicum-24	Rig-e-ghaz	Used for dune stabilization	High
B.	**Middle Layer**			
8	Periploca aphylla-6	Fisher / Barara	Traditional medicine, livestock feed	Moderate
9	Zygophyllum atriplicoides-10	Krech / Gawaneh	Traditional medicine, livestock feed	Moderate
10	Astragalus hycanus-12	Shin-maghz	Medicinal herb, drought-resistant	Moderate
11	Artemisia spp.-17	Tarkha/Zoon	Traditional medicine, fodder	Moderate
12	Tenerium stocksianum-18	Kalkor / Kalpora	Drought-resistant, medicinal	Moderate
13	Nanorops ritchiana-19	Mazri / dwarf palm	Handicrafts, mats, ropes	Moderate
14	Salsola kali-20	Shimsoor / Lani	Salt-tolerant, used for fodder	High
15	Nerium Oleander	Kanair	Ornamental (whole district)	Moderate
16	Callistemen spp	Bottle Brush	Ornamental (whole district)	Moderate
17	Salix spp	Willow	Ornamental (whole district)	Moderate
18	Cornocarpus erectus	Cono	Shady tree (whole district)	High
19	iProsopis cineraria	Kandi	Shady tree (chilghazi, Padag)	High
20	Prosopis spp	Mesquite	Shady tree (whole district)	Very high

21	Eucalyptus Camaldulensis	Sufaida	Shady tree (whole district)	Moderate
22	Rhazya stricta-21	Esharq /Ganda bair	Toxic medicinal plant	Moderate
23	Alhaji camelorum-22	Shinz/Tamar/ Shin-pat	Fodder, soil binder	High
C.	**Inner Layer**			
24	Punica granatum	Pomegranate	Fruit tree (for Dalbandin)	Low to moderate
25	Elaeagnusagustifolia	Sinjid	Fruit tree(Chagai, Ameenabad)	High
26	Pistacia spp	Shina/Gowan	Wild fruit (Amuri, Brabacha)	Moderate to high
27	Marus alba	Toot	Fruit tree (Chagai, Ameenabad, Barabcha)	Low to moderate
28	Olea europia	Olive	Fruit tree (Chagai, Taftan)	High
29	Pistacia khinjuk	Khinjak / Gowan	Edible nuts, timber, medicinal oil	Moderate to high
30	Pistacia terebinthus	Terpentini	Resin extraction, medicinal	
31	Prunus eburnea	Mazmung	Wild almond, fuelwood	Moderate
32	Peganum harmala	Spantan/ Isparag/Harmal	Medicinal, spiritual use	
33	Ferula asafoetida	Hing	Spice, medicinal	Sensitive
34	Nareum odorum	Jaur	Aromatic shrub	
35	Sophora griffithii	Kalmarka / Ghuzaira	Medicinal herb, associated with grasses	Sensitive
36	Vitex agnus-castus	Sumbal	Aromatic plant, used in traditional medicine	
	Multi-use			
37	Stochsia brahuica	Kandiari / Kotor	Used in local medicine	
38	Gymnocarpos decandrum	Mazrangi / Shod	Used for grazing	

7.1.8 Soils General Condition

Soils in this region are poor, sandy, rocky, and highly saline. Sandy and rocky soil drains too quickly and lacks nutrients there is saline soil contains high soul contents due to evaporation. Low water retention capacity in leads to frequent drying. Since freshwater is scares, and the groundwater is mostly brackish. Brackish water poses the challenge of high salinity, which damages plant roots and salt accumulation which in turn can kill sensitives species.

7.1.9 Soil Profile of Nok Kundi, Dalbandin, and Chagai

The soil in Nok Kundi, Dalbandin, and Chagai is primarily nearly leveled, deep, and strongly calcareous, with a medium-textured composition. It originates from piedmont colluvial and alluvial deposits, indicating that the soil has been formed through erosional processes from surrounding hills and sediment deposition over time[26] . The presence of calcareous material suggests high lime content, which can influence nutrient availability and water retention.

This type of soil is generally well-drained but may have limitations in fertility due to low organic matter. The dominant soil series in the region includes those found in Nok Kundi, Dalbandin, and Chagai, which are characteristic of arid environments. These soils support limited natural vegetation and require specialized irrigation and soil improvement techniques for successful agricultural or afforestation efforts.

7.3 Strategic Gaps in Climate-Responsive Afforestation and Ecosystem Restoration

7.3.1 Lack of District/Region Specific Afforestation Planning

There is no dedicated forestry or afforestation plan at provincial or district level to address the unique environmental and climatic conditions in the target areas. In the absence of plan, there is no target setting and hence annual plantation does not match the requirement. Resultantly, growing population is further adding to climate severity.

7.3.2 Lack of Research-Based Plantation Approaches

Every year plantation is carried out by the Forest department, Government of Balochistan and side-by-side small scale agriculture activities in the district continue. Plantation of Tree / shrubs by the communities or individuals is very limited. Since Forestry, agriculture and horticulture are not based on research and scientific knowledge, survival and maintenance challenges remain insurmountable. Primitive plantation technique is used even today. There's no treatment of soil with compost or manure after the plantation is completed. Limited engagement with universities, research institutions, and climate experts further restricts innovation in afforestation techniques.

7.3.3 Low Awareness and Communities' Participation

Both urban and rural communities are largely unaware of the importance of afforestation in mitigating climate change and improving local ecosystems. Even the fraction of population that understands the significance of plantation lacks technical knowledge on how to plant and sustain trees in arid environment with poor soil and freshwater scarcity. There is no structured campaign to engage communities in tree planting initiatives, despite their potential role in protecting and nurturing green cover.

7.3.4 Neglect of Forestry Sector at Provincial Level

Forestry sector gets less annual funding than the sector needs, in the development budget. While the 10 billion Tree Tsunami Project exists, its annual allocation is disproportionately low, failing to meet the afforestation requirement of all districts. Delays in funds disbursement further hinder the timely execution of seasonal plantation activities, reducing effectiveness.

7.3.5 Weak Stakeholder Coordination and Networking

There is no established platform for coordinating for station efforts among stakeholders, including government agencies, NGOs, mining companies and local communities. The absence of policy driven incentives does not encourage private sector investment in plantation initiatives / projects.

[26]https://ffc.com.pk/wp-content/uploads/5.-DISTRICT-PROFILES-1.pdf

7.3.6 Ineffective Monitoring and Evaluation System

There no result-based monitoring system to track plantation progress, survival rates, and overall impact. Annual tree planting initiative lack accountability, and there is no reliable data database to assess whether plantations thrive overtime. The only government nursery at Dalbandin is inadequate to meet the demand for seedlings / plants and it is not being used to its full capacity. No evaluation reports are conducted to analyze past plantation failures and improve future efforts.

7.3.7 Water City and Unsustainable Irrigation Methods

Freshwater scarcity in this region severely limits large scale afforestation. There's no comprehensive strategy for using treated waste water, rain water harvesting, or alternative irrigation techniques to sustain plantations. Drip irrigation and water efficient techniques are not widely adopted, leading to water wastage and inefficient plantation practices.

7.3.8 Climate Resilience and Policy Gaps

The hash climate conditions of Nok Kundi, Dalbandin and Chagai make afforestation highly challenging, yet no adaptive afforestation policies exist. No guidelines or legal framework enforcement green cover development around highways and urban settlement or industrial zones. Drought-resistant and salt-tolerant species are not sufficiently promoted in afforestation drives, further reducing plantation success rates.

8.4 Short-term Strategy: Early Action for Greening Arid Landscapes

1. Launch District-Level Green Belt and Demonstration Plantation Initiatives

To address the complete absence of region-specific afforestation plans (Gap 7.3.1), green belts should be established in high-visibility and high-impact zones-such as around residential colonies, schools, hospitals, the Reko Diq mine site, and public facilities. These green belts will:

- Serve as live demonstrations for layered plantation approaches.
- Improve air quality and mitigate the urban heat island effect.
- Create green cover buffers in high-dust zones.
- Provide model layouts for replication by other stakeholders.

2. Shift to Mature Tree and Shrub Transplantation for Higher Survival Rates

In light of low survival rates and poor post-plantation maintenance (Gap 7.3.2), the strategy should focus on transplanting mature trees and climate-adapted shrubs over seedlings. While this approach involves higher upfront cost, it:

- Greatly increases survival in harsh, arid environments.
- Reduces long-term irrigation and replacement costs.
- Allows faster creation of shade and ecosystem services.

Establishment of local nurseries, including strengthening the Forest Department nursery at Dalbandin, will ensure supply of mature, climate-resilient species while also supporting local livelihoods.

3. Mobilize Stakeholders through a Coordinated Plantation Framework

To address weak coordination and policy disconnection (Gap 7.3.5), RDMC should lead the establishment of a District Afforestation Coordination Platform, involving:

- Forest & Wildlife Departments
- Education, Health, Local Government & Rural Development
- NGOs and CBOs
- Community elders and school networks
- Technical experts (soil scientists, horticulturists)

This body will oversee annual target-setting, site identification, layout design, watering assignments, and reporting. Coordination meetings should precede each plantation cycle.

4. Develop and Disseminate Standardized Layouts and Spacing Plans

To respond to the lack of research-based plantation approaches, standardized but locally adapted layered plantation designs should be developed and disseminated to all implementing partners. These include:

- Outer layer (wind and sand barriers): 3m spacing
- Middle layer (dense shrubs and small trees): 1.5-3m spacing
  Inner layer (broad canopy trees): 4-6m spacing

Simple pictorial guides and videos may be prepared to train school staff, NGO workers, and contractors on layout execution.

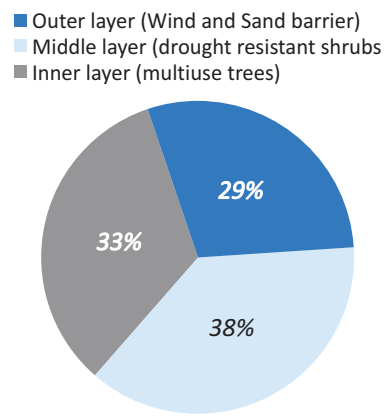


Figure 10: Proportion of Plantation Layers

5. Pilot Public-Private Watering and Maintenance Contracts
Addressing the chronic failures in plantation maintenance, the short-term strategy should introduce performance-based private watering and maintenance contracts. These contracts must:

- Specify watering schedules (e.g., twice a week or as per species)
- Include replanting responsibility in case of mortality
- Link payments to verified survival rates
- Be awarded to local youth groups or SMEs, generating employment

6. Promote Soil Health and Water Efficiency
Given severe water scarcity and soil salinity the following should be initiated:

- Introduce soil amendment protocols using compost, manure, and mulching.
- Deploy drip irrigation systems wherever technically feasible.
- Test saline-resistant planting near brackish water zones.
- Implement bi-monthly soil testing campaigns, starting with major pilot sites.
- Introduce periodic freshwater flushing: In areas using brackish water, apply freshwater irrigation every two months to flush out accumulated salts from the root zone and prevent long-term salinization of the soil.

To further support efficient water use and plant survival, especially during the early establishment period, a structured watering schedule should be adopted based on plant type and growth phase, as shown below:

Table 23: Watering Frequency Guidelines for Arid Zone Plantation

Plant type	Initial phase (1st year)	Mature phase (2 + Year)
Wind break trees (tamari, Haloxylon)	Twice per week	Every 2-3 weeks
Drought- resistant shrubs	Once per week	Every 3-4 weeks
Multiuse trees (Pistacia, Prunus, Ferula)	Twice per week	Every 10-15 days

7. Build Community Awareness and Skills
To overcome low awareness and poor public participation, RDMC, in collaboration with education and local government departments, should:

- Launch community plantation drives during key environmental days.
- Train schoolchildren and local groups in planting and watering.
- Mobilize religious leaders and elders for plantation advocacy.
- Promote climate-literacy sessions through radio and mobile platforms.

8. Lay Groundwork for Monitoring and Digital Tracking
In response to the absence of data and accountability, RDMC should pilot:

- Simple monitoring apps for field staff to log plantation sites and survival.
- Annual public plantation audits with third-party involvement.
- Use of satellite or drone imagery (if feasible) to validate plantation coverage.

8.5 Medium-term Strategy: Advancing Ecosystem Restoration and Resilience

The medium-term strategy (4-7 years) focuses on expanding and institutionalizing afforestation efforts through multi-stakeholder collaboration, climate-adaptive practices, and integration with future urban and industrial development. With ecological pressures intensifying due to upcoming large-scale mining and energy infrastructure, this phase emphasizes resilience-building through landscape restoration and emissions offsetting.

1. Expanding Multi-Stakeholder Collaboration for Plantation

To enhance the scale and sustainability of afforestation efforts, stronger partnerships are needed between government departments, RDMC, industrial developers, NGOs, and communities. Establishing formal coordination frameworks during this phase will ensure long-term ownership, cost-sharing, and alignment with industrial and infrastructure planning.

2. Developing Green Buffers around Urban and Industrial Zones

The Industries and Commerce Department, Government of Balochistan is planning a feasibility study for an industrial estate in Chagai district. As part of this medium-term strategy, green belts should be established around:

- Emerging urban settlements, especially in Dalbandin and Nok Kundi
- Future industrial zones, particularly near Reko Diq

These green buffers will:

- Reduce the urban heat island effect and industrial heat emissions
- Capture airborne dust and emissions
- Improve microclimates and air quality for nearby populations

To ensure sustainability:

- Integrate efficient water management systems such as drip irrigation, rainwater harvesting, and reuse of treated wastewater
- Fence plantation sites to prevent livestock intrusion
- Install basic monitoring infrastructure for plant survival tracking

Such interventions will support climate adaptation, enhance public health, and ensure that environmental sustainability coexists with economic growth.

3. Initiating Cluster Plantations to Offset Industrial Emissions

The planned 150 MW Heavy Fuel Oil (HFO)-based power plant near Reko Diq is expected to generate annual CO? emissions between ~780,000 to ~1.3 million metric tons. Offset estimates suggest:

- A complete HFO-based plant would require 40 to 59 million trees for full carbon offset
- A hybrid model (solar + HFO) would still necessitate millions of trees

To mitigate this impact:

- Launch cluster plantation models around Reko Diq, Nok Kundi, and Dalbandin
- Prioritize native, drought-resistant, and fast-growing species for carbon sequestration and dust control
- Engage mining companies and RDMC in co-financing offset plantation programs
- Implement satellite and GIS-based monitoring to track afforestation performance

These plantations will function as critical green infrastructure for air purification, soil retention, and ecosystem stabilization in an increasingly industrialized zone.

4. Establishing a Dedicated Plantation Fund
To institutionalize plantation financing, a Plantation and Landscape Restoration Fund should be created at the district level, with contributions from:

- RDMC and industrial partners as part of corporate social responsibility (CSR)
- Government allocations
- Development partners and environmental grants

The fund would support nursery development, water infrastructure, plantation maintenance, monitoring, and community engagement.

5. Reusing Treated Wastewater for Afforestation
Given the chronic freshwater scarcity in Chagai, treated municipal or domestic wastewater presents a reliable alternative for sustaining plantations. Medium-term actions should include:

- Assessing the availability and quality of treated wastewater from Dalbandin and Nok Kundi
- Designing pipelines or water transport systems to plantation sites
- Ensuring periodic freshwater flushing to If 150 MW power plant, planned at Reko Diq, is completely based on heavy fuel oil (HFO), its CO? emissions would require 40 to 59 million trees for offset, depending on efficiency and usage. If it is hybrid of solar and HFO, still millions of trees will be required to offset the carbon emissions.

8.6 Long-term Strategy: Sustaining Ecosystem Recovery and Climate Resilience

The long-term strategy (8-12 years) aims to consolidate gains from earlier phases and transition Chagai's afforestation efforts into a fully institutionalized and climate-resilient landscape management system. By this stage, the goal is not only to expand green cover but to embed ecological restoration within local governance, community behavior, industrial development, and environmental policy frameworks.

In the face of climate extremes, rising industrial activity, and growing population pressure, long-term success will depend on embedding adaptive, science-based afforestation practices across institutions and society. Focus must shift from planting trees to sustaining functioning green ecosystems that provide shade, carbon sequestration, dust suppression, and biodiversity benefits over decades.
Key pillars of this strategy include:

1. Institutionalize Ecosystem Stewardship at the District Level

- Establish a District Green Infrastructure Authority or designate a dedicated unit within local government to oversee plantation, monitoring, soil health, and ecosystem conservation.
- Embed long-term afforestation goals within Chagai's development plans and link them to land use regulations, mining agreements, and infrastructure projects.
- Ensure regular budget allocations and staff appointments dedicated to green infrastructure and environmental planning.

2. Integrate Afforestation with Urban and Industrial Planning

- Ensure that every new urban expansion, road corridor, and industrial estate includes mandatory green buffers and tree cover targets.
- Enforce green cover provisions in Environmental Impact Assessments (EIAs) for mining and infrastructure projects.
- Use legal instruments to mandate re-greening of degraded zones, particularly around former mine sites or exhausted bore fields.

3. Strengthen Research, Innovation, and Local Capacity

- Partner with universities, climate research institutes, and the Forest Department to develop climate-resilient plantation models, backed by long-term survival data.
- Introduce adaptive plantation techniques such as species mixing, soil bio-engineering, and shelter belt systems tailored for arid climates.
- Expand local training programs on nursery management, dryland afforestation, and eco-hydrology to build a professional green workforce.

4. Promote Ecosystem-Based Adaptation (EbA)

- Transition from isolated plantation efforts to landscape-level ecosystem restoration, linking rangelands, green belts, and biodiversity corridors.
- Encourage agroforestry and silvopastoral[27] systems in areas with water access to blend conservation with livelihood generation.
- Restore native vegetation in critical catchments and wind corridors to enhance climate regulation and reduce dust hazards.

5. Digital Monitoring and Citizen Engagement

- Operationalize digital tools for plantation tracking, soil health, and survival rates using GIS, drones, and mobile apps.
- Institutionalize citizen monitoring platforms and involve schools, women's groups, and youth in reporting plant health and protection issues.
- Promote a "One Person, One Tree" culture across the district to foster lifelong community ownership.

6. Climate Policy Integration and Legal Backing

- Advocate for provincial legislation to back long-term greening targets and enforce compliance among industries and public institutions.
- Incorporate afforestation indicators into climate adaptation frameworks, mining benefit-sharing policies, and resilience benchmarks.
- Establish a district-level ecosystem resilience index to guide long-term planning and resource allocation.

8.7 Advancing SDG 6, 13 & 15 through Native Afforestation: A Climate and Ecosystem Resilience Strategy

The native plantation strategy for in the study's areas directly supports several Sustainable Development Goals, notably SDG 13 (Climate Action) through climate-resilient afforestation and carbon offsetting measures, and SDG 15 (Life on Land) via the restoration of degraded arid ecosystems. By prioritizing salt-tolerant and drought-resistant native species, the plan fosters biodiversity conservation and ecosystem services critical in desert environments. Additionally, the approach contributes to SDG 6 (Clean Water and Sanitation) by promoting efficient irrigation, rainwater harvesting, and treated wastewater reuse in water-scarce regions. Institutional coordination, community engagement, and public-private partnerships integrated into the strategy also advance SDG 17 (Partnerships for the Goals), while greening initiatives linked with urban planning and industrial development support SDG 11 (Sustainable Cities and Communities). Finally, job creation through nursery development, watering contracts, and green infrastructure oversight reinforces SDG 8 (Decent Work and Economic Growth). Collectively, the strategy embeds ecosystem-based adaptation into Chagai's development planning, paving the way for long-term resilience and environmental justice in one of Pakistan's most climate-vulnerable districts.

[27] Silvopastoral systems refer to land management practices that integrate trees, pasture, and livestock grazing on the same land to enhance productivity, restore ecosystems, and improve resilience-especially valuable in arid regions like Chagai.

8. Energy

Energy access remains a critical development challenge for Balochistan, particularly in the mineral-rich but underserved regions around Reko Diq. With major infrastructure and population shifts expected due to mining activity, there is an urgent need to assess current energy patterns, identify service gaps, and propose forward-looking solutions.

8.1 Current Energy Landscape

In the context of the needs assessment study for areas surrounding the Reko Diq mine site, particularly Nok Kundi and Dalbandin, household energy usage patterns reveal significant disparities in access to modern energy sources. Housing and Population Census 2023 data shows that in urban areas, electricity remains the dominant source of lighting, with usage rates as high as 97% in some localities, whereas rural areas exhibit a higher dependence on solar panels, with over 56% adoption (Chagai). This indicates a strong penetration of off-grid renewable energy solutions in less electrified regions. Conversely, cooking fuel choices demonstrate a stark rural-urban divide, with rural households heavily reliant on firewood (over 75% in some areas), while urban centers exhibit a more diversified fuel mix, including LPG/LNG and piped gas. Particularly in areas like Chagai Urban, over 52% of households use LPG/LNG, highlighting better infrastructure and access to modern fuels. The data underscores the urgent need for targeted energy policies that enhance electrification in remote areas and promote cleaner cooking fuels to reduce reliance on biomass, improving both environmental sustainability and public health outcomes.

The following graph illustrates these patterns across the target areas (both rural and urban areas), highlighting the contrasts in household reliance on different sources of lighting and cooking fuel.

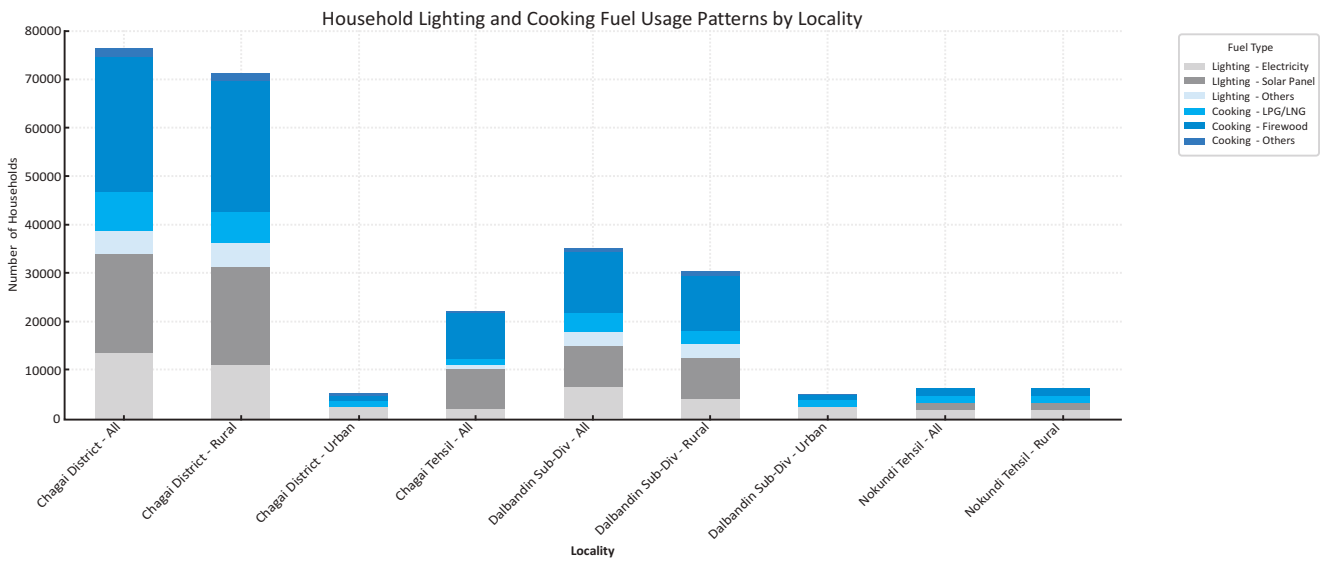


Figure 11: Household Lighting and Cooking Fuel Usage Pattern by Locality

While Census 2023 offers a snapshot of lighting and cooking sources, deeper issues such as energy affordability, reliability, and safety remain under-documented. In remote areas of Chagai like Nok Kundi / Dalbandin electricity is often available for less than 8 hours/day, and solar installations face higher costs due to transport and servicing constraints.

8.2.1 Reko Diq and Beyond: A Renewable Future for Balochistan's Mining Heartland

Chagai District, particularly the areas around Reko Diq and Saindak, is at the forefront of Balochistan's mining-driven energy transformation (World Bank, 2024). Current mining operations consume about 63 MW (Copper and gold mine of Saindak presents a peak load of 50 MW whereas other small mines including those for coal, barite, and other minerals consume only 13 MW of peak power)[28] , mostly supplied by high-cost and polluting fuels like HFO and crude oil. By 2028, this demand is projected to rise significantly, with Reko Diq alone requiring 150-300 MW, potentially pushing the total mining energy demand to 226 MW or more. Hello Rabbi I'm combo to share some of the

In parallel, Chagai also stands out as one of the world's most promising sites for wind-solar hybrid energy generation. The proposed Chagai GW Hybrid Park, near Reko Diq, has the capacity to deliver up to 6 GW of solar PV and 3 GW of wind power, evacuated via a 4-9 GW HVDC transmission line. Electricity from this hybrid park could be generated at around US$0.08/kWh, com I parable to new hydropower, with far shorter deployment timelines.

This convergence of high industrial energy demand and exceptional renewable energy potential offers a unique opportunity. If leveraged, renewable energy could:
1. Reduce energy costs for mining operations by up to 50%,
2. Power nearby communities like Nok Kundi and Dalbandin, which currently face electricity shortages and high off-grid energy costs,
3. Stimulate regional development through job creation, energy infrastructure, and local electrification.

The following simulation graph underscores this opportunity. It presents the seasonal and diurnal electricity output profiles of 1 MW of installed PV and wind capacity in Chagai, highlighting the complementary nature of the two energy sources. While PV generation follows a strong and consistent daytime pattern throughout the year, wind output remains variable but significantly higher during summer months, especially from June to August, making the hybrid configuration highly effective for meeting year-round energy demand.

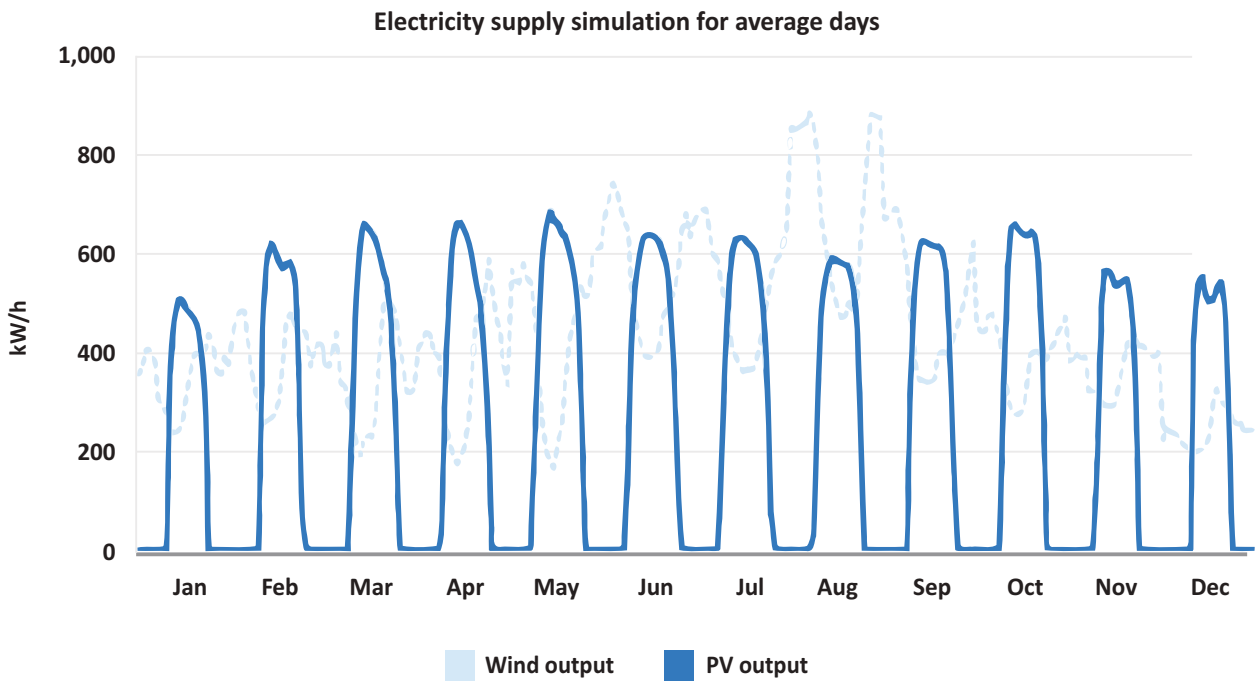


Figure 12: Electric Supply Simulation for Average Days

[28]World Bank, Balochistan Renewable Energy Development Study (Washington, DC: World Bank, 2021), accessed on April 8, 2025, https://documents1.worldbank.org/curated/en/099062824120532780/pdf/P1693131b87ed40ae19fee1d3a5a6d0db68.pdf

The PV output profile in Chagai is slightly better compared to other provinces due to superior solar irradiance levels. Combined with robust wind speeds (up to 10 m/s at 100m), this reinforces Chagai's status as a globally competitive location for solar-wind hybrid systems that can meet both industrial and community energy needs sustainably.

However, these benefits hinge on closing critical data and infrastructure gaps, such as:

- Energy reliability and affordability metrics at the community level,
- Localized renewable energy feasibility and mini-grid models,
- Community-level access to energy for productive uses,
- And integration of mining and public electrification planning.

The lack of granular data limits effective planning and targeting of energy interventions in remote areas like Nok Kundi and Dalbandin, which are on the frontline of upcoming economic activities around the Reko Diq mine site.

To address these gaps, the following table identifies critical missing data areas, summarizes the current status based on available estimates or anecdotal evidence, and recommends targeted actions for future assessments. These insights can inform energy sector strategies and help prioritize investments that are equitable, sustainable, and aligned with the needs of underserved populations.

Table 24: Framework for Addressing Energy Data Gaps and Planning Priorities

Energy Dimension	Current Status (Chagai)	Recommended Action
Electricity Reliability	No official data; anecdotal reports suggest <8 hours/day in some areas	Conduct localized energy reliability surveys
Affordability of Energy Sources	No disaggregated data; estimated household monthly costs Rs. 2000 to 3500	Include energy spending questions in household surveys
Energy Safety	No systematic data; firewood smoke exposure common in rural kitchens	Assess indoor air quality and injury reports in health data
Appliance Ownership	No figures; proxy PSLM data shows <10% fridge/fan ownership in rural areas	Baseline survey on energy-related assets
Energy for Productive Use	Qualitative evidence only; limited use for water pumps/small businesses	Identify existing and potential productive energy uses
Institutional Energy Access	Census does not capture energy access in schools/clinics	Map energy availability in institutions (schools, BHUs)
Community Preferences	Pilot studies suggest high interest in solar, but cost/service is a barrier	Community energy needs assessments through FGDs
Renewable Energy Feasibility	No site-specific study; Chagai has high solar potential (6.2 to 6.8 kWh/m²/day)	Technical feasibility studies for microgrids/solar water pumps
Gendered Access to Energy	Gender-disaggregated energy use data is missing	Integrate gender lens into energy planning
Maintenance and After-Sales Service	Maintenance gaps reported in solar projects; no hard data available	Support after-sales service models in remote areas

8.2 Strategic Gaps in Energy Sector

8.2.1 Policy and Regulatory Gaps

- **Lack of a Comprehensive Energy Policy at District Level:** Currently, there is no provincial energy policy and so is the case with district level policy. Energy Department Government of Balochistan is in process of drafting 10 years energy plan.
- **Weak Implementation of Renewable Energy Initiatives:** Despite recognizing solar energy as a potential solution, there was no structured plan to integrate and expand its use. Energy Department of GoB is finalizing 10-Year Energy Sector Plan (2025-2034), which covers renewable energy initiatives. Key flagship projects proposed in the draft plan are:
- Wind power feasibility and pilot project
- Renewable energy grid integration and smart grid project
- Energy access and rural electrification project
- **Limited Policy Incentives for Private Sector Involvement:** Lack of financial incentives, subsidies, and policy support discourages private investment in alternative energy solutions.

8.2.2 Inadequate Infrastructure and Distribution System

- **Limited Grid Expansion to Rural Areas:** Electricity supply is heavily concentrated in urban areas, leaving rural and remote regions without a reliable grid connection.
- **Outdated Inefficient Distribution Mechanisms, & Poor Electricity Bill Recovery:** Poor transmission infrastructure leads to frequent power outages and an unreliable supply. QESCO struggles to collect revenue from consumers, and resultantly faces financial difficulties in paying for electricity purchases, maintenance, and upgrades to the power grid. The financial instability discourages investment in infrastructure upgrades and expansion, further exacerbating the problem. To manage the situation, QESCO resorts to load shedding, which is a form of punitive action that further impacts consumers and the economy.
- **Weak Mechanisms for Extending City-Based Electricity:** There is no robust strategy to expand electricity beyond city limits: QESCO is not sustainable, which means future expansion, in current mode, will be limited.

8.2.3 Missing Economic and Financial Support

- **Absence of Targeted Financing Mechanisms:** There are no dedicated financing schemes or credit lines for rural households and SMEs in the target areas to adopt solar home systems, clean cooking solutions, or energy-efficient appliances. While government and development partners have occasionally distributed limited numbers of solar home systems, such initiatives tend to be sporadic and project-based rather than part of a structured or scalable financing framework. For instance, the Chief Minister of Balochistan recently announced the provision of solar home systems to households in Nok Kundi. However, these efforts lack accompanying components such as needs assessments, affordability analysis, technical training, or mechanisms for post-distribution support.
  There are currently no accessible microcredit lines, installment-based payment models (like pay-as-you-go solar), or subsidies tailored for energy access in the region. This restricts energy adoption to those who can afford high upfront costs, excluding the poorest and most energy-insecure households.
  Without institutionalized financing options, such as Renewable Energy Funds, risk guarantees, or concessional loans, energy access will remain limited and inequitable. Moreover, the absence of financial pathways also discourages private sector participation, as vendors and service providers lack predictable demand or consumer purchasing power.
- **Limited Access to Subsidies or Incentive Programs:** Energy-related subsidies rarely reach marginalized or off-grid communities, and existing schemes often lack transparency or are poorly targeted.
- **No Carbon Credit Utilization Framework:** Despite strong potential, Chagai lacks a local mechanism to tap into global carbon markets or green finance streams that could make renewable energy solutions more financially viable.
- **Private Sector Financing Barriers:** Local investors and energy entrepreneurs face high capital costs, limited risk guarantees, and weak enabling conditions, deterring private energy innovation and deployment.

8.2.4 Sustainability and Alternative Energy Gaps

- **Neglect of Clean Cooking Transitions:** Energy-related policies and development initiatives in Balochistan have primarily focused on electrification, while clean cooking solutions remain largely ignored, especially in rural and remote areas like Nok Kundi and Dalbandin. Consequently, the majority of households in these areas continue to depend on firewood as their primary cooking fuel, which has both environmental and health-related consequences.

  The target areas are already characterized by arid, harsh climatic conditions and extremely limited vegetation cover. The continued felling of scarce trees for fuel is accelerating deforestation and land degradation, exacerbating soil erosion and undermining local climate resilience. The environmental cost is particularly high in districts like Chagai, where natural regeneration is slow due to minimal rainfall and poor soil fertility.

  Moreover, transportation of firewood is a common sight, indicating both the scale of dependence and the informal market that sustains it. This not only places a financial and physical burden on households, especially women and children, but also highlights the absence of affordable and accessible alternatives, such as LPG, biogas, or electric cooking solutions powered by off-grid solar systems.
- **Lack of Structured Decentralized Energy Plans:** There are no area-specific strategies for mini-grids, microgrids, or community-based solar power systems that could provide reliable energy to off-grid villages. Energy department, Government of Balochistan plans feasibility studies in this regard.
- **Inadequate After-Sales Ecosystem for Solar:** While solar adoption is gradually increasing in remote target areas, the after-sales support system remains critically underdeveloped. Households that invest in solar home systems often face ongoing challenges related to maintenance, component failures, and battery degradation. A particularly acute issue is the poor battery selection and handling practices.

  Many buyers, due to lack of awareness, opt for inappropriate or low-quality batteries, often mismatched with the system's load requirements or usage patterns. Furthermore, basic operational practices-such as correct charging cycles, safe installation, and timely water refilling for lead-acid batteries-are poorly understood. As a result, even relatively new systems begin to fail, with battery life reducing to as little as 12-18 months, far below the expected performance.

  These problems are compounded by the limited technical knowledge of local vendors, who often do not offer proper installation guidance, system sizing, or customer training. The absence of repair centers, trained technicians, and accessible spare parts discourages continued use and erodes community trust in solar technology. Over time, this has led to abandonment of systems, loss of investment, and skepticism toward future renewable energy projects.
- **No Monitoring of Environmental Impact:** There is limited tracking of the environmental or climate co-benefits of clean energy initiatives in the region, weakening the case for sustained investment and support.

8.2.5 Week Governance and Stakeholder Collaboration

- **Fragmented Institutional Mandates:** With regard to the target areas, energy planning responsibilities are split across multiple provincial departments (Energy, P&D, Industries, Mines), and QESCO leading to inefficiencies and lack of coordination. In fact, planning has been weak. QESCO on its own has not been able to keep pace with growing energy demand even though the provincial government has been supporting financially for construction / expansion of energy infrastructure.
- **Lack of Multi-Stakeholder Platforms:** There are no formal coordination mechanisms involving government, industry (e.g., mining companies), development partners, and civil society to jointly plan and review energy interventions.
- **Low Capacity for Energy Governance:** Energy department and QESCO lack technical and financial capacity to sustainably manage energy projects and infrastructure, or track household energy data. QESCO does have its consumer data but other sources of energy are off and on reported in various surveys, generally conducted at district level.

8.3 Short-Term Interventions (1-3 Years)

- Policy and Regulatory Actions
- Infrastructure and Distribution Upgrades
- Economic and Financial Support Measures
- Provide subsidized financing options for rural households to adopt solar home systems.
- Establish a Renewable Energy Fund to support small-scale solar and wind projects.
- Introduce incentives for LPG and clean cooking fuel adoption in rural areas.
- Sustainability and Alternative Energy Initiatives
- Governance and Stakeholder Engagement

1. Policy and Regulatory Actions

- Draft and Implement District-Level Energy Policy:
- Collaborate with the provincial Energy Department to draft a district-level energy policy tailored to Chagai's unique needs.
- Prioritize rural electrification, renewable energy adoption, and clean cooking solutions in the policy framework.
- Establish clear timelines and accountability mechanisms for implementation.
- Fast-Track Renewable Energy Initiatives:
- Accelerate feasibility studies and pilot projects for wind power and solar-wind hybrid systems as outlined in the 10-Year Energy Sector Plan.
- Develop partnerships with international organizations (e.g., World Bank, ADB) to secure funding and technical expertise for renewable energy projects.
- Introduce Financial Incentives for Private Sector Participation:
- Provide tax breaks, subsidies, and risk guarantees to encourage private sector investment in renewable energy.
- Promote public-private partnerships (PPPs) to attract private developers for off-grid solar and mini-grid projects.

2. Inadequate Infrastructure and Distribution System

- Expand Grid Connectivity to Rural Areas:
- Prioritize grid extension to high-priority areas like Nok Kundi and Dalbandin, leveraging funds from provincial and federal budgets.
- Use satellite-based mapping to identify underserved regions and plan cost-effective grid expansion.
- Implement targeted load shedding policies to minimize economic impacts on households and businesses.
- Develop City-to-Rural Electricity Expansion Plans:
- Conduct feasibility study for community-based micro-grid or mini-grid systems in rural areas where grid expansion is not immediately feasible.
- Explore hybrid models combining grid extension and decentralized energy solutions for remote villages.

3. Missing Economic and Financial Support

- Launch Targeted Financing Mechanisms:
- Introduce microcredit lines and pay-as-you-go solar financing models to make solar home systems affordable for low-income households.
- Partner with development banks (e.g., ADB, World Bank) to provide concessional loans for energy access projects.
- Improve Access to Subsidies:
- Design transparent and equitable subsidy programs targeting marginalized and off-grid communities.
- Provide direct subsidies for LPG connections and clean cooking appliances to reduce reliance on firewood.
- Explore Carbon Credit Opportunities:
- Collaborate with international climate finance institutions to develop a carbon credit utilization framework for Chagai.
- Identify renewable energy projects eligible for green financing and carbon offset programs

4. Sustainability and Alternative Energy Gaps

- Promote Clean Cooking Solutions:
- Launch awareness campaigns on the benefits of clean cooking fuels (LPG, biogas, electric stoves).
- Distribute subsidized LPG cylinders and stoves to rural households, prioritizing areas with high firewood dependency.
- Develop Decentralized Energy Plans:
- Conduct feasibility studies for mini-grids and solar micro-grids in off-grid villages.
- Engage local communities in planning and decision-making to ensure ownership and sustainability.
- Strengthen After-Sales Support for Solar Systems:
- Train local technicians and vendors on solar system installation, maintenance, and battery management.
- Establish repair centers and spare parts supply chains in key locations like Nok Kundi and Dalbandin.
- Standardize battery selection guidelines and educate buyers on proper usage and maintenance practices.

5. Weak Governance and Stakeholder Collaboration

- Enhance Inter-Agency Coordination:
- Form a multi-stakeholder task force involving the Energy Department, QESCO, Mines Department, and industry players (e.g., mining companies).
- Assign clear roles and responsibilities to each stakeholder to avoid duplication of efforts.
- Build Technical Capacity:
- Organize capacity-building workshops for QESCO staff and local government officials on energy governance and project management.
- Hire external consultants to assist with data collection, analysis, and monitoring of energy initiatives.
- Establish Multi-Stakeholder Platforms:
- Create formal coordination mechanisms to involve government, private sector, civil society, and development partners in energy planning.
- Hold quarterly review meetings to assess progress and address challenges in real-time.

8.4 Medium-Term Interventions (4-7 Years)

i. Policy & Regulatory Implementation and Refinement:

- Develop detailed District Energy Implementation Plans derived from the Provincial 10-Year Plan, incorporating lessons learned from short-term pilots. These plans should include specific targets for off-grid electrification (SHS, mini-grids), grid extension priorities, clean cooking penetration, and private sector engagement.
- Advocate for and support the formalization of Regulations for Mini-Grids and Off-Grid Providers, including tariff structures, service standards, and licensing, based on pilot project outcomes.
- Establish and enforce Robust Quality Control Mechanisms & Certification Standards for RE equipment (especially SHS components like batteries and panels) sold and installed in the district, moving beyond pilot schemes to market-wide application. Link enforcement to vendor licensing/registration.

ii. Infrastructure Expansion and System Optimization:

- Scale-up Successful Mini/Micro-Grid Models identified in the pilot phase to cover clusters of unelectrified villages, potentially using Public-Private Partnership (PPP) models or community-utility partnerships.
- Implement a Phased, Financially Viable Grid Extension Plan targeting peri-urban areas and economically strategic rural locations, informed by the GoB's 10-Year Plan and QESCO's improved financial health (resulting from short-term billing/loss reduction pilots). Ensure integration with off-grid plans to avoid redundant investments.
- Systematically roll out Successful Billing Improvement & Loss Reduction Strategies across relevant QESCO operational areas within the district, leveraging technology (e.g., smart meters in selected areas) and improved management practices.
- Based on GoB's RE integration/smart grid project, begin implementing feasible Grid Modernization Elements locally (e.g., improved distribution automation in key towns, better load management) to enhance reliability.

iii. Establishing Sustainable Financial Ecosystems:

- Establish a Renewable Energy Fund at the provincial level, with dedicated allocations for Chagai as the largescale mining revenues start coming.
- Scale up Energy Lending Programs through MFIs and potentially commercial banks, based on successful pilot models. Introduce diversified loan products (e.g., for productive use of energy equipment, larger solar systems).
- Attract Larger Investment by developing bankable project proposals for mini-grids and larger RE installations (possibly linked to mining operations or industrial zones). Explore blended finance options, combining public funds, development finance, and private capital. Formalize risk mitigation instruments (e.g., credit guarantees).
- Expand and Formalize Pay-As-You-Go (PAYG) Solar Markets by supporting multiple providers and ensuring consumer protection regulations are in place.
- Actively pursue Carbon Credit Monetization by aggregating SHS, clean cooking, and potentially mini-grid projects under recognized voluntary or compliance market standards. Reinvest generated revenue into energy access initiatives.

iv. Deepening Sustainability and Broadening Energy Services:

- Implement Large-Scale Clean Cooking Programs promoting diverse solutions (LPG expansion, improved biomass stoves, biogas where feasible, potentially e-cooking linked to reliable mini-grids/SHS) with sustainable supply chains and financing. Aim for a measurable reduction in firewood dependence.
- To ensure the long-term success and sustainability of renewable energy adoption in remote areas like Nok Kundi, Dalbandin, and the broader Chagai region, it is essential to move beyond one-time system distribution and invest in localized technical infrastructure. This can be achieved by establishing Regional Technical Support Hubs (RTSHs)that serve as anchor points for the operation, maintenance, and continuous development of off-grid and decentralized renewable energy systems.

Key Components of the RTSH Model:

a. Advanced Technician Training & Certification

- Develop structured training programs to equip local youth with technical skills in solar installation, fault diagnosis, inverter servicing, and battery management.
- Partner with TVET institutions and renewable energy companies to deliver certification courses aligned with national skills standards.
- Offer refresher and upskilling modules as technologies evolve, ensuring long-term service sustainability in the region.

b. Spare Parts & Maintenance Supply Chain

- Create local inventories of critical renewable energy components (batteries, controllers, inverters, wiring, solar panels) to reduce downtime and improve system reliability.
- Partner with manufacturers or national distributors to decentralize spare part supply, avoiding delays due to central warehousing.
- Use digital inventory tracking tools (even simple mobile-based systems) to monitor demand and restocking needs.

c. Battery Management, Recycling, and Safe Disposal Systems

- Set up a structured battery lifecycle management system covering:
- Battery health diagnostics and preventive maintenance services.
- Collection mechanisms for damaged, expired, or underperforming batteries.
- Safe storage of used lead-acid batteries, especially to prevent groundwater contamination and health risks.
- Linkages with licensed recycling facilities (in Quetta or elsewhere) for environmentally compliant disposal.
- Raise user awareness about battery lifespan, risks of informal disposal, and incentives for battery returns (e.g., buy-back schemes or credit for trade-ins).

d. Community Outreach & First-Responder Support

- Establish a call-in or mobile-based helpline at the RTSH to guide users through basic troubleshooting and support ticketing.
- Train village-level "energy stewards" or para-technicians who can conduct first-response servicing and escalate complex issues to the hub.

v. Support for Pay-As-You-Go (PAYG) Systems

- Provide backend support for PAYG models operating in the region-handling device locking/unlocking, user support, and repairs.

vi. Long-Term Viability Measures

- Consider social enterprise or public-private partnership models to operate hubs sustainably.
- Revenue could come from:
- Service contracts with NGOs, mining companies, or government.
- Training fees.
- Battery disposal credits.
- Retail of solar kits and spares.
- Implement a Comprehensive Monitoring, Evaluation, and Learning (MEL) System for energy access interventions, tracking not just connections but usage patterns, socio-economic impacts (health, education, income), environmental benefits (reduced emissions, deforestation), and system sustainability (uptime, repairs).

5. Institutionalizing Governance and Partnerships:

- Strengthen Multi-Stakeholder Collaboration Mechanisms i.e. setting up joint committees involving mining companies, government, and local communities to align energy investments with social development priorities.
- Develop and maintain an Integrated District Energy Database combining data from QESCO, off-grid providers, household surveys, and MEL systems to enable evidence-based planning and decision-making.
- Develop and standardize Sector-Specific PPP Modalities under the existing Provincial PPP Act, focusing initially on mini-grids. This includes creating template agreements suitable for energy projects, defining clear risk allocation models reflecting rural realities, establishing relevant performance standards, and potentially streamlining approval processes within the Act's provisions, incorporating lessons learned from short-term pilots.
- Foster Structured Collaboration with Large Consumers/Industries (e.g., mining sector) for potential co-investment in grid upgrades, large RE installations, or contributions to community energy access funds as part of CSR or operational strategy.

8.5 Long-Term Interventions (8-12 Years)

1. Policy & Regulatory Maturity and Dynamism:

- Achieve full integration of the District Energy Plan within Provincial and National energy frameworks, with established cycles for periodic review, updates, and adaptation based on performance data, technological advancements (e.g., new storage, hydrogen potential), and evolving community needs.
- Foster Innovation and Pilot Deployment of Next-Generation RE and Storage Technologies. This includes monitoring and potentially piloting advancements in long-duration storage, assessing the technical viability and economic case for localized green hydrogen ecosystems (e.g., for industrial use in mining if applicable, heavy transport, or grid balancing), and evaluating other emerging technologies based on global cost reductions and technological maturation. Stay abreast of developments in electrolyzer efficiency, hydrogen storage, and fuel cell technology. Within an 8-10+ year timeframe for a region like Chagai, the strategy shouldn't bank on hydrogen but should definitely include assessing its feasibility, monitoring global progress, and potentially initiating small pilot studies if specific local conditions (e.g., large industrial demand, breakthroughs in water sourcing) align. It positions the region to potentially capitalize on this technology if and when it becomes practical and economical for the local context.
- Operate a Mature Regulatory Environment for all energy providers (grid, mini-grid, SHS via PAYG/QESCOs) under the Provincial PPP Act and specific energy sector regulations. This includes performance-based regulation, efficient licensing, transparent tariff setting, and consumer protection mechanisms that encourage competition and service quality.
- Develop and implement Forward-Looking Regulations addressing emerging trends like grid-interactive mini-grids, prosumer models (allowing consumers to sell excess solar power back), electric vehicle charging infrastructure (if relevant), and demand-side management incentives.

2. Optimized, Resilient, and Integrated Infrastructure:

- Attain Universal/Near-Universal Electricity Access through a dynamically optimized mix: strategic grid extensions based on economic viability, fully scaled and interconnected mini-grids covering most off-grid populations, and advanced SHS/micro-grids for the most remote locations. Focus shifts from access to quality and reliability of supply.
- Implement Widespread Smart Grid Technologies across relevant parts of the grid and interconnected mini-grids (building on medium-term steps) for enhanced efficiency, predictive maintenance, automated fault detection/restoration, and better integration of variable RE sources.

3. Mainstreamed and Diversified Financial Sustainability:

- Achieve Mainstream Commercial Financing for viable energy projects (grid upgrades, mini-grids, larger RE plants) and consumer energy access (loans for systems, appliances). Banks and local financial institutions routinely offer energy-related financial products.
- Fully operationalize and potentially expand Revenue Streams from Carbon Finance and other Green/Climate Finance Mechanisms, integrating them into the financial planning of energy providers and potentially creating local reinvestment funds.
- Transition Subsidies away from general access towards highly targeted support for energy efficiency upgrades, productive use equipment for vulnerable groups, or enabling initial access in extremely difficult-to-reach areas, ensuring fiscal responsibility.

4. Deep Sustainability, Efficiency, and Innovation:

- Achieve Near-Complete Transition to Clean Cooking Solutions across the district, with established supply chains, affordable fuel/technology options, and potentially integrated solutions like e-cooking powered by reliable RE sources. Monitor indoor air quality improvements.
- Establish a Fully Functional Circular Economy for RE Components, particularly focusing on battery collection, refurbishment, and environmentally sound recycling programs, minimizing waste and resource depletion.
- Implement Comprehensive Energy Efficiency Programs across residential, commercial, agricultural, and potentially industrial sectors, including building codes, appliance standards, and incentives for upgrades, leading to measurable reductions in energy intensity.

- Foster Innovation and Pilot Deployment of Next-Generation RE and Storage Technologies suitable for the local context, based on ongoing research and global trends, ensuring the district benefits from technological progress.
- See Widespread Adoption of Productive Uses of Energy (PUE) across agriculture, SMEs, and local services, demonstrably contributing to income generation, job creation, and local economic diversification, with energy planning actively supporting these activities.

5. Advanced Governance, Local Capacity, and Data Integration:

- Mature the District Energy Coordination Committee into a Fully Resourced and Empowered District Energy Office/Unit with strong technical expertise for long-term planning, regulatory oversight support, sophisticated M&E, and stakeholder coordination.
- Utilize Advanced Data Analytics derived from the integrated energy database (smart meters, system sensors, user data) for demand forecasting, grid/mini-grid optimization, predictive maintenance, targeted interventions, and sophisticated impact assessments.
- Ensure Strong Local Technical Capacity through established vocational training programs, continuous professional development, and retention of skilled personnel for operating and maintaining diverse energy systems.
- Operate under Mature Partnership Models where government, private sector, communities, and development partners collaborate effectively and routinely within the established legal and regulatory frameworks for sustainable energy service delivery and innovation.

8.6 Aligning Chagai's Energy Transition with Global Sustainability Goals

The energy transformation unfolding in Chagai District, particularly around the Reko Diq mining region, directly contributes to achieving several Sustainable Development Goals (SDGs), especially SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action). As Balochistan prepares for an increase in energy demand driven by mining and population shifts, investments in renewable energy, such as the proposed Chagai GW Hybrid Park, offer a pathway to affordable, reliable, and sustainable energy. This aligns with Target 7.1, which emphasizes universal energy access, and Target 7.2, which calls for a substantial increase in the share of renewables. Additionally, the shift from biomass to clean cooking fuels supports SDG 3 (Good Health and Well-being) by reducing indoor air pollution, and SDG 5 (Gender Equality) by alleviating energy burdens disproportionately carried by women. Furthermore, energy equity interventions-such as localized data collection, gender-sensitive planning, and decentralized solar solutions-advance SDG 10 (Reduced Inequalities) and SDG 9 (Industry, Innovation, and Infrastructure) by ensuring inclusive energy access and resilient infrastructure development. By closing strategic gaps and fostering multi-stakeholder governance, Chagai's evolving energy landscape can serve as a model for sustainable and equitable energy transitions in fragile, resource-rich regions.

Annexes

Annex-PA

Table 25: District Chagai, Union Councils

S. No.	Name of Union Councils	S. No.	Name of Union Councils
1	Padag	13	Ziarat Balanosh
2	Sia Chang	14	Lashkar Aab
3	Alangi	15	Padagi Lashkar Khan
4	Saddar Dalbandin	16	Chagai
5	Sia Jungle	17	Dasht-e-Goran
6	Chilghazi	18	Shadi Shaif
7	Kallag	19	Aminabad
8	SalehKarez	20	Jhuli
9	Baslani	21	Nok Kundi
10	BarabChah	22	Taftan
11	Aamuri	23	Talab
12	Pat-e-Gonakoh		

Annex-PB

Table 26: Population by Gender, HH Size, Annual Growth Rate and Urban/Rural

Name of administrative unit	Area sq.km	All sexes (2023)	Male (2023)	Female (2023)	Average H.hold size	2017-2023 Average Annual G.Rate
Balochistan	347,190	14,894,402	7,768,166	7,125,471	6.4	3.20
Rural		10,282,574	5,379,780	4,902,339		2.39
Urban		4,611,828	2,388,386	2,223,132		5.19
Chagai district	44,748	269,192	139,922	129,265	7.0	2.93
Rural		249,138	129,664	119,469	6.9	2.88
Urban		20054	10,258	9,796	7.7	3.56
Chagai tehsil	3,975	73,482	37,067	36,412	6.6	3.96
Rural		73,482	37,067	36,412	6.6	3.96
Urban		---	---	---		
Dalbandin sub-division	7,791	122,918	63,705	59,212	6.9	2.40

Name of administrative unit	Area sq.km	All sexes (2023)	Male (2023)	Female (2023)	Average H.hold size	2017-2023 Average Annual G.Rate
Rural		102,864	53,447	49,416	6.8	2.19
Urban		20054	10,258	9,796	7.7	3.56
Nok Kundi tehsil	16,092	30,625	16,627	13,997	9.7	5.46
Rural		30,625	16,627	13,997	9.7	5.46
Urban		---	---	---		
Taftan sub-division	9,318	19,259	10,707	8,552	7.1	0.67
Rural		19,259	10,707	8,552	7.1	0.67
Urban		---	---	---		
Yak machh sub-tehsil	7,572	22,908	11,816	11,092	6.2	1.61
Rural		22,908	11,816	11,092	6.2	1.61

Source: Housing and Population Census 2023

Annex-PC

Table 27: Population by Single Year Age, Chaghi District (Pakistan Population and Household Census, 2023)

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
ALL AGES	268,611	139,642	128,964	5	248,652	129,430	119,217	19,959	10,212	9,747
00--04	52,155	26,833	25,322	-	49,066	25,242	23,824	3,089	1,591	1,498
BELOW 1	6,843	3,475	3,368	-	6,452	3,278	3,174	391	197	194
1	9,313	4,848	4,465	-	8,752	4,558	4,194	561	290	271
2	11,633	5,916	5,717	-	10,955	5,570	5,385	678	346	332
3	11,893	6,060	5,833	-	11,152	5,677	5,475	741	383	358
4	12,473	6,534	5,939	-	11,755	6,159	5,596	718	375	343
05--09	49,268	25,483	23,785	-	45,944	23,788	22,156	3,324	1,695	1,629
5	10,666	5,505	5,161	-	9,942	5,132	4,810	724	373	351
6	10,801	5,631	5,170	-	10,124	5,287	4,837	677	344	333
7	9,872	5,150	4,722	-	9,186	4,797	4,389	686	353	333

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
8	10,515	5,106	5,409	-	9,847	4,765	5,082	668	341	327
9	7,414	4,091	3,323	-	6,845	3,807	3,038	569	284	285
10-14	38,719	20,110	18,608	1	35,922	18,669	17,252	2,797	1,441	1,356
10	8,942	4,660	4,282	-	8,348	4,354	3,994	594	306	288
11	7,837	3,981	3,856	-	7,234	3,666	3,568	603	315	288
12	7,749	4,054	3,695	-	7,207	3,776	3,431	542	278	264
13	7,178	3,775	3,403	-	6,617	3,477	3,140	561	298	263
14	7,013	3,640	3,372	1	6,516	3,396	3,119	497	244	253
15-19	28,972	15,279	13,690	3	26,558	14,062	12,493	2,414	1,217	1,197
15	6,716	3,563	3,152	1	6,137	3,274	2,862	579	289	290
16	6,402	3,459	2,941	2	5,914	3,219	2,693	488	240	248
17	5,397	2,790	2,607	-	4,889	2,527	2,362	508	263	245
18	5,529	2,836	2,693	-	5,102	2,626	2,476	427	210	217
19	4,928	2,631	2,297	-	4,516	2,416	2,100	412	215	197
20--24	21,977	11,104	10,873	-	20,299	10,283	10,016	1,678	821	857
20	4,925	2,449	2,476	-	4,562	2,276	2,286	363	173	190
21	4,523	2,287	2,236	-	4,169	2,101	2,068	354	186	168
22	4,345	2,130	2,215	-	4,013	1,965	2,048	332	165	167
23	4,197	2,216	1,981	-	3,907	2,079	1,828	290	137	153
24	3,987	2,022	1,965	-	3,648	1,862	1,786	339	160	179
25-29	16,060	7,900	8,159	1	14,657	7,250	7,406	1,403	650	753
25	3,476	1,752	1,724	-	3,179	1,611	1,568	297	141	156
26	3,346	1,654	1,692	-	3,052	1,518	1,534	294	136	158
27	3,184	1,604	1,580	-	2,934	1,486	1,448	250	118	132
28	3,031	1,436	1,595	-	2,746	1,320	1,426	285	116	169
29	3,023	1,454	1,568	1	2,746	1,315	1,430	277	139	138
30-34	13,329	6,585	6,744	-	12,213	6,017	6,196	1,116	568	548

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
30	2,423	1,168	1,255	-	2,208	1,052	1,156	215	116	99
31	2,796	1,345	1,451	-	2,580	1,241	1,339	216	104	112
32	2,864	1,417	1,447	-	2,592	1,287	1,305	272	130	142
33	2,620	1,296	1,324	-	2,415	1,184	1,231	205	112	93
34	2,626	1,359	1,267	-	2,418	1,253	1,165	208	106	102
35--39	12,288	6,200	6,088	-	11,291	5,729	5,562	997	471	526
35	2,451	1,260	1,191	-	2,270	1,169	1,101	181	91	90
36	2,323	1,139	1,184	-	2,124	1,059	1,065	199	80	119
37	2,534	1,309	1,225	-	2,336	1,211	1,125	198	98	100
38	2,556	1,309	1,247	-	2,360	1,206	1,154	196	103	93
39	2,424	1,183	1,241	-	2,201	1,084	1,117	223	99	124
40--44	10,816	5,963	4,853	-	9,828	5,393	4,435	988	570	418
40	1,985	1,081	904	-	1,807	972	835	178	109	69
41	2,469	1,313	1,156	-	2,245	1,199	1,046	224	114	110
42	2,211	1,257	954	-	1,993	1,133	860	218	124	94
43	2,372	1,308	1,064	-	2,182	1,200	982	190	108	82
44	1,779	1,004	775	-	1,601	889	712	178	115	63
45--49	6,852	3,812	3,040	-	6,253	3,468	2,785	599	344	255
45	1,436	814	622	-	1,322	750	572	114	64	50
46	1,394	794	600	-	1,257	713	544	137	81	56
47	1,335	771	564	-	1,192	683	509	143	88	55
48	1,465	769	696	-	1,360	711	649	105	58	47
49	1,222	664	558	-	1,122	611	511	100	53	47
50--54	5,789	3,140	2,649	-	5,303	2,893	2,410	486	247	239
50	993	548	445	-	918	504	414	75	44	31
51	1,207	622	585	-	1,113	582	531	94	40	54
52	1,233	672	561	-	1,126	613	513	107	59	48

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
53	1,384	731	653	-	1,276	674	602	108	57	51
54	972	567	405	-	870	520	350	102	47	55
55--59	4,168	2,453	1,715	-	3,796	2,238	1,558	372	215	157
55	826	442	384	-	753	399	354	73	43	30
56	850	526	324	-	774	481	293	76	45	31
57	834	477	357	-	773	444	329	61	33	28
58	928	557	371	-	847	510	337	81	47	34
59	730	451	279	-	649	404	245	81	47	34
60--64	2,901	1,723	1,178	-	2,650	1,576	1,074	251	147	104
60	632	362	270	-	577	330	247	55	32	23
61	596	378	218	-	547	352	195	49	26	23
62	496	318	178	-	451	287	164	45	31	14
63	700	385	315	-	646	353	293	54	32	22
64	477	280	197	-	429	254	175	48	26	22
65--69	2,151	1,185	966	-	1,932	1,073	859	219	112	107
65	573	329	244	-	521	303	218	52	26	26
66	414	230	184	-	372	208	164	42	22	20
67	409	234	175	-	369	211	158	40	23	17
68	423	218	205	-	371	192	179	52	26	26
69	332	174	158	-	299	159	140	33	15	18
70--74	1,553	889	664	-	1,418	819	599	135	70	65
70	420	242	178	-	387	224	163	33	18	15
71	327	182	145	-	303	171	132	24	11	13
72	274	157	117	-	244	142	102	30	15	15
73	311	181	130	-	288	164	124	23	17	6
74	221	127	94	-	196	118	78	25	9	16
75 & ABOVE	1,613	983	630	-	1,522	930	592	91	53	38

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
CHAGAI TEHSIL				3						
ALL AGES	73,326	36,992	36,331	3	73,326	36,992	36,331	-	-	-
00--04	13,424	6,615	6,809	-	13,424	6,615	6,809	-	-	-
BELOW 1	1,594	774	820	-	1,594	774	820	-	-	-
1	2,522	1,233	1,289	-	2,522	1,233	1,289	-	-	-
2	3,013	1,484	1,529	-	3,013	1,484	1,529	-	-	-
3	3,055	1,462	1,593	-	3,055	1,462	1,593	-	-	-
4	3,240	1,662	1,578	-	3,240	1,662	1,578	-	-	-
05--09	13,528	6,840	6,688	-	13,528	6,840	6,688	-	-	-
5	2,762	1,355	1,407	-	2,762	1,355	1,407	-	-	-
6	2,989	1,537	1,452	-	2,989	1,537	1,452	-	-	-
7	2,707	1,429	1,278	-	2,707	1,429	1,278	-	-	-
8	3,060	1,429	1,631	-	3,060	1,429	1,631	-	-	-
9	2,010	1,090	920	-	2,010	1,090	920	-	-	-
10--14	10,497	5,286	5,210	1	10,497	5,286	5,210	-	-	-
10	2,574	1,306	1,268	-	2,574	1,306	1,268	-	-	-
11	2,122	1,047	1,075	-	2,122	1,047	1,075	-	-	-
12	2,153	1,108	1,045	-	2,153	1,108	1,045	-	-	-
13	1,833	933	900	-	1,833	933	900	-	-	-
14	1,815	892	922	1	1,815	892	922	-	-	-
15--19	7,604	3,842	3,761	1	7,604	3,842	3,761	-	-	-
15	1,694	832	862	1	1,694	832	862	-	-	-
16	1,682	868	813	1	1,682	868	813	-	-	-
17	1,207	592	615	-	1,207	592	615	-	-	-
18	1,635	829	806	-	1,635	829	806	-	-	-
19	1,386	721	665	-	1,386	721	665	-	-	-
20--24	6,559	3,212	3,347	-	6,559	3,212	3,347	-	-	-

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
20	1,533	723	810	-	1,533	723	810	-	-	-
21	1,323	648	675	-	1,323	648	675	-	-	-
22	1,356	636	720	-	1,356	636	720	-	-	-
23	1,161	586	575	-	1,161	586	575	-	-	-
24	1,186	619	567	-	1,186	619	567	-	-	-
25--29	4,431	2,098	2,332	1	4,431	2,098	2,332	-	-	-
25	1,013	476	537	-	1,013	476	537	-	-	-
26	917	436	481	-	917	436	481	-	-	-
27	903	461	442	-	903	461	442	-	-	-
28	786	366	420	-	786	366	420	-	-	-
29	812	359	452	1	812	359	452	-	-	-
30--34	3,746	1,761	1,985	-	3,746	1,761	1,985	-	-	-
30	721	326	395	-	721	326	395	-	-	-
31	805	365	440	-	805	365	440	-	-	-
32	776	366	410	-	776	366	410	-	-	-
33	743	342	401	-	743	342	401	-	-	-
34	701	362	339	-	701	362	339	-	-	-
35--39	3,369	1,686	1,683	-	3,369	1,686	1,683	-	-	-
35	662	326	336	-	662	326	336	-	-	-
36	596	301	295	-	596	301	295	-	-	-
37	720	362	358	-	720	362	358	-	-	-
38	756	379	377	-	756	379	377	-	-	-
39	635	318	317	-	635	318	317	-	-	-
40--44	3,063	1,646	1,417	-	3,063	1,646	1,417	-	-	-
40	585	306	279	-	585	306	279	-	-	-
41	691	345	346	-	691	345	346	-	-	-
42	637	363	274	-	637	363	274	-	-	-

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
43	680	375	305	-	680	375	305	-	-	-
44	470	257	213	-	470	257	213	-	-	-
45--49	1,934	1,070	864	-	1,934	1,070	864	-	-	-
45	394	225	169	-	394	225	169	-	-	-
46	411	240	171	-	411	240	171	-	-	-
47	389	222	167	-	389	222	167	-	-	-
48	403	202	201	-	403	202	201	-	-	-
49	337	181	156	-	337	181	156	-	-	-
50--54	1,721	906	815	-	1,721	906	815	-	-	-
50	283	149	134	-	283	149	134	-	-	-
51	374	196	178	-	374	196	178	-	-	-
52	402	213	189	-	402	213	189	-	-	-
53	397	201	196	-	397	201	196	-	-	-
54	265	147	118	-	265	147	118	-	-	-
55--59	1,136	663	473	-	1,136	663	473	-	-	-
55	221	115	106	-	221	115	106	-	-	-
56	233	150	83	-	233	150	83	-	-	-
57	227	122	105	-	227	122	105	-	-	-
58	267	163	104	-	267	163	104	-	-	-
59	188	113	75	-	188	113	75	-	-	-
60--64	800	474	326	-	800	474	326	-	-	-
60	168	92	76	-	168	92	76	-	-	-
61	158	97	61	-	158	97	61	-	-	-
62	149	92	57	-	149	92	57	-	-	-
63	210	119	91	-	210	119	91	-	-	-
64	115	74	41	-	115	74	41	-	-	-
65--69	554	300	254	-	554	300	254	-	-	-

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
65	137	76	61	-	137	76	61	-	-	-
66	117	65	52	-	117	65	52	-	-	-
67	119	64	55	-	119	64	55	-	-	-
68	105	52	53	-	105	52	53	-	-	-
69	76	43	33	-	76	43	33	-	-	-
70--74	429	246	183	-	429	246	183	-	-	-
70	116	66	50	-	116	66	50	-	-	-
71	94	54	40	-	94	54	40	-	-	-
72	80	47	33	-	80	47	33	-	-	-
73	79	45	34	-	79	45	34	-	-	-
74	60	34	26	-	60	34	26	-	-	-
75 & ABOVE	531	347	184	-	531	347	184	-	-	-
DALBANDAIN SUB-DIVISION				1						
ALL AGES	122,763	63,630	59,132	1	102,804	53,418	49,385	19,959	10,212	9,747
00--04	23,644	12,304	11,340	-	20,555	10,713	9,842	3,089	1,591	1,498
BELOW 1	2,819	1,458	1,361	-	2,428	1,261	1,167	391	197	194
1	4,374	2,330	2,044	-	3,813	2,040	1,773	561	290	271
2	5,219	2,657	2,562	-	4,541	2,311	2,230	678	346	332
3	5,588	2,905	2,683	-	4,847	2,522	2,325	741	383	358
4	5,644	2,954	2,690	-	4,926	2,579	2,347	718	375	343
05--09	22,250	11,544	10,706	-	18,926	9,849	9,077	3,324	1,695	1,629
5	5,019	2,619	2,400	-	4,295	2,246	2,049	724	373	351
6	4,785	2,480	2,305	-	4,108	2,136	1,972	677	344	333
7	4,477	2,340	2,137	-	3,791	1,987	1,804	686	353	333
8	4,574	2,255	2,319	-	3,906	1,914	1,992	668	341	327
9	3,395	1,850	1,545	-	2,826	1,566	1,260	569	284	285
10--14	17,071	8,788	8,283	-	14,274	7,347	6,927	2,797	1,441	1,356

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
10	3,877	2,026	1,851	-	3,283	1,720	1,563	594	306	288
11	3,486	1,763	1,723	-	2,883	1,448	1,435	603	315	288
12	3,333	1,720	1,613	-	2,791	1,442	1,349	542	278	264
13	3,206	1,672	1,534	-	2,645	1,374	1,271	561	298	263
14	3,169	1,607	1,562	1	2,672	1,363	1,309	497	244	253
15--19	13,222	6,636	6,585	1	10,808	5,419	5,388	2,414	1,217	1,197
15	3,049	1,580	1,468	1	2,470	1,291	1,178	579	289	290
16	2,777	1,431	1,346	-	2,289	1,191	1,098	488	240	248
17	2,587	1,248	1,339	-	2,079	985	1,094	508	263	245
18	2,529	1,197	1,332	-	2,102	987	1,115	427	210	217
19	2,280	1,180	1,100	-	1,868	965	903	412	215	197
20--24	9,954	4,969	4,985	-	8,276	4,148	4,128	1,678	821	857
20	2,178	1,055	1,123	-	1,815	882	933	363	173	190
21	2,058	1,032	1,026	-	1,704	846	858	354	186	168
22	1,994	978	1,016	-	1,662	813	849	332	165	167
23	1,876	979	897	-	1,586	842	744	290	137	153
24	1,848	925	923	-	1,509	765	744	339	160	179
25--29	7,778	3,844	3,934	-	6,375	3,194	3,181	1,403	650	753
25	1,635	811	824	-	1,338	670	668	297	141	156
26	1,604	807	797	-	1,310	671	639	294	136	158
27	1,494	739	755	-	1,244	621	623	250	118	132
28	1,511	723	788	-	1,226	607	619	285	116	169
29	1,534	764	770	-	1,257	625	632	277	139	138
30--34	6,421	3,241	3,180	-	5,305	2,673	2,632	1,116	568	548
30	1,194	588	606	-	979	472	507	215	116	99
31	1,341	650	691	-	1,125	546	579	216	104	112
32	1,346	691	655	-	1,074	561	513	272	130	142

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
33	1,279	656	623	-	1,074	544	530	205	112	93
34	1,261	656	605	-	1,053	550	503	208	106	102
35--39	5,789	2,910	2,879	-	4,792	2,439	2,353	997	471	526
35	1,159	610	549	-	978	519	459	181	91	90
36	1,121	525	596	-	922	445	477	199	80	119
37	1,137	583	554	-	939	485	454	198	98	100
38	1,184	619	565	-	988	516	472	196	103	93
39	1,188	573	615	-	965	474	491	223	99	124
40--44	4,989	2,770	2,219	-	4,001	2,200	1,801	988	570	418
40	891	491	400	-	713	382	331	178	109	69
41	1,132	614	518	-	908	500	408	224	114	110
42	1,011	572	439	-	793	448	345	218	124	94
43	1,095	598	497	-	905	490	415	190	108	82
44	860	495	365	-	682	380	302	178	115	63
45--49	3,179	1,789	1,390	-	2,580	1,445	1,135	599	344	255
45	687	397	290	-	573	333	240	114	64	50
46	638	374	264	-	501	293	208	137	81	56
47	636	369	267	-	493	281	212	143	88	55
48	651	336	315	-	546	278	268	105	58	47
49	567	313	254	-	467	260	207	100	53	47
50--54	2,622	1,423	1,199	-	2,136	1,176	960	486	247	239
50	445	248	197	-	370	204	166	75	44	31
51	526	263	263	-	432	223	209	94	40	54
52	513	279	234	-	406	220	186	107	59	48
53	642	341	301	-	534	284	250	108	57	51
54	496	292	204	-	394	245	149	102	47	55
55--59	1,992	1,185	807	-	1,620	970	650	372	215	157

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
55	379	203	176	-	306	160	146	73	43	30
56	416	256	160	-	340	211	129	76	45	31
57	415	248	167	-	354	215	139	61	33	28
58	431	260	171	-	350	213	137	81	47	34
59	351	218	133	-	270	171	99	81	47	34
60--64	1,384	825	559	-	1,133	678	455	251	147	104
60	306	170	136	-	251	138	113	55	32	23
61	301	188	113	-	252	162	90	49	26	23
62	240	160	80	-	195	129	66	45	31	14
63	308	173	135	-	254	141	113	54	32	22
64	229	134	95	-	181	108	73	48	26	22
65--69	1,013	554	459	-	794	442	352	219	112	107
65	262	150	112	-	210	124	86	52	26	26
66	182	104	78	-	140	82	58	42	22	20
67	186	107	79	-	146	84	62	40	23	17
68	214	110	104	-	162	84	78	52	26	26
69	169	83	86	-	136	68	68	33	15	18
70--74	736	422	314	-	601	352	249	135	70	65
70	190	111	79	-	157	93	64	33	18	15
71	153	84	69	-	129	73	56	24	11	13
72	137	79	58	-	107	63	44	30	15	15
73	103	57	46	-	78	48	30	25	9	16
74	153	92	61	-	130	75	55	23	17	6
75 & ABOVE	719	426	293	-	628	373	255	91	53	38
NOK KUNDI TEHSIL				1						
ALL AGES	30,415	16,526	13,888	1	30,415	16,526	13,888	-	-	-
00--04	7,196	3,930	3,266	-	7,196	3,930	3,266	-	-	-

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
BELOW 1	1,338	710	628	-	1,338	710	628	-	-	-
1	1,010	563	447	-	1,010	563	447	-	-	-
2	1,612	897	715	-	1,612	897	715	-	-	-
3	1,427	770	657	-	1,427	770	657	-	-	-
4	1,809	990	819	-	1,809	990	819	-	-	-
05--09	5,929	3,256	2,673	-	5,929	3,256	2,673	-	-	-
5	1,216	682	534	-	1,216	682	534	-	-	-
6	1,401	801	600	-	1,401	801	600	-	-	-
7	1,192	644	548	-	1,192	644	548	-	-	-
8	1,283	664	619	-	1,283	664	619	-	-	-
9	837	465	372	-	837	465	372	-	-	-
10--14	4,799	2,586	2,213	-	4,799	2,586	2,213	-	-	-
10	1,079	591	488	-	1,079	591	488	-	-	-
11	926	472	454	-	926	472	454	-	-	-
12	1,000	542	458	-	1,000	542	458	-	-	-
13	902	500	402	-	902	500	402	-	-	-
14	892	481	411	-	892	481	411	-	-	-
15--19	3,190	1,873	1,316	1	3,190	1,873	1,316	-	-	-
15	715	393	322	-	715	393	322	-	-	-
16	803	490	312	1	803	490	312	-	-	-
17	675	403	272	-	675	403	272	-	-	-
18	533	324	209	-	533	324	209	-	-	-
19	464	263	201	-	464	263	201	-	-	-
20--24	1,999	1,075	924	-	1,999	1,075	924	-	-	-
20	487	286	201	-	487	286	201	-	-	-
21	419	220	199	-	419	220	199	-	-	-
22	332	178	154	-	332	178	154	-	-	-

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
23	429	213	216	-	429	213	216	-	-	-
24	332	178	154	-	332	178	154	-	-	-
23	384	210	174	-	384	210	174	-	-	-
24	377	181	196	-	377	181	196	-	-	-
25--29	1,356	681	675	-	1,356	681	675	-	-	-
25	270	137	133	-	270	137	133	-	-	-
26	292	138	154	-	292	138	154	-	-	-
27	306	165	141	-	306	165	141	-	-	-
28	246	122	124	-	246	122	124	-	-	-
29	242	119	123	-	242	119	123	-	-	-
30--34	1,212	577	635	-	1,212	577	635	-	-	-
30	182	84	98	-	182	84	98	-	-	-
31	271	127	144	-	271	127	144	-	-	-
32	274	128	146	-	274	128	146	-	-	-
33	239	115	124	-	239	115	124	-	-	-
34	246	123	123	-	246	123	123	-	-	-
35--39	1,189	573	616	-	1,189	573	616	-	-	-
35	204	98	106	-	204	98	106	-	-	-
36	217	103	114	-	217	103	114	-	-	-
37	270	132	138	-	270	132	138	-	-	-
38	258	122	136	-	258	122	136	-	-	-
39	240	118	122	-	240	118	122	-	-	-
40--44	1,151	624	527	-	1,151	624	527	-	-	-
40	217	124	93	-	217	124	93	-	-	-
41	293	157	136	-	293	157	136	-	-	-
42	232	123	109	-	232	123	109	-	-	-
43	225	121	104	-	225	121	104	-	-	-

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
44	184	99	85	-	184	99	85	-	-	-
45--49	656	361	295	-	656	361	295	-	-	-
45	121	63	58	-	121	63	58	-	-	-
46	136	81	55	-	136	81	55	-	-	-
47	130	75	55	-	130	75	55	-	-	-
48	138	74	64	-	138	74	64	-	-	-
49	131	68	63	-	131	68	63	-	-	-
50--54	584	331	253	-	584	331	253	-	-	-
50	89	51	38	-	89	51	38	-	-	-
51	129	79	50	-	129	79	50	-	-	-
52	148	79	69	-	148	79	69	-	-	-
53	128	69	59	-	128	69	59	-	-	-
54	90	53	37	-	90	53	37	-	-	-
55--59	397	239	158	-	397	239	158	-	-	-
55	80	47	33	-	80	47	33	-	-	-
56	81	47	34	-	81	47	34	-	-	-
57	80	46	34	-	80	46	34	-	-	-
58	88	57	31	-	88	57	31	-	-	-
59	68	42	26	-	68	42	26	-	-	-
60--64	267	147	120	-	267	147	120	-	-	-
60	55	33	22	-	55	33	22	-	-	-
61	46	34	12	-	46	34	12	-	-	-
62	42	21	21	-	42	21	21	-	-	-
63	73	35	38	-	73	35	38	-	-	-
64	51	24	27	-	51	24	27	-	-	-
65--69	209	110	99	-	209	110	99	-	-	-
65	51	26	25	-	51	26	25	-	-	-

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
66	39	17	22	-	39	17	22	-	-	-
67	48	26	22	-	48	26	22	-	-	-
68	38	24	14	-	38	24	14	-	-	-
69	33	17	16	-	33	17	16	-	-	-
70--74	141	83	58	-	141	83	58	-	-	-
70	38	24	14	-	38	24	14	-	-	-
71	21	12	9	-	21	12	9	-	-	-
72	30	18	12	-	30	18	12	-	-	-
73	31	17	14	-	31	17	14	-	-	-
74	21	12	9	-	21	12	9	-	-	-
75 & ABOVE	140	80	60	-	140	80	60	-	-	-
TAFTAN SUB-DIVISION										
ALL AGES	19,259	10,707	8,552	-	19,259	10,707	8,552	-	-	-
00--04	3,819	1,942	1,877	-	3,819	1,942	1,877	-	-	-
BELOW 1	613	301	312	-	613	301	312	-	-	-
1	593	319	274	-	593	319	274	-	-	-
2	877	425	452	-	877	425	452	-	-	-
3	905	464	441	-	905	464	441	-	-	-
4	831	433	398	-	831	433	398	-	-	-
05--09	3,627	1,898	1,729	-	3,627	1,898	1,729	-	-	-
5	900	496	404	-	900	496	404	-	-	-
6	772	377	395	-	772	377	395	-	-	-
7	655	336	319	-	655	336	319	-	-	-
8	741	351	390	-	741	351	390	-	-	-
9	559	338	221	-	559	338	221	-	-	-
10--14	2,689	1,502	1,187	-	2,689	1,502	1,187	-	-	-
10	635	350	285	-	635	350	285	-	-	-

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
11	552	294	258	-	552	294	258	-	-	-
12	586	327	259	-	586	327	259	-	-	-
13	505	267	238	-	505	267	238	-	-	-
14	411	264	147	-	411	264	147	-	-	-
15--19	2,241	1,404	837	-	2,241	1,404	837	-	-	-
15	507	316	191	-	507	316	191	-	-	-
16	462	298	164	-	462	298	164	-	-	-
17	438	272	166	-	438	272	166	-	-	-
18	407	261	146	-	407	261	146	-	-	-
19	427	257	170	-	427	257	170	-	-	-
20--24	1,789	1,059	730	-	1,789	1,059	730	-	-	-
20	385	216	169	-	385	216	169	-	-	-
21	378	228	150	-	378	228	150	-	-	-
22	362	211	151	-	362	211	151	-	-	-
23	406	262	144	-	406	262	144	-	-	-
24	258	142	116	-	258	142	116	-	-	-
25--29	1,211	668	543	-	1,211	668	543	-	-	-
25	314	193	121	-	314	193	121	-	-	-
26	276	147	129	-	276	147	129	-	-	-
27	195	101	94	-	195	101	94	-	-	-
28	231	123	108	-	231	123	108	-	-	-
29	195	104	91	-	195	104	91	-	-	-
30--34	841	449	392	-	841	449	392	-	-	-
30	147	76	71	-	147	76	71	-	-	-
31	165	93	72	-	165	93	72	-	-	-
32	255	132	123	-	255	132	123	-	-	-
33	111	64	47	-	111	64	47	-	-	-

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
34	163	84	79	-	163	84	79	-	-	-
35--39	850	460	390	-	850	460	390	-	-	-
35	227	126	101	-	227	126	101	-	-	-
36	163	89	74	-	163	89	74	-	-	-
37	166	92	74	-	166	92	74	-	-	-
38	152	81	71	-	152	81	71	-	-	-
39	142	72	70	-	142	72	70	-	-	-
40--44	679	405	274	-	679	405	274	-	-	-
40	140	76	64	-	140	76	64	-	-	-
41	116	67	49	-	116	67	49	-	-	-
42	169	107	62	-	169	107	62	-	-	-
43	148	97	51	-	148	97	51	-	-	-
44	106	58	48	-	106	58	48	-	-	-
45--49	545	316	229	-	545	316	229	-	-	-
45	127	71	56	-	127	71	56	-	-	-
46	101	54	47	-	101	54	47	-	-	-
47	83	51	32	-	83	51	32	-	-	-
48	132	79	53	-	132	79	53	-	-	-
49	102	61	41	-	102	61	41	-	-	-
50--54	340	198	142	-	340	198	142	-	-	-
50	75	41	34	-	75	41	34	-	-	-
51	70	33	37	-	70	33	37	-	-	-
52	84	54	30	-	84	54	30	-	-	-
53	61	40	21	-	61	40	21	-	-	-
54	50	30	20	-	50	30	20	-	-	-
55--59	261	146	115	-	261	146	115	-	-	-
55	72	37	35	-	72	37	35	-	-	-

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
56	54	30	24	-	54	30	24	-	-	-
57	45	25	20	-	45	25	20	-	-	-
58	43	28	15	-	43	28	15	-	-	-
59	47	26	21	-	47	26	21	-	-	-
57	45	28	17	-	45	28	17	-	-	-
58	42	25	17	-	42	25	17	-	-	-
59	48	26	22	-	48	26	22	-	-	-
60--64	151	107	44	-	151	107	44	-	-	-
60	35	25	10	-	35	25	10	-	-	-
61	36	24	12	-	36	24	12	-	-	-
62	29	25	4	-	29	25	4	-	-	-
63	30	20	10	-	30	20	10	-	-	-
64	21	13	8	-	21	13	8	-	-	-
65--69	106	79	27	-	106	79	27	-	-	-
65	42	32	10	-	42	32	10	-	-	-
66	22	15	7	-	22	15	7	-	-	-
67	13	12	1	-	13	12	1	-	-	-
68	14	10	4	-	14	10	4	-	-	-
69	15	10	5	-	15	10	5	-	-	-
70--74	67	45	22	-	67	45	22	-	-	-
70	19	10	9	-	19	10	9	-	-	-
71	17	12	5	-	17	12	5	-	-	-
72	13	9	4	-	13	9	4	-	-	-
73	8	7	1	-	8	7	1	-	-	-
74	10	7	3	-	10	7	3	-	-	-
75 & ABOVE	43	29	14	-	43	29	14	-	-	-

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
YAK MACHH SUB-TEHSIL										
ALL AGES	22,848	11,787	11,061	-	22,848	11,787	11,061	-	-	-
00--04	4,072	2,042	2,030	-	4,072	2,042	2,030	-	-	-
BELOW 1	479	232	247	-	479	232	247	-	-	-
1	814	403	411	-	814	403	411	-	-	-
2	912	453	459	-	912	453	459	-	-	-
3	918	459	459	-	918	459	459	-	-	-
4	949	495	454	-	949	495	454	-	-	-
05--09	3,934	1,945	1,989	-	3,934	1,945	1,989	-	-	-
5	769	353	416	-	769	353	416	-	-	-
6	854	436	418	-	854	436	418	-	-	-
7	841	401	440	-	841	401	440	-	-	-
8	857	407	450	-	857	407	450	-	-	-
9	613	348	265	-	613	348	265	-	-	-
10--14	3,663	1,948	1,715	-	3,663	1,948	1,715	-	-	-
10	777	387	390	-	777	387	390	-	-	-
11	751	405	346	-	751	405	346	-	-	-
12	677	357	320	-	677	357	320	-	-	-
13	732	403	329	-	732	403	329	-	-	-
14	726	396	330	-	726	396	330	-	-	-
15--19	2,715	1,524	1,191	-	2,715	1,524	1,191	-	-	-
15	751	442	309	-	751	442	309	-	-	-
16	678	372	306	-	678	372	306	-	-	-
17	490	275	215	-	490	275	215	-	-	-
18	425	225	200	-	425	225	200	-	-	-
19	371	210	161	-	371	210	161	-	-	-
20--24	1,676	789	887	-	1,676	789	887	-	-	-

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
20	342	169	173	-	342	169	173	-	-	-
21	345	159	186	-	345	159	186	-	-	-
22	301	127	174	-	301	127	174	-	-	-
23	370	179	191	-	370	179	191	-	-	-
24	318	155	163	-	318	155	163	-	-	-
25--29	1,284	609	675	-	1,284	609	675	-	-	-
25	244	135	109	-	244	135	109	-	-	-
26	257	126	131	-	257	126	131	-	-	-
27	286	138	148	-	286	138	148	-	-	-
28	257	102	155	-	257	102	155	-	-	-
29	240	108	132	-	240	108	132	-	-	-
30--34	1,109	557	552	-	1,109	557	552	-	-	-
30	179	94	85	-	179	94	85	-	-	-
31	214	110	104	-	214	110	104	-	-	-
32	213	100	113	-	213	100	113	-	-	-
33	248	119	129	-	248	119	129	-	-	-
34	255	134	121	-	255	134	121	-	-	-
35--39	1,091	571	520	-	1,091	571	520	-	-	-
35	199	100	99	-	199	100	99	-	-	-
36	226	121	105	-	226	121	105	-	-	-
37	241	140	101	-	241	140	101	-	-	-
38	206	108	98	-	206	108	98	-	-	-
39	219	102	117	-	219	102	117	-	-	-
40--44	934	518	416	-	934	518	416	-	-	-
40	152	84	68	-	152	84	68	-	-	-
41	237	130	107	-	237	130	107	-	-	-
42	162	92	70	-	162	92	70	-	-	-

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
43	224	117	107	-	224	117	107	-	-	-
44	159	95	64	-	159	95	64	-	-	-
45--49	538	276	262	-	538	276	262	-	-	-
45	107	58	49	-	107	58	49	-	-	-
46	108	45	63	-	108	45	63	-	-	-
47	97	54	43	-	97	54	43	-	-	-
48	141	78	63	-	141	78	63	-	-	-
49	85	41	44	-	85	41	44	-	-	-
50--54	522	282	240	-	522	282	240	-	-	-
50	101	59	42	-	101	59	42	-	-	-
51	108	51	57	-	108	51	57	-	-	-
52	86	47	39	-	86	47	39	-	-	-
53	156	80	76	-	156	80	76	-	-	-
54	71	45	26	-	71	45	26	-	-	-
55--59	382	220	162	-	382	220	162	-	-	-
55	74	40	34	-	74	40	34	-	-	-
56	66	43	23	-	66	43	23	-	-	-
57	67	33	34	-	67	33	34	-	-	-
58	100	52	48	-	100	52	48	-	-	-
59	75	52	23	-	75	52	23	-	-	-
60--64	299	170	129	-	299	170	129	-	-	-
60	68	42	26	-	68	42	26	-	-	-
61	55	35	20	-	55	35	20	-	-	-
62	36	20	16	-	36	20	16	-	-	-
63	79	38	41	-	79	38	41	-	-	-
64	61	35	26	-	61	35	26	-	-	-
65--69	269	142	127	-	269	142	127	-	-	-

	Total				Rural			Urban		
Sex/age group (in years)	All sexes	Male	Female	Trans gender	All sexes	Male	Female	All sexes	Male	Female
65	81	45	36	-	81	45	36	-	-	-
66	54	29	25	-	54	29	25	-	-	-
67	43	25	18	-	43	25	18	-	-	-
68	52	22	30	-	52	22	30	-	-	-
69	39	21	18	-	39	21	18	-	-	-
70--74	180	93	87	-	180	93	87	-	-	-
70	57	31	26	-	57	31	26	-	-	-
71	42	20	22	-	42	20	22	-	-	-
72	14	5	9	-	14	5	9	-	-	-
73	40	20	20	-	40	20	20	-	-	-
74	27	17	10	-	27	17	10	-	-	-
75 & ABOVE	180	101	79	-	180	101	79	-	-	-

Table 28: Depth of Water Table In Mouza

Administrative Unit	Type	Number	Overall (Average) Depth in (Feet)	Up to 50	51 - 100	101-250	251-500	501 Above
Chagai district	Number	48	147	2	11	34	1	-
	Percent	100		4	23	71	-2	
Chagai sub-	Number	10	107	1	4	5		
	Percent	100		10	40	50	-	
Dalbandin	Number	30	170		3	26	1	
	Percent	100			10	87	-3	
Nok Kundi Sub-Division	Number	6	105	1	3	2		
	Percent	100		17	50	33	-	

Source: Housing and Population Census 2023

Table 29: Mouzas Reporting Construction Type of Streets, Drains and Sewerage System

Administrative Unit		Street Type				Concrete / paved drains							
	Type	Metaled	Concrete	Bricked	Kacha	All (Concrete/ Paved Drains)	Mostly	Some	None	All (Sewerage System)	Mostly	Some	None
Chagai District	Number	-	-	-	48	-	1	47	-	-	1	-	47
	Percent	-	-	-	100	-	2	98	-	-		-	98
Chagai Sub-	Number	-	-	-	10	-	-	-	-	-	-	-	10
	Percent	-	-	-	100	-	-	100	-	-	-	-	100
Dalbandin	Number	-	-	-	30	-	1	29	-	-	1	-	29
	Percent	-	-	-	100	-	3	97	-	-	-	-	97
Nok Kundi Sub-	Number	-	-	-	6	-	-	-	-	-	-	-	6
	Percent	-	-	-	100	-	-	100	-	-	-	-	100
Taftan Sub-	Number	-	-	-	2	-	-	-	-	-	-	-	2
	Percent	-	-	-	100	-	-	100	-	-	-	-	100

Source: Housing and Population Census 2023

DISTRICT WISE TOTAL IRRIGATED AREA IN BALOCHISTAN
Source: https://ffc.com.pk/wp-content/uploads/2.-General-Maps-1.pdf

AREA WISE MAJOR CROPS IN EACH CROPPING ZONE
https://ffc.com.pk/wp-content/uploads/3.-INPUTS-USE-ASSESSMENT-1.pdf

Annex-EA

Table 30: Schools by Location and Functional Status

S.No.	LAT	LONG	Name of Asset	BEMIS Code	Functional Status
1	28.89448	64.41179	GBHS KILLI RASOOL BAKHSH	6784	Yes
2	28.88938	64.41484	GBHS KHUDA-E-RAHIM	6799	Yes
3	28.89331	64.40224	GBPS KILLI SARDAR HASHIM KHAN	06826,	Yes
4	28.89448	64.40791	GBPS INDALLAHI	6828	Yes
5	28.88448	64.40719	GBPS HINDU MUHALLAH	6774	Yes
6	28.88031	64.40464	GBPS KILLI GHARIB ABAD	6796	Yes
7	28.88089	64.40227	GBMIDS KILLI NOOR BAKHSH	6773	Yes
8	28.88566	64.40253	GBHS DALBANDIN	06770,	Yes
9	28.89771	64.40184	GBHS HAJI QASIM KHAN	6785	Yes
10	28.91571	64.41793	GBHS KILLI DAWOODD ABAD	6829	Yes
11	28.90029	64.39722	GBPS FAISAL COLONY	9027	Yes
12	28.89486	64.39314	GBPS KILLI FAQIR DAD	6737	Yes
13	28.95281	64.38514	GBHS SARGEESHA	6791	Yes
14	28.92744	64.40194	GBPS KILLI SYED KARAM SHAH	6733	Yes
15	29.02628	64.38987	GGPS KILLI IBRAHIM SARGESHA	17411	No
16	28.93959	64.39049	GGPS KILLI IMAM BAKHSH SARGESHA	17409	Yes
17	28.9172	64.40774	GGPS KILLI KAREEM ABAD WADD	17414	Yes
18	28.88812	64.41943	GBMIDS KILLI KHUDA BAKHSH	6827	Yes
19	28.87918	64.40867	GBPS KILLI BAZ MOHAMMAD	6830	Yes
20	28.91947	64.43642	GBPS KARODUK LANDI	6804	Yes
21	28.88256	64.40902	GBPS KHAN JAN SANJRANI	6777	Yes
22	28.88537	64.40569	GGHS DALBANDIN	6769	Yes
23	28.88588	64.40038	GGMIDS MADRASSA SULTANIA	9801	Yes
24	28.89819	64.39826	GBPS MADRASSA GHOUSIA	6738	Yes
25	28.89872	64.38821	GGHS ZAHOOR COLONY	11064	Yes
26	28.89336	64.41219	GGMIDS KILLI RASOOL BAKHSH SUMALIANI	6809	Yes
27	28.89505	64.40859	GGMIDS KILLI WAZIR KHAN	9421	Yes

S.No.	LAT	LONG	Name of Asset	BEMIS Code	Functional Status
28	28.9206	64.8201	GGPS HAJI JANO MAZANG	0	No
29	28.9608	64.8143	GGPS NOK CHAH KILLI SULTAN MUHAMMAD	12136	Yes
30	28.96142	64.69064	GGPS MADAD KHAN KARODUK	12141	Yes
31	28.82294	64.31679	GGPS ABDUL GHANI MIR BORE	12134	No
32	28.86907	64.34406	GGPS QADAR BAKHSH	12135	Yes
33	28.88018	64.40439	GGMIDS GHARIB ABAD	10674	Yes
34	28.88372	64.42264	GGHS MUHAMMAD RAHIM NOTEZAI	9802	Yes
35	28.88358	64.44836	GBPS ALANGI		Yes
36	28.88739	64.42456	GGMIDS KOHEE KHAN NOTEZAI	10678	Yes
37	28.88254	64.42235	GBPS KILLI MUHAMMAD RAHEEM NOTIZAI	6808	Yes
38	28.88793	64.41645	GGHS KHUDA-I-RAHEEM	6799	Yes
39	28.8987	64.38418	GBPS ZAHOOR COLONY	6760	No
40	28.94347	64.60894	GGPS PESHOK	68271	Yes
41	28.92845	64.54859	GGPS KILLI RASOOL BAKHSH LAGHAP	10677	Yes
42	29.01292	65.33498	GBMIDS FATEH MUHAMMAD	14394	Yes
43	28.9638	64.68145	GBPS KARDUK SHER KHAN	6802	Yes
44	28.9522	65.05981	GBPS GHULAM NABI CHAH SAR	6839	Yes
45	28.96075	64.69078	GBPS KILLI MIR MADAD KHAN KURDAT	6811	Yes
46	28.94248	64.61205	GBMIDS PESHUK	6772	Yes
47	28.92842	64.55131	GBPS LAGHAP	6812	Yes
48	28.97115	64.39216	GBPS KILLI MIR MOHAMMED AZEEM SAR GHASHA	9416	Yes
49	28.98913	65.26731	GGMIDS NOOR MUHAMMAD PADAG	12147	No
50	29.34263	64.68219	GBPS MALIK MUHAMMAD ALI MUHAMMAD HASSANI	17248	Yes
51	28.98519	65.25884	GGPS KILLI BADAL KHAN	12145	No
52	29.34422	64.68588	GBPS KILLI HAJI AKBAR MOHAMMAD HASSANI	16667	Yes
53	28.98207	65.22276	GGPS HAJI KHUDA BAKHSH	10435	Yes
54	28.945	65.07472	GGPS HAJI QULLI CHARSAR	10791	No
55	28.9517	65.05711	GGPS GHULAM NABI CHAHSAR	12138	No
56	29.32253	64.67677	GGPS KILLI PEERAKZAI CHAGAI	17414	No

S.No.	LAT	LONG	Name of Asset	BEMIS Code	Functional Status
57	29.32998	64.67602	GGPS KILLI KHUDA-E-DAAD CHAGAI	17408	Yes
58	29.33505	64.68781	GBPS KILLI HAZOOR BAKHSH	9423	Yes
59	29.35138	64.67875	GGPS KILLI MALIK ABDUL SATTAR CHAGAI	17400	Yes
60	29.34694	64.69404	GBHS SAKHI PIR MUHAMMAD	6820	Yes
61	29.34488	64.69426	GGPS KILLI SAKHI PEER MUHAMMAD	9786	Yes
62	29.2431	64.6807	GBPS KILLI MALIK ROSHAN MUHAMMAD HASANI	2525	No
63	29.22341	64.69517	GBPS KILLI GHULAM HAIDER	9415	Yes
64	29.21537	64.69283	GBMIDS ALI BAIG ROSHAN	2	Yes
65	29.14865	64.71391	GBPS KILLI HAJI ZAKRIA	6781	Yes
66	29.14038	64.69782	GBHS AMIN ABAD	6771	Yes
67	29.36637	64.70824	GGPS MULLA KAMAL BISHRI	15581	No
68	29.14921	64.71382	GGPS KILLI HAJI ZAKRIA KHAN MUHAMMAD HASSANI AMIN ABAD	17421	Yes
69	29.14945	64.70114	GGMIDS JAN MUHAMMAD AMIN ABAD	10675	Yes
70	29.1409	64.69952	GGPS MIRZA FAIZULLAH KHAN AMINABAD	9791	Yes
71	29.14655	64.68307	GGPS KILLI GHULAM SARWAR AMIN ABAD	17425	Yes
72	29.12714	64.6938	GGPS MIR MUHAMMAD KHAN SANJRANI AMINABAD	12149	Yes
73	28.74659	63.84499	GGMIDS HAJI MUHAMMAD ALI YAK MACH	9026	Yes
74	28.73993	63.85136	GGPS KILLI MOHMMAD AZAM YAK MACH	12142	Yes
75	29.02758	64.01011	GGMIDS PAT GUNEKO	9788	Yes
76	28.83317	63.99407	GBPS KILLI GHOUSIA KHALIFA ABDUL RAHIM	6730	Yes
77	28.794	63.9807	GGPS FAIZ MUHAMMAD ISMAIL	12140	No
78	28.84003	64.22021	GBPS TALOO	6734	Yes
79	29.2971	64.67455	GBPS NADIR ABAD	6815	Yes
80	29.05058	63.74282	GBPS NAWAB JAN GIRRUM	12978	No
81	28.82175	63.783	GBPS DUR MUHAMMAD KASAN NOOLI	15685	Yes
82	29.26979	64.69019	GBHS SHADI SHAIF	6818	Yes
83	29.2894	64.66312	GBPS HAJI MUHAMMAD Yaqoob NILI	6752	Yes
84	29.40154	64.7317	GBPS KILLI MIR BAZ BISHRI	6817	Yes
85	28.74992	63.84632	GBPS HAJI MOHAMMAD ALI YAK MACH BARATAGAZI	6731	Yes

S.No.	LAT	LONG	Name of Asset	BEMIS Code	Functional Status
86	28.74154	63.84746	GBHS YAK MACH	6736	Yes
87	28.73818	63.85121	GBPS KILLI AZAM YAK MACH	9026	Yes
88	29.02609	64.01239	GBHS PAT E GOWANAKOH	6788	Yes
89	28.98541	64.01907	GBPS HAJI MUHAMMAD MURAD PAT-E-GONAKOO	14573	No
90	28.96167	64.01267	GBPS KILLI NABI BAKHSH SORGAL	6792	Yes
91	28.91259	64.01378	GBPS KILLI ABDUL GHANI GAMAN	6789	Yes
92	28.79133	63.97818	GBPS KILLI FAIZ MUHAMMAD	9022	No
93	28.79045	63.97499	GBPS KILLI KHALIFA KHAIR JAN	9420	Yes
94	29.37424	64.71383	GBPS NOOK ABAD	6822	Yes
95	29.35217	64.69924	GBHS CHAGHI	6814	Yes
96	29.31282	64.67946	GBHS DASHTIGORAN	6816	Yes
97	29.28948	64.66872	GBPS KILLI HAJI MUHAMMAD	14902	Yes
98	29.2854	64.67165	GBPS HAJI KOCHAL	6819	Yes
99	29.23417	64.67792	GBPS SHAI SALAR	6823	Yes
100	28.96443	63.75242	GBPS KILLI ABDUL AZIZ DHEDAR MEROKI	12958	Yes
101	28.75244	63.887	GBMIDS SARDAR UMAR GORGAJE	6729	Yes
102	28.79131	64.02114	GBPS ISMAILI JOOJUKI	6727	Yes
103	29.4746	64.75764	GBPS LASHKAR AAB GUL MUHAMMAD	2025	No
104	29.46808	64.75161	GBHS PIR MOHAMMED SAMALANI	9424	Yes
105	29.4102	64.73255	GBPS KILLI HAJI MURAD SUMALANI BISHR	16940	Yes
106	28.98114	65.18473	GBPS MAJOR BAHADUR KHAN	6813	No
107	28.94453	65.07585	GBPS KILLI JAMADAR KHAN SASOLI CHARSAR	16664	Yes
108	28.93652	65.06274	GBPS SARDAR MUHAMMAD ALAM	14574	Yes
109	28.98501	65.25946	GBPS KILLI BADAL KHAN WARIS	6838	Yes
110	28.98189	65.22201	GBHS KHUSHKAIN NALLI	6836	Yes
111	29.00145	65.31373	GBPS SENG BAND	6841	Yes
112	28.98825	65.26769	GBPS PADDAG ROAD	6843	Yes
113	28.82917	64.39069	GGPS SIA JUNGAL	11500	Yes
114	28.83002	64.73971	GBPS JHANDI AMAG	6806	No

S.No.	LAT	LONG	Name of Asset	BEMIS Code	Functional Status
115	28.87557	64.76916	GBPS HAJI RAHIM BAKHSH PAZHOI	12963	Yes
116	28.91983	64.81877	GBMIDS HAJI JANOO KHAN MAZANG	6775	Yes
117	28.88555	64.78725	GBPS BAZ GUZ	6805	Yes
118	28.8411	64.39962	GBPS SAYAH JUNGEL	6794	Yes
119	28.99384	64.87136	GBPS LANDI NO 17 KILLI MUHAMMAD BAKHSH	6833	No
120	28.90299	64.86581	GBPS NOOR SHAH	9024	Yes
121	28.90951	64.8581	GBPS KILLI MIR ABDUL KHALIQ	6837	Yes
122	28.91013	64.85848	GGPS KILLI MIR ABDUL KHALIQ MUHAMMAD HAS	15355	Yes
123	29.15313	65.38457	GBPS SHIKARI LANDI	6834	Yes
124	28.88628	64.89052	GBPS MIR ATTA MUHMMAD PADAG	10494	Yes
125	29.02653	64.92864	GBPS KILLI FASEELA SAIFULLAH	1457	No
126	29.10332	65.18171	GBPS PADAG STATION	6840	No
127	29.1321	65.27134	GBPS MASEETI LANDI	6776	Yes
128	29.44139	64.76955	GBPS HAJI FAZIL MUHAMMAD	6824	Yes
129	29.24858	64.27824	GBPS KILLI HAJI MURAD POSTI KARAIZ	6787	Yes
130	29.48634	64.76012	GGPS KILLI MALIK SHAH HUSSAIN LASHKAR AAP		Yes
131	29.50541	64.77648	GBPS HAJI BAHI KHAN MUHAMMAD ZAI		No
132	29.5465	64.80064	GBPS KILLI HAJI MUHAMMAD NALAB	8415	No
133	29.32228	64.44389	GBPS DOGO NAN		Yes
134	29.26804	64.34845	GBPS RAZA SHAH		Yes
135	29.29996	64.31176	GBPS QILLAH KURD	9076	No
136	28.89319	64.90755	GBHSS KUNRAK AJEEB		Yes
137	29.35757	64.71229	GBPS LIJAY KARAIZ	8323	Yes
138	28.82837	62.75316	GGMIDS KILLI ZOOR ABAD NOK KUNDI	8128	Yes
139	28.8333	62.74184	GGPS KILLI TEHSIL NOK KUNDI	50228	Yes
140	28.82709	62.74535	GBPS MOLVI MUHAMMAD ALAM		Yes
141	28.82937	62.73511	GBPS KILLI CUSTOM NOK KUNDI		Yes
142	28.82743	62.7415	GGHSS NOK KUNDI		Yes
143	28.81911	62.75495	GGHS KILLI SHER ABAD	10785	Yes

S.No.	LAT	LONG	Name of Asset	BEMIS Code	Functional Status
144	28.82875	62.76009	GBHS SAINDAK HASSAN ABAD NOK KUNDI		Yes
145	28.81538	62.75357	GBMIDS SHER ABAD NOK KUNDI		Yes
146	28.82979	62.76396	GBPS HUSSAIN ABAD NOK KUNDI		Yes
147	28.83993	62.75494	GBPS KILLI MENGAL ABAD NOK KUNDI		Yes
148	28.8232	62.75208	GBHS GHARIB ABAD NOK KUNDI		Yes
149	28.82009	62.74833	GGPS GHARIB ABAD		Yes
150	28.82124	62.74938	GGPS ALLAHABAD (NOK KUNDI)		Yes
151	28.94059	61.58307	GBMIDS ABDUL RAHIM KHILJI TAFTAN		Yes
152	28.95443	61.5841	GBHSS TAFTAN		Yes
153	28.7455	61.73011	GBPS HAROON NOUTIZAI TAFTAN		No
154	28.63546	61.83381	GBPS KILLI HAJI ISMAIL TALIB TAFTAN		No
155	28.93308	64.25284	GGPS KILLI NOOR ALLAH KANI	17417	No
156	28.94074	64.23976	GBMIDS AYUB KHAN KANI	6728	Yes
157	28.89981	64.14275	GBPS SORAN MUHAMMAD USMAN	6780	No
158	28.94395	64.12888	GBPS KILLI SULEMAN SORAN DALBANDIN SUSTAINED	16927	Yes
159	28.90637	64.14466	GGPS KILLI HABIB ULLAH SORAN	17412	Yes
160	28.98968	64.13227	GBPS ABDUL RAZZAQ MORGHI	12483	Yes
161	28.89126	64.3795	GBPS K NABI BAKHSH SORGIL	15161	Yes
162	28.8974	64.95067	GBPS KILLI MUHAMMAD AZAM KONARAK	6779	Yes
163	28.92984	64.97668	GBMIDS KILLI HAJI MUHAMMAD SHAREEF KAPOK	6844	Yes
164	28.44506	63.31807	GBPS MALIK SALEEM MOHAMMAS HASNI YAKMACH	16435	No
165	28.99215	63.57429	GBMIDS GHAT BROTO	6763	Yes
166	29.06338	64.27176	GBPS KILLI HAJI JAHANGEER	6765	No
167	29.06532	64.24151	GBPS KUCHKI CHAH	0	No
168	29.1074	64.17773	GBPS CHIL GHAZI	6790	No
169	29.04096	64.1011	GBPS BADAL KHAN	6798	Yes
170	28.89208	64.26558	GBPS KILLI TALAB MALIK HAJI KHUDA E NAZAR	17093	No
171	28.9693	64.3131	GBPS KILLI HAJI PIR DAD DHADAR	6795	Yes
172	29.04832	64.14673	GBPS BASOO KARAIZ	6786	No

S.No.	LAT	LONG	Name of Asset	BEMIS Code	Functional Status
173	28.83114	64.5596	GBPS NAWARH H. MALIK NAIK	6803	Yes
174	28.75637	64.24235	GGPS SHAHSAWAR KUNAR	12391	No
175	28.82543	64.65331	GBPS MUHAMMAD RAHIM HASSANI	6835	No
176	28.83308	64.55895	GGPS NAIK MUHAMMAD NAWAR	10679	No
177	28.83338	64.57936	GGPS KILLI ABDUL REHMAN DARCHEDAG	17406	Yes
178	28.93751	63.90741	GBPS KHALIFA MUHAMMAD HAYAT	13344	No
179	28.88757	63.94504	GBPS MULLA ABDUL AZIZ MASTUNG	15631	No
180	28.9925	63.8915	GBPS MALIK MUHAMMAD ISMAIL KALLAG	6793	No
181	28.9684	63.54412	GGPS KILLI ABDUL AZIZ CHAHOOK	17405	Yes
182	28.91827	63.57727	GBPS KILLI SAIF-UD-DIN GAT	9417	Yes
183	29.00146	63.63145	GGPS KILLI RASOOL BAKHSH MIR KHAN CHAH	17403	Yes
184	28.97791	63.76539	GBPS SYED MIR HASSAN	6735	No
185	28.80038	63.72252	GBPS KILLI KHAN JAN NOOLI	9785	Yes
186	28.81808	63.71896	GBMIDS KILLI NOOLI ABDULLAH	6732	Yes
187	28.81806	63.70784	GGPS KILLI ABDUL ZAHIR NOOLI	17415	Yes
188	28.89987	64.4446	GGPS KILLI KHUDA MURAD COLONY	17404	Yes
189	28.6311	61.84416	GBPS TALAB	12957	No
190	28.90077	64.39792	GGHS FAISAL COLONY MASHRAQ	9077	Yes
191	28.94988	61.58289	GGMIDS TAFTAN	10773	Yes
192	29.17704	63.59084	GBPS JOHAR KARAIZ	6758	Yes
193	29.24562	63.62561	GBMIDS KILLI MUHAMMAD KHAN AMURI	6759	Yes
194	29.25235	63.63341	GGPS KILLI MOHAMMAD TAHIR AMURI	17413	Yes
195	29.23732	63.60449	GBPS SARDAR ANWAR JAN SINJRANI PATKI AMRI	16416	No
196	28.88192	64.41218	GGMIDS KHAN JEHAN SIN	10776	Yes
197	28.87984	64.40317	GGPS MALIK NOOR BAKHSH	9642	Yes
198	29.44896	63.38944	GBPS MUHAMMAD AMIN YAK MACH SH: KILLI SARDAR ANWAR JAN	13354	No
199	28.89631	64.91506	GGHS KILLI AJAB KHAN KANRAK	12143	Yes
200	28.96152	64.81665	GBMIDS NOK CHAH	6801	Yes
201	29.37383	64.71472	GGPS NOK ABAD RAHIM BAKHSH	10680	Yes

S.No.	LAT	LONG	Name of Asset	BEMIS Code	Functional Status
202	29.40781	64.72879	GGPS KILLI FAYZULLAH SHAH	12953	No
203	29.27161	64.67305	GGPS KILLI UMAITH KHAN SHADI SHEF CHAGAI	17418	Yes
204	29.27003	64.68855	GGPS KILLI MALIK DIL MURAD	15578	No
205	29.0501	65.42942	GBMIDS K MUHAMMAD WARIS PADAG	15160	Yes
206	28.97392	64.38891	GGPS KILLI MIR MUHAMMAD AZIM SARGEESHA	11014	Yes
207	28.99587	64.37844	GGPS DEEN MUHAMMAD GUL GUZ	12146	Yes
208	28.95043	64.38004	GGHS SARGESHA / SAKHI DOST MUHAMMAD	12392	Yes
209	28.91657	64.4158	GGMIDS DAWOODD ABAD DAUD	10149	Yes
210	28.8758	64.37994	GBDC Dalbandin		Yes
211	28.90166	64.40662	GGIC Dalbandin		Yes
212	28.90879	64.40007	GGPS FAISAL COLONY EAST	12698	Yes
213	28.89627	64.40022	GGMIDS KILLI QASIM KHAN	9800	Yes
214	28.89431	64.40116	GGPS KILLI SARDAR HASHIM KHAN	6832	Yes
215	28.88248	64.39851	GGPS KILLI RASOOL BAKHSH NOTANI	9637	No
216	28.89365	64.39324	GGPS KILLI FAQIR DAD DANMO	10673	Yes
217	28.69017	64.18314	GBPS KHAR GOSH KAN	6757	No
218	28.61508	64.16246	GGPS KILLI ABDUL KAREEM LOOS	17407	Yes
219	28.63351	64.12557	GBPS KILLI HAJI DIN MUHAMMAD	9419	No
220	28.88187	64.36693	GBPS KILLI ABDUL GHANI SURGIL DALBANDIN	15962	Yes
221	29.18347	64.28371	GGPS KILLI ISMAIL GAPADH	17424	Yes
222	29.1362	64.32227	GBPS KILLI AZIZ MUHAMMAD MUKUPTAUK SUSTAINED	16928	Yes
223	28.94415	64.40431	GGPS KILLI GHULAM MUHAMMAD NODEZAI SARGRESHA	17252	Yes
224	29.00736	65.3079	GGPS KILLI RASOOL BAKHSH PADAG	12144	No
225	29.31595	64.68165	GGPS KILLI HAJI NEHAL KHAN DASHT-E-GORAN	11495	Yes
226	28.82861	62.74793	GGPS KILLI BAZAR MASHRAKI	10809	Yes
227	28.82825	62.75262	GBPS ZOR ABAD	12968	Yes
228	28.82885	62.7352	GGMIDS KILLI CUSTOM NOK KUNDI	10788	Yes
229	28.82859	62.74542	GBHSS NOK KUNDI	0	No
230	28.74545	61.73008	GGPS HAROON ABAD WASHAB	14395	No

S.No.	LAT	LONG	Name of Asset	BEMIS Code	Functional Status
231	28.5993	63.06826	GBPS KILLI MUHAMMAD	14576	No
232	28.65463	61.8188	GGPS KILLI QADIR BAKHSH TALAB	17402	Yes
233	29.22639	61.65639	GBMIDS HAMAL AAB	6741	Yes
234	29.55186	61.16526	GBPS SIRZAY KILLI HAJI DAD MUHAMMAD	6750	Yes
235	28.59726	63.06663	GBMIDS ESSA TAHIR	6726	Yes
236	28.60037	63.07017	GBPS FAIZ UL QURAAN HASSANABAD	9422	Yes
237	28.57367	63.21367	GBPS PANYAM	6754	No
238	28.52978	63.03112	GBPS BRAHOK	6753	No
239	29.35382	64.70023	GGHSS PADAGI CHAGAI	9076	Yes
240	29.39077	64.01022	GBPS BAR-AAB-CHAH	6755	Yes
241	29.37999	64.02913	GBMIDS H MUHAMMAD BILAL BRACHAH	15162	No
242	29.3849	64.03225	GBPS KILLI GHULAM MOYYUD-DIN AMRI	15580	No
243	29.26024	64.03518	GBPS KILLI ABDUL REH	6767	No
244	29.25794	64.27575	GGPS KILLI MUHAMMAD MURAD POSTI KARAIZ	12137	No
245	29.20676	63.44017	GGPS KILLI SYED MOHAMMAD SALOOK JHULLI	17410	Yes
246	29.20824	63.40669	GGPS KILLI MALIK MUHAMMAD AMIN KAURAI JHULLY	17419	Yes
247	29.19893	63.38619	GBPS HONAK KILLI NAIK MUHAMMAD	6766	No
248	29.28306	63.2892	GBPS SHEENGAROW SHAH DEWANAG	6768	No
249	29.34854	63.31699	GGPS MEHRAB DIWANAG	12390	No
250	29.1767	62.5596	GBPS AMIR CHAH (DOORBAN CHAH)	6747	Yes
251	29.00518	62.46031	GBPS MASHKI CHAH	6744	Yes
252	29.09687	62.29211	GBPS KILLI JUMA KHAN HUMMAY	12971	No
253	28.27518	62.6653	GBPS RAJAY	6743	Yes
254	28.30849	62.70658	GBPS GOWALISHTOP	6725	No
255	29.12126	64.3263	GBPS Killi Shareef Khan Mukuntuk (Community)	45090	Yes
256	29.34497	64.67143	GBPS Killi Saeed Abad Mengal Community	45084	Yes
257	29.35887	64.66258	GGPS Dost Abad	17423	No
258	29.36306	64.70359	GBPS Killi Naik Muhammad Chaghi	18071	No
259	29.3724	64.71222	GBPS Killi Muhammad Azom Lijjay Karez	18071	No

S.No.	LAT	LONG	Name of Asset	BEMIS Code	Functional Status
260	28.90522	64.80563	GPS Killi Safar Khan Bazgaz Community	45080	Yes
261	28.95501	61.5841	Residantial Quarter GBHSS Taftan City		Yes
262	28.918	63.58638	GBPS Killi Pasund Khan Ghatt Broto	18072	No
263	28.81959	62.74477	GBPS Jhully (Ala Abad)	6764	No

Annex-EB

Table 31: Schools' Building Condition and Availability of Space for New Room(s)

S#	Bemis Code	Name of School	UC	Building Condition	Space For New Rooms
1	06724	GGHSS NOK KUNDI	NOK KUNDI	Need Repair	Yes
2	06725	GBPS GOWALISHTOP	NOK KUNDI	Need Repair	Yes
3	06726	GBMIDS ESSA TAHIR	NOK KUNDI	Need Repair	Yes
4	06727	GBPS ISMAILI JOOJUKI	CHILGAZAI	Need Repair	Yes
5	06728	GBMIDS AYUB KHAN KANI	CHILGAZAI	Need Repair	Yes
6	06729	GBMIDS SARDAR UMAR GORGAJE	CHILGAZAI	Need Repair	Yes
7	06730	GBPS KILLI GHOUSIA KHALIFA ABDUL RAHIM	CHILGAZAI	Dangerous Condition	Yes
8	06731	GBPS HAJI MOHAMMAD ALI YAK MACH BARATAGAZI	CHILGAZAI	Need Repair	Yes
9	06732	GBMIDS NOOLI ABDULLAH	CHILGAZAI	Need Repair	Yes
10	06733	GBPS KILLI SYED KARAM SHAH	CHILGAZAI	Need Repair	Yes
11	06734	GBPS TALOO	CHILGAZAI	Need Repair	No
12	06735	GBPS SYED MIR HASSAN	CHILGAZAI	Dangerous Condition	Yes
13	06736	GBHS YAK MACH	CHILGAZAI	Need Repair	Yes
14	06737	GBPS KILLI FAQIR DAD	CHILGAZAI	Need Repair	Yes
15	06738	GBPS MADRASSA GHOUSIA	CHILGAZAI	Need Repair	Yes
16	06739	GBHSS NOK KUNDI	NOK KUNDI	Need Repair	Yes
17	06740	GBHS GHARIB ABAD NOK KUNDI	NOK KUNDI	Need Repair	Yes
18	06741	GBMIDS HAMAL AAB	TAFTAN	Need Repair	Yes
19	06742	GBHS SAINDAK HASSAN ABAD NOK KUNDI	NOK KUNDI	Need Repair	Yes
20	06743	GBPS RAJAY	NOK KUNDI	Need Repair	Yes
21	06744	GBPS MASHKI CHAH	NOK KUNDI	Need Repair	Yes

S#	Bemis Code	Name of School	UC	Building Condition	Space For New Rooms
22	06745	GBHSS TAFTAN	TAFTAN	Satisfactory	Yes
23	06746	GBPS KACHWO HAJI ABD	TAFTAN	Need Repair	Yes
24	06747	GBPS AMIR CHAH (DOORBAN CHAH)	NOK KUNDI	Dangerous Condition	No
25	06748	GBPS TUNG KACHWO	TAFTAN	Dangerous Condition	Yes
26	06749	GBPS KILLI CUSTOM NOK KUNDI	NOK KUNDI	Need Repair	Yes
27	06750	GBPS SIRZAY KILLI HAJI DAD MUHAMMAD	TAFTAN	Need Repair	No
28	06751	GBPS MOLVI MUHAMMAD ALAM	NOK KUNDI	Satisfactory	No
29	06752	GBPS HAJI MUHAMMAD YAQOOB NILI	CHAGAI	Dangerous Condition	Yes
30	06753	GBPS BRAHOK	NOK KUNDI	Need Repair	Yes
31	06754	GBPS PANYAM	AMURI	Satisfactory	Yes
32	06755	GBPS BAR-AAB-CHAH	CHAGAI	Need Repair	No
33	06756	GBPS MUHAMMAD AFZAL RABAT	CHILGAZAI	Need Repair	Yes
34	06757	GBPS KHAR GOSH KAN	CHILGAZAI	Need Repair	No
35	06758	GBPS JOHAR KARAIZ	AMURI	Satisfactory	Yes
36	06759	GBMIDS AMRI	AMURI	Dangerous Condition	Yes
37	06760	GBPS ZAHOOR COLONY	SADDAR DALBANDIN	Need Repair	Yes
38	06761	GBPS KILLI HAJI BHAEE KHAN MOHAMMAD ZAI	GOMZAI	NULL	Yes
39	06762	GBPS KIRTAKA	NOK KUNDI	Need Repair	No
40	06763	GBMIDS GHAT BROTO	AMURI	Need Repair	Yes
41	06764	GBPS JHULLY (ALA ABAD)	NOK KUNDI	Dangerous Condition	Yes
42	06765	GBPS KILLI HAJI JAHANGEER	CHILGAZAI	Need Repair	No
43	06766	GBPS HONAK KILLI NAIK MUHAMMAD	NOK KUNDI	Need Repair	Yes
44	06767	GBPS SALEH KARAIZ	CHAGAI	Satisfactory	Yes
45	06768	GBPS MEHRAB KHAN SHAH DEWANG	NOK KUNDI	Need Repair	No
46	06769	GGHSS DALBANDIN	DALBANDIN	Satisfactory	Yes
47	06770	GBHS DALBANDIN	DALBANDiN	Need Repair	Yes
48	06771	GBHSS AMIN ABAD	CHAGAI	Satisfactory	Yes
49	06772	GBMIDS PESHUK	DALBANDIN	Dangerous Condition	Yes
50	06773	GBMIDS KILLI NOOR BAKHSH	DALBANDIN	Need Repair	Yes

S#	Bemis Code	Name of School	UC	Building Condition	Space For New Rooms
51	06774	GBPS HINDU MUHALLAH	DALBANDIN	Need Repair	Yes
52	06775	GBMIDS HAJI JANOO KHAN MAZANG	PADAG	Need Repair	Yes
53	06776	GBPS MASEETI LANDI	PADAG	Need Repair	Yes
54	06777	GBPS KHAN JAN SANJRANI	DALBANDIN	Need Repair	Yes
55	06778	GBPS DOGO NAN	CHAGAI	Satisfactory	No
56	06779	GBPS KILLI MUHAMMAD AZAM	PADAG	Dangerous Condition	Yes
57	06780	GBPS SORAN	CHILGAZAI	Dangerous Condition	Yes
58	06781	GBPS KILLI JAN MOHAMMAD	CHAGAI	Satisfactory	Yes
59	06782	GBMIDS ALI BAIG ROSHAN	CHAGAI	Satisfactory	Yes
60	06783	GBPS QILLAH KURD	CHAGAI	Satisfactory	Yes
61	06784	GBHS KILLI RASOOL BAKHSH	DALBANDIN	Satisfactory	Yes
62	06785	GBHS HAJI QASIM KHAN	DALBANDIN	Need Repair	Yes
63	06786	GBPS BASOO KARAIZ	CHILGAZAI	Need Repair	Yes
64	06787	GBPS KILLI HAJI MURAD POSTI KARAIZ	AMURI	Need Repair	Yes
65	06788	GBHS PAT GONKOO (ALHAJJ MALIK EID MUHAMMAD)	Pat-e-Gwanakkoh	Need Repair	Yes
66	06789	GBPS KILLI ABDUL GHANI GA	CHILGAZAI	Need Repair	Yes
67	06790	GBPS CHIL GHAZI	CHILGAZAI	Need Repair	Yes
68	06791	GBHS SARGEESHA	CHILGAZAI	Need Repair	No
69	06792	GBPS KILLI NABI BAKHSH SORGAL	CHILGAZAI	Need Repair	Yes
70	06793	GBPS MALIK MUHAMMAD ISMAIL KALLAG	CHILGAZAI	Need Repair	No
71	06794	GBPS SAYAH JUNGEL	SADDAR DALBANDIN	Need Repair	Yes
72	06795	GBPS KILLI HAJI PIR DAD DHADAR	DALBANDIN	Need Repair	Yes
73	06796	GBPS KILLI GHARIB ABAD	SADDAR DALBANDIN	Satisfactory	No
74	06797	GBPS KUCHKI CHAH	CHILGAZAI	Need Repair	Yes
75	06798	GBPS BADAL KHAN	CHILGAZAI	Need Repair	Yes
76	06799	GBHS KHUDA-E-RAHIM	DALBANDIN	Need Repair	Yes
77	06800	GGHS KHUDA-I-RAHEEM	DALBANDIN	Dangerous Condition	No
78	06801	GBMIDS NOK CHAH	PADAG	Satisfactory	No
79	06802	GBPS KARDUK SHER KHAN	SADDAR DALBANDIN	Satisfactory	Yes

S#	Bemis Code	Name of School	UC	Building Condition	Space For New Rooms
80	06803	GBPS NAWARH H. MALIK NAIK	SADDAR DALBANDIN	Need Repair	Yes
81	06804	GBPS KARODUK LANDI	SADDAR DALBANDIN	Need Repair	Yes
82	06805	GBPS BAZ GUZ	PADAG	Need Repair	Yes
83	06806	GBPS JHANDI AMAG	PADAG	Dangerous Condition	No
84	06807	GBPS ALANGI	SADDAR DALBANDIN	Need Repair	Yes
85	06808	GBPS KILLI MUHAMMAD RAHEEM NOTIZAI	SADDAR DALBANDIN	Need Repair	Yes
86	06809	GGMIDS KILLI RASOOL BAKHSH SUMALIANI	SADDAR DALBANDIN	Satisfactory	Yes
87	06810	GBHSS KUNRAK AJEEB	PADAG	Need Repair	Yes
88	06811	GBPS KILLI MIR MADAD KHAN KURDAT	SADDAR DALBANDIN	Satisfactory	Yes
89	06812	GBPS LAGHAP	SADDAR DALBANDIN	Dangerous Condition	Yes
90	06813	GBPS MAJOR BAHADUR KHAN	PADAG	Satisfactory	Yes
91	06814	GBHS CHAGHI	CHAGAI	Need Repair	Yes
92	06815	GBPS NADIR ABAD	CHAGAI	Need Repair	Yes
93	06816	GBHS DASHTIGORAN	CHAGAI	Need Repair	Yes
94	06817	GBPS BISHRI	CHAGAI	Need Repair	Yes
95	06818	GBHS SHADI SHAIF	CHAGAI	Need Repair	Yes
96	06819	GBPS HAJI KOCHAL	CHAGAI	Satisfactory	Yes
97	06820	GBHS SAKHI PIR MUHAMMAD	CHAGAI	Satisfactory	Yes
98	06821	GBPS LIJAY KARAIZ	CHAGAI	Dangerous Condition	Yes
99	06822	GBPS NOOK ABAD	CHAGAI	Need Repair	Yes
100	06823	GBPS SHAI SALAR	CHAGAI	Need Repair	Yes
101	06824	GBPS HAJI FAZIL MUHAMMAD	CHAGAI	Dangerous Condition	Yes
102	06825	GBPS LASHKAR AAB GUL MUHAMMAD	CHAGAI	Need Repair	Yes
103	06826	GBPS KILLI SARDAR HASHIM KHAN	SADDAR DALBANDIN	Need Repair	Yes
104	06827	GBHS KILLI KHUDA BAKHSH	SADDAR DALBANDIN	Satisfactory	Yes
105	06828	GBPS INDALLAHI	DALBANDIN	Need Repair	Yes
106	06829	GBHS KILLI DAUD ABAD	SADDAR DALBANDIN	Need Repair	Yes
107	06830	GBPS KILLI BAZ MOHAMMAD	DALBANDIN	Need Repair	Yes
108	06831	GBPS NOTANAABAD DALBANDIN SUSTAINED /SH:RASOOL BUX NOTEZAI	DALBANDIN	Need Repair	No

S#	Bemis Code	Name of School	UC	Building Condition	Space For New Rooms
109	06832	GGPS KILLI SARDAR HASHIM KHAN	SADDAR DALBANDIN	Satisfactory	No
110	06833	GBPS LANDI NO 17 KILLI MUHAMMAD BAKHSH	PADAG	Need Repair	Yes
111	06834	GBPS SHIKARI LANDI	PADAG	Need Repair	Yes
112	06835	GBPS MUHAMMAD RAHIM HASSANI	PADAG	Need Repair	No
113	06836	GBMIDS KHUSHKAIN NALLI	PADAG	Need Repair	Yes
114	06837	GBPS KILLI MIR ABDUL KHALIQ	PADAG	Need Repair	Yes
115	06838	GBPS KILLI BADAL KHAN WARIS	PADAG	Satisfactory	Yes
116	06839	GBPS GHULAM NABI CHAH SAR	PADAG	Dangerous Condition	Yes
117	06840	GBPS PADAG STATION	PADAG	Satisfactory	No
118	06841	GBPS SENG BAND	PADAG	Need Repair	Yes
119	06842	GBPS HAZAR KHAN TAMURZAI	PADAG	Satisfactory	Yes
120	06843	GBPS PADDAG ROAD	PADAG	Satisfactory	Yes
121	06844	GBMIDS KILLI MOHAMMAD SHARIF	PADAG	Need Repair	Yes
122	09022	GBPS KILLI FAIZ MUHAMMAD	CHILGAZAI	Need Repair	Yes
123	09023	GBPS RAZA SHAH	CHAGAI	Satisfactory	Yes
124	09024	GBPS NOOR SHAH	PADAG	Need Repair	Yes
125	09025	GBPS KHUDA BAKHSH SHERZAI	NOK KUNDI	Dangerous Condition	Yes
126	09026	GBPS KILLI AZAM YAK MACH	CHILGAZAI	Need Repair	Yes
127	09027	GBPS FAISAL COLONY	SADDAR DALBANDIN	Need Repair	No
128	09076	GGHSS PADAGI CHAGAI	CHAGAI	Need Repair	Yes
129	09077	GGHS FAISAL COLONY MASHRAQ	SADDAR DALBANDIN	Satisfactory	Yes
130	09415	GBPS KILLI GHULAM HAIDER	CHAGAI	Need Repair	Yes
131	09416	GBPS KILLI MIR MOHAMMED AZEEM SAR GHASHA	CHILGAZAI	Need Repair	Yes
132	09417	GBPS KILLI SAIF-UD-DIN GAT	AMURI	Need Repair	Yes
133	09418	GBPS MALIK MOHAMMAD SALEEM	CHILGAZAI	Need Repair	Yes
134	09419	GBPS KILLI HAJI DIN MUHAMMAD	CHILGAZAI	Satisfactory	No
135	09420	GBPS KILLI KHALIFA KHAIR JAN	CHILGAZAI	Dangerous Condition	Yes
136	09421	GGMIDS KILLI WAZIR KHAN	DALBANDIN	Need Repair	Yes
137	09422	GBPS FAIZ UL QURAAN HASSANABAD	NOK KUNDI	Need Repair	Yes

S#	Bemis Code	Name of School	UC	Building Condition	Space For New Rooms
138	09423	GBPS KILLI HAZOOR BAKHSH	CHAGAI	Satisfactory	Yes
139	09424	GBHS PIR MOHAMMED SAMALANI	CHAGAI	Dangerous Condition	Yes
140	09637	GGPS KILLI RASOOL BAKHSH NOTANI	SADDAR DALBANDIN	Need Repair	No
141	09640	GGHS KILLI SHER ABAD NOK KUNDI	NOK KUNDI	Satisfactory	Yes
142	09642	GGPS MALIK NOOR BAKHSH	DALBANDIN	Need Repair	Yes
143	09643	GGMIDS KILLI ZOOR ABAD NOK KUNDI	NOK KUNDI	Need Repair	Yes
144	09783	GBPS KOTRAN	DALBANDIN	Need Repair	Yes
145	09784	GBPS HAJI BARAN DUSHTOK	DALBANDIN	Need Repair	Yes
146	09785	GBPS KILLI KHAN JAN NOOLI	CHILGAZAI	Need Repair	Yes
147	09786	GGPS KILLI SAKHI PEER MUHAMMAD	CHAGAI	Need Repair	Yes
148	09788	GGMIDS PAT GUNEKO	CHILGAZAI	Need Repair	Yes
149	09791	GGMIDS MIRZA FAIZULLAH KHAN AMINABAD	CHAGAI	Need Repair	Yes
150	09794	GGMIDS HAJI MUHAMMAD ALI YAK MACH	CHILGAZAI	Need Repair	Yes
151	09800	GGMIDS KILLI QASIM KHAN	SADDAR DALBANDIN	Need Repair	Yes
152	09801	GGMIDS MADRASSA SULTANIA KILLI RASOOL BAKHSH NOTEZAI	DALBANDIN	Satisfactory	Yes
153	09802	GGHS MUHAMMAD RAHIM NOTEZAI	SADDAR DALBANDIN	Need Repair	Yes
154	10149	GGHS DAUD ABAD DAUD	CHILGAZAI	Satisfactory	Yes
155	10435	GGPS MALIK KHUDA BAKHSH KHUSHK NALI	PADAG	Need Repair	Yes
156	10494	GBPS MIR ATTA MUHMMAD PADAG	PADAG	Need Repair	Yes
157	10495	GBPS GUL GAZ SARGESHA	CHILGAZAI	Need Repair	Yes
158	10496	GGPS KILLI NIAZ MUHAMMAD JOJKI	CHILGAZAI	Need Repair	No
159	10673	GGPS KILLI FAQIR DAD DANMO	CHILGAZAI	Dangerous Condition	Yes
160	10674	GGMIDS GHARIB ABAD	SADDAR DALBANDIN	Satisfactory	Yes
161	10675	GGHS JAN MUHAMMAD AMIN ABAD	CHAGAI	Satisfactory	No
162	10677	GGPS KILLI RASOOL BAKHSH LAGHAP	SADDAR DALBANDIN	Need Repair	Yes
163	10678	GGMIDS KOHEE KHAN NOTEZAI	SADDAR DALBANDIN	Need Repair	Yes
164	10679	GGPS NAIK MUHAMMAD NAWAR	CHILGAZAI	Dangerous Condition	No
165	10680	GGMIDS NOK ABAD RAHIM BAKHSH	CHAGAI	Dangerous Condition	Yes
166	10761	GGPS PISHOK	SADDAR DALBANDIN	Satisfactory	Yes

S#	Bemis Code	Name of School	UC	Building Condition	Space For New Rooms
167	10773	GGMIDS TAFTAN	TAFTAN	Satisfactory	No
168	10775	GGPS KILLI TEHSIL NOK KUNDI	NOK KUNDI	Need Repair	Yes
169	10776	GGMIDS KHAN JEHAN SIN	DALBANDIN	Need Repair	Yes
170	10785	GGPS GHARIB ABAD	NOK KUNDI	Need Repair	No
171	10786	GGMIDS ALLAHABAD (NOK KUNDI)	NOK KUNDI	Need Repair	No
172	10788	GGMIDS KILLI CUSTOM NOK KUNDI	NOK KUNDI	Need Repair	Yes
173	10791	GGPS HAJI QULLI CHARSAR	PADAG	Need Repair	No
174	10809	GGPS KILLI BAZAR MASHRAKI	NOK KUNDI	Satisfactory	Yes
175	11014	GGPS KILLI MIR MUHAMMAD AZIM SARGEESHA	CHILGAZAI	Need Repair	No
176	11064	GGHS ZAHOOR COLONY	SADDAR DALBANDIN	Dangerous Condition	Yes
177	11495	GGPS KILLI HAJI NEHAL KHAN DUS	CHAGAI	Dangerous Condition	Yes
178	11500	GGPS SIA JUNGAL	CHILGAZAI	Need Repair	No
179	12133	GGPS SYED KARAM SHAH	CHILGAZAI	Need Repair	No
180	12134	GGPS ABDUL GHANI MIR BORE	SADDAR DALBANDIN	Need Repair	Yes
181	12135	GGPS QADAR BAKHASH	SADDAR DALBANDIN	Need Repair	Yes
182	12136	GGPS NOK CHAH KILLI SULTAN MUHAMMAD	PADAG	Dangerous Condition	Yes
183	12137	GGPS KILLI MUHAMMAD MURAD POSTI KARAIZ	AMURI	Need Repair	Yes
184	12138	GGPS GHULAM NABI CHAHSAR	PADAG	Need Repair	No
185	12139	GGPS HAJI JANO MAZANG	PADAG	Need Repair	Yes
186	12140	GGPS FAIZ MUHAMMAD ISMAIL	CHILGAZAI	Need Repair	No
187	12141	GGPS MADAD KHAN KARODUK	SADDAR DALBANDIN	Satisfactory	Yes
188	12142	GGPS KILLI MOHMMAD AZAMB YAK MACH	CHILGAZAI	Need Repair	Yes
189	12143	GGHSS KILLI AJAB KHAN KANRAK	PADAG	Satisfactory	Yes
190	12144	GGPS KILLI RASOOL BAKHSH PADAG	PADAG	Need Repair	No
191	12145	GGPS KILLI BADAL KHAN	PADAG	Dangerous Condition	Yes
192	12146	GGPS DEEN MUHAMMAD GUL GUZ	CHILGAZAI	Satisfactory	Yes
193	12147	GGMIDS NOOR MUHAMMAD PADAG	PADAG	Dangerous Condition	Yes
194	12149	GGPS MIR MUHAMMAD KHAN SANJRANI AMINABAD	CHAGAI	Dangerous Condition	Yes
195	12390	GGPS KILLI MUSA KHAN DEWANG	NOK KUNDI	Satisfactory	No

S#	Bemis Code	Name of School	UC	Building Condition	Space For New Rooms
196	12391	GGPS SHAHSAWAR KUNAR	CHILGAZAI	Need Repair	Yes
197	12392	GGHS SARGESHA / SAKHI DOST MUHAMMAD	CHILGAZAI	Need Repair	Yes
198	12483	GBPS ABDUL RAZZAQ MORGHI	CHAGAI	Dangerous Condition	Yes
199	12698	GGPS FAISAL COLONY EAST	SADDAR DALBANDIN	Need Repair	Yes
200	12952	GBPS MULLA MUHAMMAD UMAR BOLO	CHILGAZAI	Satisfactory	Yes
201	12953	GGPS KILLI FAYZULLAH SHAH	DALBANDIN	Satisfactory	Yes
202	12954	GBPS KILLI HAJI MUHAMMAD NALAB	DALBANDIN	Need Repair	Yes
203	12955	GBPS HAJI BAHI KHAN	DALBANDIN	Need Repair	Yes
204	12957	GBPS TALAB	TAFTAN	Need Repair	Yes
205	12958	GBPS KILLI ABDUL AZIZ DHEDAR MEROKI	AMURI	Need Repair	Yes
206	12963	GBPS HAJI RAHIM BAKHSH PAZHOI	PADAG	Need Repair	Yes
207	12964	GBPS SHAHBAZ KHAN PETOK	CHAGAI	Need Repair	Yes
208	12966	GBPS KILLI GHRIB KHALQ NOK KUNDI	NOK KUNDI	Need Repair	Yes
209	12967	GBHS SHER ABAD NOK KUNDI	NOK KUNDI	Need Repair	Yes
210	12968	GBMIDS ZAHOOR ABAD NOK KUNDI	NOK KUNDI	Need Repair	Yes
211	12971	GBPS KILLI JUMA KHAN HUMMAY	NOK KUNDI	Need Repair	No
212	12977	GBPS HAJI MOHAMMAD YAHYA	AMURI	NULL	No
213	12978	GBPS NAWAB JAN GIRRUM	AMURI	Dangerous Condition	Yes
214	13344	GBPS KHALIFA MUHAMMAD HAYAT	DALBANDIN	Need Repair	No
215	13345	GBPS KILLI ABDUL REH	AMURI	Satisfactory	Yes
216	13352	GBPS HAJI MOHAMMAD RAFIQUE	PADAG	Need Repair	Yes
217	13354	GBPS KILLI SARDAR ANWAR JAN SANJRANI	AMURI	NULL	No
218	14394	GBMIDS MALIK FATEH MUHAMMAD BADAG	PADAG	Dangerous Condition	Yes
219	14395	GGPS HAROON ABAD WASHAB	TAFTAN	Need Repair	No
220	14573	GBPS HAJI MUHAMMAD MURAD PAT-E-GONAKOO	CHILGAZAI	Need Repair	No
221	14574	GBPS SARDAR MUHAMMAD ALAM SASOLI CHASAR	PADAG	Satisfactory	Yes
222	14575	GBPS KILLI FASEELA KILLI SAIFULLAH	PADAG	Dangerous Condition	Yes
223	14576	GBPS KILLI MUHAMMAD YAQOOB ESSA TAHIR NOK KUNDI	JULLI	Need Repair	Yes
224	14706	GBPS KILLI SALEH MUHAMMAD	CHILGAZAI	NULL	Yes

S#	Bemis Code	Name of School	UC	Building Condition	Space For New Rooms
225	14902	GBPS KILLI HAJI MUHAMMAD	CHAGAI	Need Repair	Yes
226	15048	GBPS KILLI KHASTI SAINDAC	TAFTAN	Satisfactory	Yes
227	15160	GBMIDS K MUHAMMAD WARIS PADAG	PADAG	Need Repair	Yes
228	15161	GBPS K NABI BAKHSH SORGIL	SADDAR DALBANDIN	Need Repair	Yes
229	15162	GBMIDS H MUHAMMAD BILAL BRABC	DALBANDIN	Need Repair	No
230	15350	GBPS WALI CHAGHILLI GUL MUHAMMAD	CHILGAZAI	Need Repair	Yes
231	15351	GBPS KILLI HAJI MUHAMMAD GHOUS ASSA CHAH	NOK KUNDI	Need Repair	No
232	15352	GGPS KILLI MUHAMMAD UMAR GORGEJ, YAK MAC	CHILGAZAI	Need Repair	Yes
233	15353	GBPS KILLI HAMAL KHAN SHERZAI	NOK KUNDI	Need Repair	Yes
234	15354	GGPS HAJI KHUDA BAKHSH SARDAR TAJ MUHAMMAD CHAGHI	CHILGAZAI	NULL	Yes
235	15355	GGPS KILLI MIR ABDUL KHALIQ MUHAMMAD HAS	PADAG	Need Repair	Yes
236	15454	GGPS NOOR MUHAMMAD PATAK	PADAG	Need Repair	No
237	15576	GGPS KILLI HAJI NASRULLAH CHEHTER	DALBANDIN	Need Repair	Yes
238	15577	GGPS KILLI MALIK MUHAMMAD AZAM CHETTER P	DALBANDIN	NULL	Yes
239	15578	GGPS KILLI MALIK DIL MURAD	DALBANDIN	Satisfactory	No
240	15579	GBPS KILLI MENGAL ABAD NOK KUNDI	NOK KUNDI	Satisfactory	Yes
241	15580	GBPS KILLI GHULAM MOYYUD-DIN AMRI	AMURI	Need Repair	No
242	15581	GGPS KILLI MULLA KAMAL MUHAMMAD HASSNI	DALBANDIN	Need Repair	Yes
243	15611	GBMIDS ABDUL RAHIM KHILJI TAFTAN	TAFTAN	Satisfactory	No
244	15631	GBPS MULLA ABDUL AZIZ MASTUNG	CHILGAZAI	Need Repair	Yes
245	15632	GBPS MUHAMMAD YAHYA PADAG	PADAG	Satisfactory	Yes
246	15633	GGPS PANYAM	DALBANDIN	Satisfactory	No
247	15683	GBPS KILLI RASOOL KHAN PADAG	PADAG	Need Repair	Yes
248	15684	GBPS KILLI MUHAMMAD RAFIQUE M. HASANI	AMURI	Satisfactory	No
249	15685	GBPS DUR MUHAMMAD KASAN NOOLI	DALBANDIN	Satisfactory	Yes
250	15686	GGPS KILLI SARDAR MUHAMMAD GUL SOTAG	DALBANDIN	Need Repair	No
251	15962	GBPS KILLI ABDUL GHANI SURGIL DALBANDIN	DALBANDIN	Need Repair	No
252	15963	GBPS KILLI MALIK ROSHAN MUHAMMAD HASANI	DALBANDIN	Need Repair	Yes
253	15964	GGPS KILLI MALIK FATEH MUHAMMAD MASHRAQI PADA	DALBANDIN	Need Repair	No

S#	Bemis Code	Name of School	UC	Building Condition	Space For New Rooms
254	16341	GBPS HAROON NOUTIZAI TAFTAN	NOK KUNDI	Need Repair	No
255	16342	GBPS NABI BAKHSH SONG DALBANDIN	CHILGAZAI	NULL	Yes
256	16664	GBPS KILLI JAMADAR KHAN SASOLI CHARSAR	CHAGAI	Need Repair	Yes
257	16665	GBPS KILLI MUALLA ABDUL AZIZ SOTAG	CHAGAI	Need Repair	Yes
258	16666	GBPS KILLI HAJI MURAD SUMALANI BISHR	CHAGAI	Satisfactory	Yes
259	16667	GBPS KILLI HAJI AKBAR MOHAMMAD HASSANI	CHAGAI	Need Repair	Yes
260	16668	GBPS KILLI ABDUL NABI SHERAZI SHANGARO U/C JOLY	CHAGAI	Need Repair	No
261	16925	GBPS ELAHI BAKHSH DALBANDIN SUSTAINED	DALBANDIN	NULL	No
262	16926	GBPS NOSHARWAN ISMILI DALBANDIN SUSTAINED	DALBANDIN	Need Repair	No
263	16927	GBPS KILLI SULEMAN SORAN DALBANDIN SUSTAINED	DALBANDIN	Need Repair	Yes
264	16928	GBPS KILLI AZIZ MUHAMMAD MUKUPTAUK SUSTAINED	DALBANDIN	Dangerous Condition	Yes
265	16939	GBPS KILLI MALIK USMAN SHERAZI	DALBANDIN	Need Repair	No
266	16940	GBPS KILLI HAJI MURAD MOHAMMAD BISHIRI	DALBANDIN	Need Repair	No
267	16941	GBPS KILLI MEER KKHANJAHAN	DALBANDIN	NULL	Yes
268	16942	GGPS KILLI SARDAR ABDUL RAHIM KHILJI TAFTAN	TAFTAN	Need Repair	No
269	17093	GBPS KILLI HAJI KHUDA-E-NAZAR KUNGAR KANI	DALBANDIN	Satisfactory	No
270	17240	GBPS KILLI WADAN JHULLY	DALBANDIN	Need Repair	No
271	17241	GBPS KILLI MULLAH MUHAMMAD IBRAHIM NOKCHA	DALBANDIN	Need Repair	Yes
272	17242	GGPS HUSSAIN ABAD NOK KUNDI	DALBANDIN	Need Repair	No
273	17243	GBPS KILLI ALI BAKHSH REHKHO PADIG	DALBANDIN	NULL	Yes
274	17244	GBPS KILLI MALIK NOOR AHMED SANJARANI PADIG	DALBANDIN	NULL	Yes
275	17245	GBPS KILLI HAJI ISMAIL TALIB TAFTAN	DALBANDIN	Dangerous Condition	No
276	17246	GBPS HUSSAIN ABAD NOK KUNDI	DALBANDIN	Need Repair	Yes
277	17247	GBPS NEW QADIR ABAD DADAR LANDI DALBANDIN	DALBANDIN	Need Repair	Yes
278	17248	GBPS MALIK MUHAMMAD ALI MUHAMMAD HASSANI	DALBANDIN	Satisfactory	No
279	17249	GGPS KILLI JUMA KHAN QAMBARZAI POSTI	DALBANDIN	Need Repair	No
280	17250	GBPS KILLI WALI MUHAMMAD NOK KUNDI	DALBANDIN	Need Repair	No
281	17251	GBPS MADRASSA GHOUSIA NOK KUNDI	DALBANDIN	NULL	No
282	17252	GGPS KILLI GHULAM MUHAMMAD NODEZAI SARGRESHA	DALBANDIN	Satisfactory	No

S#	Bemis Code	Name of School	UC	Building Condition	Space For New Rooms
283	17253	GGPS HAJRI COLONY DALBANDIN	DALBANDIN	Need Repair	No
284	17400	GPS KILLI MALIK ABDUL SATTAR, CHAGAI	CHAGAI	Dangerous Condition	Yes
285	17401	GPS KILLI NAIK MUHAMMAD, KARAIZ	CHILGHAZZI	Satisfactory	Yes
286	17402	GPS KILLI HAJI QADIR BAKHSH, TALAAB	TAFTAN	Need Repair	Yes
287	17403	GPS KILLI RASOOL BAKSH, MIR KAN CHAH	AMURI	Need Repair	Yes
288	17404	GPS KHUDA MURAD COLONY, DALBANDIN	SADDAR	Satisfactory	Yes
289	17405	GPS KILLI MALIK ABDUL AZIZ CHAHOOK	AAMURI	Satisfactory	Yes
290	17406	GPS KILLI ABDUL RAHMAN, DAAR-CHEDHAG, DALBANDIN	SADDAR	Satisfactory	Yes
291	17407	GPS KILLI ABDUL KAREEM, LOOS	SADDAR	Satisfactory	Yes
292	17408	GPS KILLI KHUDA-E-DAAD, CHAGAI	CHAGAI	Need Repair	Yes
293	17409	GPS KILLI IMAM BAKHSH, SARGESHA	CHILGHAZZI	Satisfactory	Yes
294	17410	GPS KILLI SAYYAD MUHAMMAD, SALONK, JHULLY	JHULLY	Need Repair	Yes
295	17411	GPS KILLI MUHAMMAD IBRAHIM, SARGESHA	CHILGHAZZI	Satisfactory	Yes
296	17412	GPS KILLI HABIB ULLAH, SORAN	CHILGHAZZI	Need Repair	Yes
297	17413	GPS MUHAMMAD TAHIR	AAMURI	Dangerous Condition	Yes
298	17414	GGMIDS KILLI KAREEM ABAD, WADD, DALBANDIN	CHILGHAZZI	Satisfactory	Yes
299	17415	GPS KILLI ABDUL ZAHIR, NOOLI	CHILGHAZZI	Need Repair	Yes
300	17416	GPS KILLI PEERAKZAI, CHAGAI	CHAGAI	Need Repair	Yes
301	17417	GPS KILLI NOOR ALLAH, KAANI	CHILGHAZZI	Need Repair	Yes
302	17418	GPS KILLI UMAITH KHAN, SHADI SHEF, CHAGAI	CHAGAI	Need Repair	Yes
303	17419	GPS KILLI MALIK MUHAMMAD AMIN, KAURAI, JHULLY	JHULLY	Need Repair	Yes
304	17420	GPS KILLI USMAN SHERZAI, SHAH-E-DEWANAG	JHULLY	Need Repair	Yes
305	17421	GPS KILLI HAJI ZAKRIA KHAN MUHAMMAD HASSANI, AMIN ABAD	CHAGAI	Need Repair	Yes
306	17422	GPS KILLI MALIK SHAH HUSSAIN, LASHKAR AAP	CHAGAI	Need Repair	Yes
307	17423	GPS KILLI DOST ABAD, CHAGAI	CHAGAI	Dangerous Condition	Yes
308	17424	GPS KILLI MUHAMMAD ISMAIL, GAPADH	CHILGHAZZI	Satisfactory	Yes
309	17425	GPS KILLI GHULAM SARWAR, AMIN ABAD	CHAGAI	Satisfactory	Yes
310	18070	GBPS KILLI RAJE	CHAGHI	NULL	Yes
311	18071	GBPS KILLI NEK MUHAMMAD SUMALANI CHAGHI	DALBANDIN	NULL	Yes

S#	Bemis Code	Name of School	UC	Building Condition	Space For New Rooms
312	18072	GBPS KILLI MALIK PASUND KHAN GHAT BARUT	DALBANDIN	NULL	No
313	18073	GBPS KILLI HAJI MUHAMMAD ASHRAF CHARA BAN	DALBANDIN	NULL	No
314	18074	GBPS KILLI HAJI JALAL KHAN NOTEZAI SHAH JURED HOOKEY	DALBANDIN	NULL	No
315	18075	GBPS KILLI BAZAR BRABCHA	DALBANDIN	NULL	No
316	18197	GGPS HAJI NAUROZ KHAN	CHAGHI	NULL	No
317	18198	GBPS KILLI ABDUL SAMAD U/C ZARAT BALANOSH	ZARAT BALANOSH	NULL	Yes

Annex-HA

Table 32: Catchment Area Population by Health Facility

S.No.	Facility Name	Union Council	Facility Type	Catchment Area Population
1	RHC Gowanakko	Dalbandin Town	RHC	7800
2	DHQ Hospital Prince Fahad Dalbindin	Dalbandin Town	DHQ	135514
3	MCH Dalbandin	Dalbandin Town	MCH	3500
4	CD Mir khanchah	Amori	CD	3047
5	BHU Chaye Marak	Amori	BHU	2852
6	BHU Johar Karez	Amori	BHU	4487
7	BHU Baslani	Brab Chah	BHU	3883
8	BHU Posti	Brab Chah	BHU	5658
9	BHU Patkok	Brab Chah	BHU	4637
10	CD Haji Muhammad Anwer (Brab Chah)	Brab Chah	CD	7500
11	BHU Saleh Karez	Brab Chah	BHU	2503
12	BHU Kani	Chilghazi	BHU	4092
13	BHU Sargesha	Chilghazi	BHU	9236
14	CD Kuchakki	Chilghazi	CD	2500
15	BHU Kargoshkan	Chilghazi	BHU	2201
16	BHU Baso Karez	441001005--Chilghazi	BHU	2591
17	BHU Yakmach	Pate Gawnako	BHU	4483
18	BHU Padag	Padag	BHU	10324
19	RHC Chiater	Padag	RHC	12500

S.No.	Facility Name	Union Council	Facility Type	Catchment Area Population
20	BHU Charser	Padag	BHU	7361
21	CD Charser Dilmurad	Padał	CD	3500
22	CD kunarak	Kunarak	CD	2680
23	BHU Mazang	Padag	BHU	3351
24	BHU Nawar	Saddar Dalbandin	BHU	2299
25	BHU Daramin	Ziarat Balanosh	BHU	3461
	Tehsil: 441002 -- Nok Kundi			
26	CD Amurii	Amori	CD	3000
27	MCH Nok Kundi	Nok Kundi	MCH	3200
28	THQ Hospital Nok Kundi	Nok Kundi	THQ	26821
29	BHU Kirtaka	Julli	BHU	7194
30	BHU Raje	Julli	BHU	6367
31	CD julie	Julli	CD	3419
	Tehsil: 441003 -- Chagai			
32	CD Talaab	--	CD	2500
33	RHC Amin Abad	Chagai	RHC	14283
34	RHC Chagai Village	Chagai	RHC	29433
35	MCH chagai	Chagai	MCH	3500
36	CD Lashker Ab	Ziarat Bala Nosh	CD	7315
37	BHU Ali Baig	Aminabad	BHU	4672
	Tehsil: 441004 -- Taftan			
38	BHU Taftan	Taftan	BHU	19645
39	CD kuchaow	Taftan	CD	3632
40	MCH Taftan	Taftan	MCH	3600

Source: Health Directorate of Health Department, Balochistan

Annex-HB

Table 33: Staffing Status (Filled / Vacant) by Health Facility, District Chagai

Name of Health Facility	Name of Post	BPS	Sanctioned Strength	Filled	Vacant
DHO Office	District Health Officer	B-19	1	1	0
	Chief Lady Medical	B-19	1	0	1
	Chief Medical Officer	B-19	4	0	4
	Deputy District Health	B-18	1	1	0
	Senior Medical Officer	B-18	10	0	10
	Senior Lady Medical	B-18	1	0	1
	Senior Dental Surgeon	B-18	1	0	1
	Drug Inspector	B-17	1	0	1
	Dental Surgeon	B-17	1	0	1
	Lady Medical Officer	B-17	2	0	2
	Medical Officer	B-17	15	1	14
	Pharmacist	B-17	5	5	0
	Superintendent	B-17	1	0	1
	Surveillance Officer	B-17	1	0	1
	Assistant	B-16	2	0	2
	Malaria Superintendent	B-16	2	0	2
	Statistician	B-16	1	0	1
	Accounts Assistant	B-14	1	1	0
	Senior Clerk	B-14	1	1	0
	Junior Clerk	B-11	2	1	1
	Statistician Assistant	B-11	1	0	1
	Data Entry Operator	B-9	1	0	1
	Assistant Malaria Superintendent	B-8	1	0	1
	Accounts Supervisor	B-7	1	1	0
	Lady Health Supervisor	B-7	4	4	0
	Lady Health Worker	B-5	106	102	4
	Malaria Supervisor	B-5	5	5	0

Name of Health Facility	Name of Post	BPS	Sanctioned Strength	Filled	Vacant
	Driver	B-4	1	1	0
	Chowkidar	B-1	3	3	0
	Naib Qasid	B-1	3	3	0
	Sweeper	B-1	1	1	0
Expended Program on immunization	Deputy District Health Officer	B-18	1	1	0
	Monitoring & Evaluation Officer	B-17	1	1	0
	District Superintendent Vaccination	B-14	1	1	0
	Assistant Superintendent Vaccinator	B-9	1	0	1
	Vaccinator	B-5	29	29	0
	Driver	B-4	1	1	0
	Naib Qasid	B-1	1	1	0
	Assistant Superintendent Vaccination (Contract)		2	0	2
	Vaccinator (Contract)		10	0	10
RHC Chagai	Pharmacist	17	1	1	0
	Dental Technician	B-9	1	1	0
	Medical Technician	9	1	1	0
	Female Medical Technician	9	1	1	0
	X.Ray .Asstt:	9	1	1	0
	Dental Technician	9	1	1	0
	Dispenser/Compounder	6	2	2	0
	OT Assistant	6	1	1	0
	Lab Assistant	5	1	1	0
	Malaria Supervisor	5	1	1	0
	Driver	4	2	2	0
	Nursing Orderly	4	2	2	0
	Ward Boy	2	1	1	0
	Bishti	1	1	1	0
	Sweeper	1	1	1	0
	Medical Technician	9	1	1	0

Name of Health Facility	Name of Post	BPS	Sanctioned Strength	Filled	Vacant
RHC Pat-e-Gonakoh	Female Medical Technician	9	1	1	0
	X-Ray Assistant	9	1	1	0
	OT Assistant	6	1	1	0
	Lab Assistant	5	1	1	0
	Dispenser/Compunder	6	1	1	0
	Dresser	6	1	1	0
	Nursing Orderly	4	1	1	0
	Ward Bay	2	1	1	0
	Chowkidar	2	1	1	0
	Dai	2	1	1	0
	Aya	2	1	1	0
	Bishti	1	1	1	0
RHC Nok Kundi	General Surgeon	18	1	0	1
	Anesthetist	18	1	0	1
	Male Nurse	16	1	0	1
	Pharmacist	17	1	1	0
	Female Medical Technician	9	1	1	0
	Medical Technician	9	2	1	1
	X.Ray Assistant	9	1	1	0
	Dispenser/Compunder	6	2	2	0
	Dresser	6	1	1	0
	OT Assistant	6	1	1	0
	Lab Assistant	5	1	1	0
	Malaria Supervisor	5	1	1	0
	Nursing Orderly	4	1	1	0
	Driver	4	2	2	0
	Ward Boy	2	1	1	0
	Dai	2	1	1	0
	Sanetary Petrol	1	1	1	0

Name of Health Facility	Name of Post	BPS	Sanctioned Strength	Filled	Vacant
	Cook	1	1	1	0
	Mali	1	1	1	0
	Bishti	1	1	1	0
	Sweeper Male	1	2	2	0
Rural Health Centre Chiater	Chief Medical Officer	19	1	0	1
	Anesthetist	18	1	0	1
	Gynaecilogist	18	1	0	1
	Physician	18	1	0	1
	Senior Medical Officer	17	1	0	1
	Senior Lady Medical Officer	17	1	0	1
	Dental Surgeon	17	1	0	1
	Medical Officer	17	1	0	1
	Lady Medical Officer	17	1	0	1
	Pharmacist	17	1	0	1
	Male Nurse	16	1	0	1
	Dental Technician	9	1	0	1
	Medical Technician	9	2	2	0
	Female Medical Technician	9	1	0	1
	Laboratory Technician	9	1	0	1
	OT Technician	9	1	0	1
	X-Ray Assistant	9	1	1	0
	Driver	4	2	2	0
	Nursing Orderly	4	1	1	0
	Ward Boy	2	1	1	0
	Chowkidar	1	1	1	0
	Dai	2	1	1	0
	Sweeper	1	1	1	0
RHC Amin Abad	Anesthetist	18	1	0	1
	Gynaecilogist	18	1	0	1

Name of Health Facility	Name of Post	BPS	Sanctioned Strength	Filled	Vacant
	Physician	18	1	0	1
	Dental Surgeon	17	1	0	1
	Medical Officer	17	1	0	1
	Lady Medical Officer	17	1	0	1
	Pharmacist	17	1	1	0
	Dental Technician	9	1	0	1
	Medical Technician	9	1	0	1
	Female Medical Technician	9	1	0	1
	Dispenser/Compunder	6	1	1	0
	Nursing Orderly	4	1	1	0
	Ward Boy	4	1	1	0
	Dai	2	1	1	0
	Chowkidar	1	1	1	0
	Sweeper	1	1	1	0
BHU Padag	Dispenser/Compunder	6	1	1	0
	FMT/LHV	9	1	0	1
	Nursing Orderly	4	1	0	1
	Dai	2	1	1	0
BHU Charser	Medical Technician	6	1	1	0
	FMT/LHV	9	1	0	1
	Dispenser/Compunder	6	1	1	0
	Nursing Orderly	4	1	1	0
	Dai	2	1	0	1
	Chowkidar	1	2	1	1
	Female Sweeper	1	1	0	1
BHU Sergesha	Medical Technician	9	1	1	0
	FMT/LHV	9	1	1	0
	Nursing Orderly	4	1	1	0
	Dai	2	1	0	1

Name of Health Facility	Name of Post	BPS	Sanctioned Strength	Filled	Vacant
	Chowkidar	1	1	0	1
	Sweeper	1	1	0	1
Basic Health Unit Kani	Medical Technician	9	1	1	0
	FMT/LHV	9	1	1	0
	Nursing Orderly	4	1	1	0
	Dai	2	1	1	0
	Chowkidar	1	1	1	0
	Sweeper	1	1	0	1
Basic Health Unit Baslani	Medical Technician	9	1	1	0
	FMT/LHV	9	1	1	0
	Nursing Orderly	4	1	1	0
	Dai	2	1	1	0
	Chowkidar	1	1	1	0
	Sweeper	1	1	1	0
Basic Health Unit Posti	Medical Technician	9	1	1	0
	FMT/LHV	9	1	1	0
	Nursing Orderly	4	1	1	0
	Dai	2	1	0	1
	Chowkidar	1	1	0	1
	Sweeper	1	1	0	1
Basic Health Unit Yakmach	Medical Technician	9	1	1	0
	Female Medical Technician	9	1	1	0
	Dispenser/Compunder	6	1	1	0
	Nursing Orderly	4	1	0	1
	Dai/Aya	2	1	0	1
	PTS	1	1	1	0
Basic Health Unit Taftan	Medical Technician	9	1	1	0
	FMT/LHV	9	1	1	0
	Dispenser/Compunder	6	1	1	0

Name of Health Facility	Name of Post	BPS	Sanctioned Strength	Filled	Vacant
	Nursing Orderly	4	1	1	0
	Driver	4	1	1	0
	Dai	2	1	1	0
	Chowkidar	1	1	1	0
	Sweeper	1	1	1	0
Basic Health Unit Kirtaka	Medical Technician	9	1	1	0
	FMT/LHV	9	1	0	1
	Nursing Orderly	4	1	1	0
	Chowkidar	2	1	0	1
	Dai	2	1	0	1
	Sweeper	1	1	0	1
Basic Health Unit Rajey	Medical Technician	9	1	1	0
	FMT/LHV	9	1	0	1
	Nursing Orderly	4	1	0	1
	Dai	2	1	0	1
	Chowkidar	1	1	0	1
	Sweeper	1	1	1	0
Basic Health Unit Pat Kuk	LHV/FMT	9	1	0	1
	Dai	2	1	0	1
	Chowkidar	1	1	0	1
	Sweeper Female	1	1	0	1
Basic Heath Unit Dramin	Lady Health Visitor	9	1	1	0
	Medical technician	9	1	1	0
	Chowkidar	1	1	0	1
Basic Health Unit Nawar	Lady Health Visitor	9	1	0	1
	Medical technician	9	1	1	0
	Chowkidar	1	1	0	1
Basic Health Unit Kargoshan	Lady Health Visitor	9	1	1	0
	Medical Technician	9	1	1	0

Name of Health Facility	Name of Post	BPS	Sanctioned Strength	Filled	Vacant
	Chowkidar	1	1	0	1
Basic Health Unit Killi Chairman Ali Beig	Lady Medial Officer	17	1	0	1
	Lady Health Visitor	9	1	0	1
	Medical technician	9	1	0	1
	Chowkidar	1	1	0	1
BHU Chah Marak	Lady Medial Officer	17	1	0	1
	Lady Medial Officer	9	1	0	1
	Chowkidar	1	1	0	1
BHU Amuri	Lady Medial Officer	17	1	0	1
	Lady Medial Officer	9	1	0	1
	Chowkidar	1	1	0	1
BHU Baso Karez	Lady Medial Officer	17	1	0	1
	Lady Medial Officer	9	1	0	1
	Medical Technician	9	1	0	1
	Chowkidar	1	1	0	1
BHU Mazang	Lady Medial Officer	17	1	0	1
	Lady Medial Officer	9	1	0	1
	Medical Technician	9	1	0	1
	Chowkidar	1	1	0	1
BHU Saleh Karez	Lady Medial Officer	17	1	0	1
	Lady Medial Officer	9	1	0	1
	Medical Technician	9	1	0	1
	Chowkidar	1	1	0	1
MCH Centre Chagai Village	Lady Health Visitor	9	1	1	0
	Dai	2	1	1	0
	Naib Qasid	1	1	1	0
MCH Centre Dalbandin	Lady Health Visitor	9	1	1	0
	Dai	2	1	1	0
	Naib Qasid	1	1	1	0

Name of Health Facility	Name of Post	BPS	Sanctioned Strength	Filled	Vacant
	Chowkidar	1	1	1	0
	Female Sweeper	1	1	1	0
MCH Centre Nok Kundi	Lady Health Visitor	9	1	1	0
	Dai	2	1	1	0
MCH Centre Taftan	Lady Health Visitor	9	1	1	0
	Dai	2	1	1	0
	Sweeper	1	1	1	0
	Chowkidar	1	1	1	0
Civil Dispensary, Amari	Dispenser/Compunder	6	1	1	0
	Nursing Orderly	4	1	1	0
	Dai	2	1	1	0
	Chowkidar	1	1	1	0
C D Killi Nadir Khan Kuchaki Chah	Dispenser/Compunder	6	1	1	0
	Nursing Orderly	4	1	1	0
	Dai	2	1	1	0
Civil Dispensary, Kunrak	Dispenser/Compunder	6	1	1	0
	Nursing Orderly	4	1	0	1
	Dai	2	1	1	0
	Chowkidar	1	1	1	0
Civil Dispensary Killi Dil Murad Charsar	Dispenser/Compunder	6	1	1	0
	Nursing Orderly	4	1	1	0
	Dai	2	1	1	0
Civil Dispensary Lashkar Aab	Dispenser/Compunder	6	1	1	0
	Nursing Orderly	4	1	1	0
	Dai	2	1	1	0
CD, Gat Afzal Mir Khan Chah	Dispenser/Compunder	6	1	1	0
	Dai	2	1	1	0
	Chowkidar	1	1	1	0
	Dispenser/Compunder	6	1	1	0

Name of Health Facility	Name of Post	BPS	Sanctioned Strength	Filled	Vacant
C.D BRAB CHAH	Dai	2	1	1	0
	Chowkidar	1	1	1	0
CD, Talab/Malik Khuda-i-Nazar	Dispenser/Compunder	6	1	1	0
	Dai	2	1	1	0
	Chowkidar	1	1	1	0
Civil Dispensary Julli	Dispenser/Compunder	6	1	1	0
	Nursing orderly	4	1	1	0
	Dai	2	1	1	0
	Chowkidar	1	1	1	0
Civil Dispensary Kachow	Dispenser/Compunder	6	1	1	0
	Nursing Orderly	4	1	1	0
	Dai	2	1	1	0
	Chowkidar	1	1	1	0

Source: Health Directorate of Health Department, Balochistan (Mar 2025)

Annex-HD

Table 34: List of Machinery / Equipment, Prince Fahad Hospital, Dalbandin

S#	Name of Item	Qty	Remarks
1	OT Table	1	Functional
2	OT Light	1	Functional
3	Anesthesia Machine	1	Functional
4	Auto Clave	5	Functional
5	Diathermy	1	Functional
6	Suction Machine	2	Functional
7	C-Section Set	1	Functional
8	Appendectomy Set	3	Functional
9	Oxygen Cylinder	5	Functional
10	CBC Machine	1	Functional
11	X-Ray Machine	1	Functional

S#	Name of Item	Qty	Remarks
12	Micro lab	1	Functional
13	Gen Expert	1	Functional
14	Centrifuge Machine	1	Functional
15	Microscope	2	Functional
16	Dental Chair	1	Functional
17	Dialysis Machine	6	Functional
18	Baby incubator	3	Functional
19	Ultrasound Machine	1	Functional
20	ECG Machine	1	Functional
21	Ventilator	1	Not installed yet
22	Central Oxygen	1	Not installed yet
23	Delivery Table	2	Functional
24	Examination Couch	4	Functional
25	Wheel Chair	2	Functional
26	Stretcher	5	Functional
27	Weight Machine	2	Functional
28	BP Operates	5	Functional
29	Stethoscope	5	Functional
30	Glucometer	2	Functional
31	HB Meeter	2	Functional
32	Monitor	1	Functional
33	Nebulizer Machine	2	Functional
34	Examination Light	1	Functional
35	Stand by Generator	2	Functional

Source: Health Directorate of Health Department, Balochistan (Mar 2025)

Annex-HE

Table 35: Essential Drug List for Primary Health Care

Sr. #	Generic Drug Name	MCH	CD	BHU	RHC
	(1) Anaesthetic Local				
1	Lidocaine	✗	✓	✓	✓
2	Lignocain + epinephrine (adrenaline)	✗	✗	✗	✓
	(2) ANALGESIC / NON-STERIODAL ANTI-INFLAMATORY MEDICINES (NSAIMs)				
3	acetylsalicylic acid (dispersible)	✓	✓	✓	✓
4	diclofenac (sodium)	✗	✓	✓	✓
5	ibuprofen	✗	✓	✓	✓
6	mefenamic acid	✓	✓	✓	✓
7	paracetamol	✓	✓	✓	✓
8	tramadol	✗	✗	✗	✓
	(3) ANTIALLERGICS and MEDICINES USED IN ANAPHYLAXIS				
9	chlorpheniramine (hydrogen maleate)	✗	✓	✓	✓
10	dexamethasone (disodium phosphate)	✗	✓	✓	✓
11	epinephrine (adrenaline)	✗	✗	✓	✓
12	hydrocortisone (sodium succinate)	✗	✗	✓	✓
13	loratadine	✗	✓	✓	✓
14	prednisolone	✗	✗	✗	✓
	(4) ANTIDOTES AND OTHER SUBSTANCES USED IN POISONING				
15	atropine (sulphate)	✗	✗	✓	✓
16	charcoal activated	✗	✗	✓	✓
17	diazepam	✗	✗	✓	✓
18	naloxone (hydrochloride)	✗	✗	✓	✓
	(5) ANTI-CONVULSANTS / ANTI-EPILEPTICS				
19	carbamazepine	✗	✗	✓	✓
20	magnesium sulphate (For eclampsia only)	✓	✗	✓	✓
21	phenobarbital (sodium)	✗	✓	✓	✓
22	albendazole	✗	✓	✓	✓

Sr. #	Generic Drug Name	MCH	CD	BHU	RHC
23	mebendazole (chewable)	✓	✓	✓	✓
	(7) ANTI-FUNGAL MEDICINES				
24	clotrimazole	✗	✓	✓	✓
25	nystatin	✗	✓	✓	✓
	(8) ANTIBIOTICS / ANTIMIC&OBIALS				
	GROUP I - KEY ACCESS ANTIBIOTICS				
26	amoxicillin (trihydrate) (preferably dispersible tablets)	✓	✓	✓	✓
27	amoxicillin + clavulanic acid	✗	✓	✓	✓
28	ampicillin (sodium)	✗	✗	✓	✓
29	benzyl penicillin (sodium)	✗	✗	✗	✓
30	Cotrimoxazole (sulfamethoxazole + trimethoprim)	✗	✓	✓	✓
31	doxycycline	✗	✓	✓	✓
32	erythromycin	✗	✓	✓	✓
33	gentamicin (sulphate)	✗	✗	✗	✓
34	metronidazole (benzoate)	✓	✓	✓	✓
	GROUP 2 - WATCH GROUP ANTIBIOTICS				
35	azithromycin	✗	✗	✓	✓
36	clarithromycin	✗	✗	✗	✓
37	cefixime (trihydrate)	✗	✗	✗	✓
38	ciprofloxacin (hydrochloride)	✗	✓	✓	✓
	(9) ANTI-TUBE&CULOSIS MEDICINES (As per TB Control Program guidelines)				
39	streptomycin	✗	✗	✗	✓
40	rifampicin + isoniazid (RH)	✗	✗	✗	✓
41	rifampicin + isoniazid + pyrazinamide (RHZ)	✗	✗	✗	✓
42	rifampicin + isoniazid + pyrazinamide + ethambutol (RHZE)	✗	✗	✗	✓
43	rifampicin + isoniazid + ethambutol (RHE)	✗	✗	✗	✓
	(I0) ANTI-DIABETIC MEDICINES				
44	glibenclamide	✗	✓	✓	✓
45	insulin regular	✗	✗	✗	✓

Sr. #	Generic Drug Name	MCH	CD	BHU	RHC
46	insulin comp	✗	✗	✗	✓
47	metformin (hydrochloride)	✗	✗	✗	✓
	(II) ANTI-MALARIAL MEDICINES				
48	artesunate plus sulfadoxine and pyrimethamine to be used in combination (co blister)	✗	✓	✓	✓
49	artesunate (management if severe malaria)	✗	✗	✗	✓
50	artesunate	✗	✓	✓	✓
51	chloroquine (phosphate or sulphate)	✗	✓	✓	✓
52	primaquine (diphosphate) (For Vi'vax)	✗	✗	✗	✓
53	sulfadoxine + pyrimethamine co-blister / combined therapy (For Falciparum)	✗	✓	✓	✓
	(12) MEDICINES ACTING ON GASTROINTESTINAL TRACT				
54	aluminium hydroxide + magnesium trisilicate	✗	✓	✓	✓
55	aluminium hydroxide + magnesium hydroxides	✗	✓	✓	✓
56	bisacodyl	✗	✗	✓	✓
57	dimenhydrenate	✗	✗	✓	✓
58	glycerin	✗	✓	✓	✓
59	omeprazole	✗	✓	✓	✓
60	ORS (low osmolarity) Recommended in combination wiht Zinc Sulphate 20 mg dispersible tablet in case of acute diarrhea	✗	✓	✓	✓
61	phloroglucinol	✗	✓	✓	✓
62	famotidine	✗	✓	✓	✓
	(I3) CARDIOVASCULAR MEDICINES				
63	enalapril (maleate)	✗	✗	✗	✓
64	furosemide	✗	✓	✓	✓
65	glyceryl trinitrate	✗	✗	✓	✓
66	hydrochlorothiazide	✗	✗	✗	✓
67	isosorbide dinitrate	✗	✗	✓	✓

Sr. #	Generic Drug Name	MCH	CD	BHU	RHC
68	methyldopa (for severe PU only}	✗	✓	✓	✓
69	propranolol	✗	✗	✓	✓
	(I4) OXYTOCIC & ANTIOXYTOCIC MEDICINES				
70	misoprostol	✓	✗	✓	✓
71	oxytocin	✓	✗	✓	✓
72	nifedipine	✗	✗	✓	✓
	(I5) MEDICINES ACTING ON RESPIRATORY TRACT				
73	aminophylline	✗	✗	✗	✓
74	ammonium chloride + chlorpheniramine + menthol + diphenhydramine + sodium citrate	✗	✓	✓	✓
75	salbutamol (sulphate) / albuterol	✗	✓	✓	✓
	(I6) OPHTHALMIC / ENT MEDICINES				
76	boroglycerine	✗	✓	✓	✓
77	tobramycin	✗	✗	✓	✓
78	polymyxin B sulphate + lignocaine	✗	✓	✓	✓
79	polymyxin B sulphate	✗	✓	✓	✓
	(I7) I/V INFUSIONS / PLASMASUBSTITUTES				
80	dextrose + saline	✓	✓	✓	✓
81	glucose + dexrose	✗	✓	✓	✓
82	normal saline	✗	✗	✓	✓
83	plasma expander / substitute	✗	✗	✗	✓
84	ringer's lactate (sodium lactate compound solution)	✓	✓	✓	✓
85	sodium bacarbonate	✗	✗	✓	✓
86	water for injection	✗	✓	✓	✓
	(18) VITAMINS & MINERALS				
87	ascorbic acid	✗	✓	✓	✓
88	B complex (BI, B6 and B12)	✗	✓	✓	✓
89	calcium gluconate	✗	✗	✗	✓

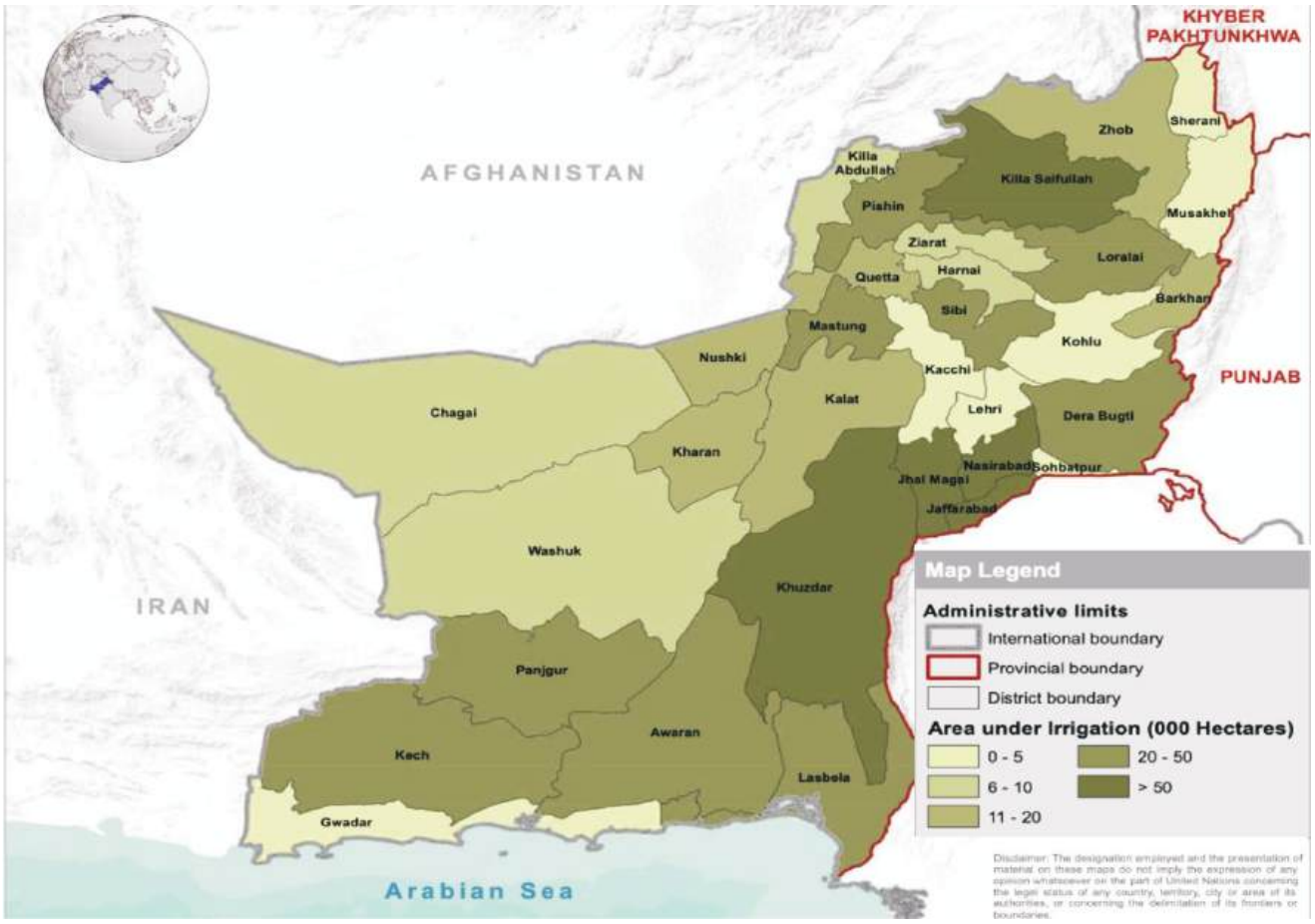
Sr. #	Generic Drug Name	MCH	CD	BHU	RHC
90	calcium lactate	✗	✗	✗	✓
91	cholecalciferol (vitamin D3)	✗	✗	✗	✓
92	ferrous salt (fumarate)	✗	✗	✗	✓
93	folic acid	✓	✓	✓	✓
94	ferrous salt + folic acid (Nutritional supplement for use during pregnency)	✓	✓	✓	✓
95	multiple micronutrients	✓	✓	✓	✓
96	retinol (vitamin A)	✓	✓	✓	✓
97	zinc sulphate (for acute diarrhea with ORS)	✗	✓	✓	✓
98	vitamin K (phytonadion)	✗	✗	✓	✓
	(19) MISCELLANEOUS MEDICINES				
99	oxygen (medicinal gas) cylinder	✗	✓	✓	✓
100	tranexamic acid	✗	✗	✗	✓
	(20) DERMATOLOGICAL MEDICINES				
101	benzyl benzoate	✗	✓	✓	✓
102	calamine	✗	✓	✓	✓
103	hydrocortisone	✗	✓	✓	✓
104	fucidic acid	✗	✗	✓	✓
105	permethrin	✗	✗	✓	✓
106	polymycin B (sulphate) + bacitracin zinc	✗	✓	✓	✓
107	silver sulphadiazine	✗	✓	✓	✓
	(21) CONTRACEPTIVES				
108	condoms	✓	✓	✓	✓
109	copper T / multiload	✓	✗	✓	✓
110	DMPA (medroxyprogesterone acetate)	✓	✗	✓	✓
111	ethinyloestradiol + norethisterone	✓	✓	✓	✓
112	estradiol valerate + norethisterone	✓	✗	✓	✓
113	levonorgestrel	✓	✗	✓	✓

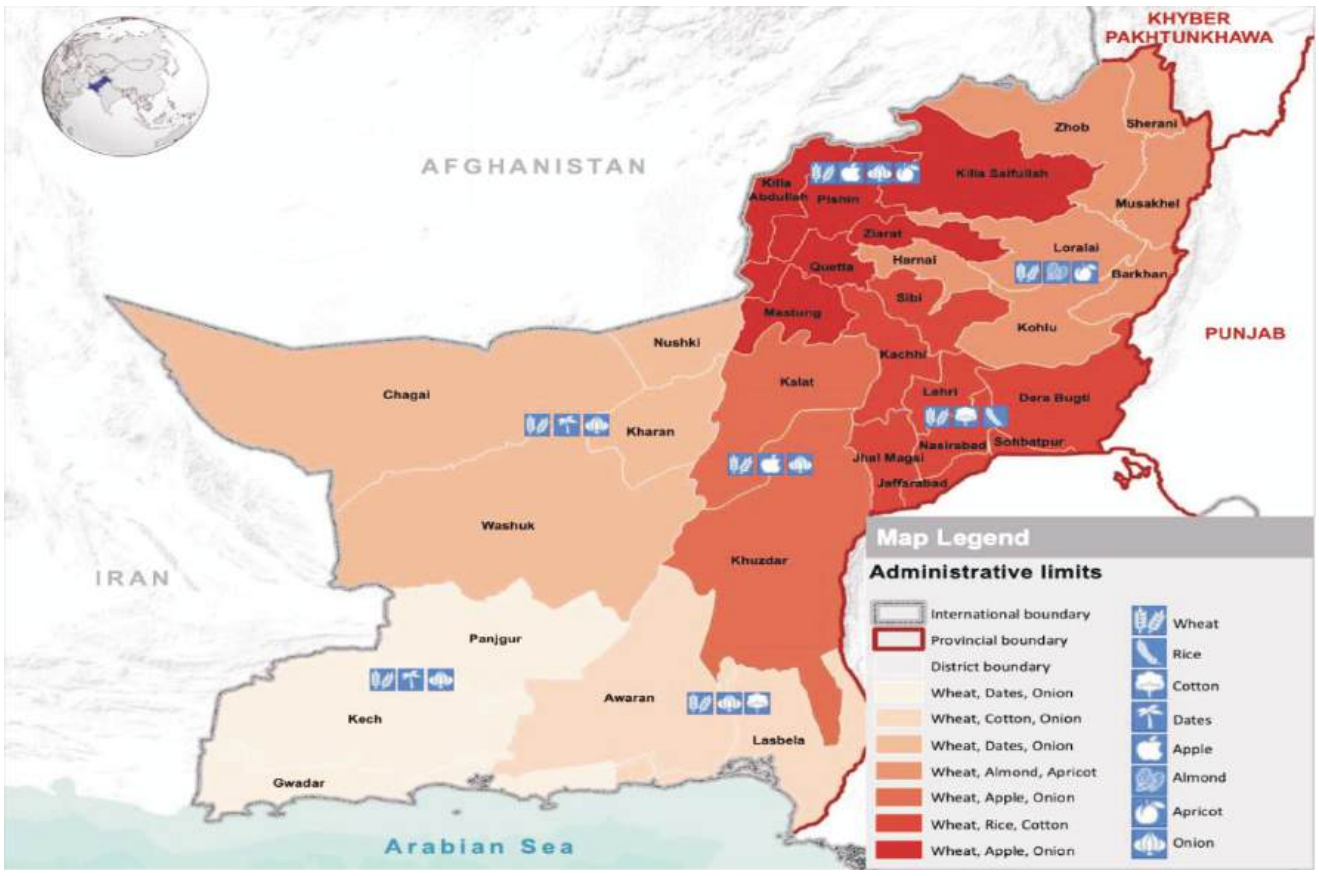
Sr. #	Generic Drug Name	MCH	CD	BHU	RHC
114	levonorgestrel	✓	✓	✓	✓
115	norethisterone	✓	✗	✗	✓
	(22) VACCINES & SERA (WHO Approved/As perNational EPI Program)				
116	anti-rabies vaccine (PVRV)	✗	✗	✗	✓
117	anti-snake venom serum	✗	✗	✗	✓
118	BCG vaccine	✗	✗	✓	✓
119	hepatitis B vaccine	✗	✗	✓	✓
120	measles vaccine	✗	✗	✓	✓
121	pentavalent vaccine	✗	✗	✓	✓
122	polio vaccine (OPV trivalent) / IPV	✗	✗	✓	✓
123	pentavalent vaccine	✗	✗	✓	✓
124	rotavirus vaccine	✗	✗	✓	✓
125	tetanus toxoid	✗	✗	✓	✓
	(23) ANXIOLYTIC MEDICINES				
126	alprazolam	✗	✗	✓	✓
127	diazepam	✗	✗	✗	✓
	(24) ANTI-SEPTICS / DISINFECTANTS				
128	chlorhexidine digluconate (7.I %) Anciseptic for Cord Care)	✓	✓	✓	✓
129	chlorhexidine + ceterimide	✗	✓	✓	✓
130	chlorine base compound	✓	✓	✓	✓
131	chloroxylenol	✗	✓	✓	✓
132	methylated spirit	✗	✓	✓	✓
133	povidone-iodine	✓	✓	✓	✓
	(25) DISPOSABLE SUPPLIES				
134	airway	✗	✗	✗	✓
135	absorbent cotton wool	✓	✓	✓	✓
136	adhesive tape (hypoallergenic)	✓	✓	✓	✓
137	blood lancets	✗	✗	✗	✓
138	cotton bandage	✓	✓	✓	✓

Sr. #	Generic Drug Name	MCH	CD	BHU	RHC
139	chromic catgut sterile	✗	✗	✗	✓
140	crepe bandage	✗	✓	✓	✓
141	examination gloves	✓	✓	✓	✓
142	face masks disposable	✓	✓	✓	✓
143	Foley's catheter	✓	✓	✓	✓
144	I.V sets	✓	✓	✓	✓
145	I.V cannula	✓	✓	✓	✓
146	nasogastric tube (NG)	✗	✗	✗	✓
147	polypropylene sterile sutures +needle	✗	✗	✗	✓
148	resuscitator bag with mask	✓	✗	✓	✓
149	scalp vein set (DRAP approved)	✗	✗	✓	✓
150	silk sutures sterile with cutting needle	✗	✗	✓	✓
151	slides glass	✗	✗	✗	✓
152	sterile gauze dressing	✗	✓	✓	✓
153	sterile surgical gloves	✓	✗	✓	✓
154	surgical blades (carbon steel)	✗	✗	✓	✓
155	syringe (auto disable)	✓	✓	✓	✓
156	urine bags	✗	✗	✗	✓
157	volumetric chamber (i.v. burette)	✗	✗	✗	✓
158	safety kit for healthcare provider	✓	✓	✓	✓
159	clean delivery kits	✓	✗	✓	✓

Source: Health Department's Notification, Dated Apr 22, 2024

District Wise Total Irrigated Area in Balochistan





Annex-WC

Underground Water Quality Report, Gharibabad, Nok Kundi
Sample date: 19-05-2024 , Analysis Date: 20-05-2024, Analysis by Q-WASA

Table 36: Underground Water Quality Report, Gharibabad, Nok Kundi

Water Quality Testing (Physical, Chemical & Microbiological) Parameters:

Sr.#	Water Quality Parameter	Reference Method	Measurement Uncertainty	Permissible Limits	Results
1	Color (TCU)	APHA	-	Colorless	Colorless
2	Odor	APHA	-	Odorless	Odorless
3	Taste	APHA	-	Tasteless	Tasteless
4	pH	APHA	+-0.02	6.5-8.5 (WHO)	7.49
5	Conductivity (µS/cm)	APHA	+-2.64	NGVS	823
6	Turbidity (NTU)	APHA	±0.06	5 (WHO)	7.2
7	TDS (mg/l)	APHA	-	1000 (WHO)	497
8	Bicarbonate (mg/l)	APHA	±3	NGVS	180
9	Alkalinity (mg/l)	APHA	±3	NGVS	3.6
10	Carbonate (mg/l)	APHA	Nil	NGVS	0
11	Potassium (mg/l)	APHA	±0.1	12(EC)	1.0
12	Sodium (mg/l)	APHA	±0.1	200 (WHO)	137
13	Calcium (mg/l)	APHA	±0.7	NGVS	44
14	Magnesium (mg/l)	APHA	±0.1	150 (WHO)	21.6
15	Hardness (mg/l)	APHA	±1.2	500 (WHO)	200
16	Chloride (mg/l)	APHA	±1	250 (WHO)	123
17	Sulfate (mg/l)	APHA	±0.8	250 (WHO)	124
18	Nitrate-N (mg/l)	APHA	-	10 (WHO)	4.3
19	Fluoride (mg/l)	APHA	-	1.5 (WHO)	1.08
20	E.Coli	3M Petrifilm Method (AOAC) CFU/ml	-	0/100	0
21	Total Coliform	3M Petrifilm Method (AOAC) CFU/ml	-	0/100	11

NGVS No Guideline Value Set

WHO World Health Organization

EC European Community

APHA American Public Health Association

Annex-WD

Table 37:Underground Water Quality Report, Zorabad, Nok Kundi

Water Quality Testing (Physical, Chemical & Microbiological) Parameters:

Sr.#	Water Quality Parameter	Reference Method	Measurement Uncertainty	Permissible Limits	Results
1	Color (TCU)	APHA	-	Colorless	Colorless
2	Odor	APHA	-	Odorless	Odorless
3	Taste	APHA	-	Tasteless	Saltiest
4	Ph	APHA	+-0.02	6.5-8.5 (WHO)	7.84
5	Conductivity (µS/cm)	APHA	+-2.64	NGVS	3230
6	Turbidity (NTU)	APHA	±0.06	5 (WHO)	17.8
7	TDS (mg/l)	APHA	-	1000 (WHO)	1810
8	Bicarbonate (mg/l)	APHA	±3	NGVS	390
9	Alkalinity (mg/l)	APHA	±3	NGVS	7.8
10	Carbonate (mg/l)	APHA	Nil	NGVS	0
11	Potassium (mg/l)	APHA	±0.1	12(EC)	7
12	Sodium (mg/l)	APHA	±0.1	200 (WHO)	410
13	Calcium (mg/l)	APHA	±0.7	NGVS	220
14	Magnesium (mg/l)	APHA	±0.1	150 (WHO)	55.9
15	Hardness (mg/l)	APHA	±1.2	500 (WHO)	780
16	Chloride (mg/l)	APHA	±1	250 (WHO)	423
17	Sulfate (mg/l)	APHA	±0.8	250 (WHO)	460
18	Nitrate-N (mg/l)	APHA	-	10 (WHO)	4.0
19	Fluoride (mg/l)	APHA	-	1.5 (WHO)	0.90
20	E.Coli	3M Petrifilm Method (AOAC) CFU/ml	-	0/100	0
21	Total Coliform	3M Petrifilm Method (AOAC) CFU/ml	-	0/100	15

NGVS No Guideline Value Set

WHO World Health Organization

EC European Community

APHA American Public Health Association

Table 38: Watering Points / WSS by Functional Status

S#	LAT	LONG	Name of Asset	UC/Ward	Functional Status
1	29.04291	65.43203	Constt: of Water Supply Scheme Killi Waris M. Hassani	Padag	Yes
2	29.02903	65.36836	WSS Killi Noor Muhd Puzhoi	Padag	Yes
3	28.97049	64.6806	Constt: of Water Supply Scheme Killi Haji Muhammad Kahir Karaduk	Saddar Dalbandin	Yes
4	28.98308	65.22473	Constt: of Water Supply Scheme Killi Khuda Bakhsh	Padag	Yes
5	28.99902	65.28251	Constt: of Water Supply Scheme Killi Malik Gulzaman Joshinzai	Padag	Yes
6	28.98229	65.24372	Constt: of Water Supply Scheme Killi Sangari	Padag	Yes
7	28.95973	64.81606	Constt: of Water Supply Scheme Killi Sultan Muhammad Reki Nok Chah	Saddar Dalbandin	Yes
8	28.98216	65.18471	Constt: of Water Supply Scheme Killi Muhammad Waris Sasoli Chasar	Padag	Yes
9	28.96182	64.69065	Constt: of Water Supply Scheme Killi Madad Khan Karoduk	Saddar Dalbandin	Yes
10	29.03226	65.36846	WSS Killi Umer Khan	Padag	Yes
11	29.33428	64.68907	Constt: of Water Supply Scheme Killi Hazoor Bakhsh Chaghi	Chagai	Yes
12	29.14643	64.68297	Constt: of Water Supply Scheme Killi Malik Sarwar	Chagai	Yes
13	29.31439	64.68062	Constt: of Water Supply Scheme Killi Nehal Khan Dast-E-Goran	Chagai	No
14	29.23458	64.6775	Constt: of Water Supply Scheme Killi Syed Abdul Qadir Shah Salar	Chagai	Yes
15	29.27215	64.67389	Constt: of Water Supply Scheme Killi Omat Ali Shadi Shafe	Chagai	Yes
16	28.74552	63.86224	Constt: of Water Supply Scheme Killi Shah Saleem Yak Mach	Pat-e-Gonakoh	Yes
17	29.47042	64.75137	Constt: of Water Supply Scheme Killi Haji Peer Muhammad Sumalani	Ziarat Balnosh	No
18	29.40915	64.73261	Constt: of Water Supply Scheme Killi Haji Murad Sumalani Bishri	Ziarat Balnosh	Yes
19	29.29756	64.67315	Constt: of Water Supply Scheme Killi Iqbal Jan Nadir Abad	Chagai	Yes
20	29.29063	64.66306	WSS Killi H Yaqoob Mirani	Chagai	Yes
21	28.9363	65.06218	Constt: of Water Supply Scheme Killi Sardar Mohammad Alim Sasoli	Padag	No
22	28.97251	65.09831	Constt: of Water Supply Scheme Killi Khudami	Padag	Yes
23	28.88428	64.77272	WSS Killi Lal Muhd	Padag	Yes
24	28.89419	64.79966	Constt: of Water Supply Scheme Killi Babo Muhammad Afzal Shsdrak	Padag	Yes
25	28.89485	64.79543	Constt: of Water Supply Scheme Kill Haji Qadir Bakhsh Notezai Daddar	Padag	Yes
26	28.99672	64.87167	Constt: of Water Supply Scheme Killi Muhammad Bakhsh	Padag	No
27	28.90851	64.85889	Constt: of Water Supply Scheme Kill Abdul Khaliq Bakhali	Padag	No
28	28.9045	64.85894	Constt: of Water Supply Scheme Kill Mir Allah Bakhsh Bakhali	Padag	Yes

S#	LAT	LONG	Name of Asset	UC/Ward	Functional Status
29	28.88765	64.88895	Constt: of Water Supply Scheme Killi Atta Muhammad Barabchah	Padag	No
30	28.88903	64.88817	WSS Killi Haji Atta Aijub	Padag	Yes
31	29.32198	64.67506	Constt: of Water Supply Scheme Killi Sardar Yaqoob Peerkzai	Chagai	Yes
32	29.26873	64.34756	WSS Killi Malik Zaman Sumalani	Ziarat Balnosh	Yes
33	28.63632	61.83686	Constt: of Water Supply Scheme Killi Talab Taftan	Taftan	Yes
34	28.91021	64.14067	Constt: of Water Supply Scheme Killi Sardar Abdul Baqi	Chilghazi	Yes
35	28.89782	64.9181	WSS Killi Haji Qadir Cheater	Padag	Yes
36	29.06556	64.24195	Constt: of Water Supply Scheme Kill Haji Nadir Khan Notezai	Chilghazi	No
37	29.04159	64.10013	Constt: of Water Supply Scheme Killi Sobedar Jamal Akazai	Chilghazi	Yes
38	28.7793	64.45896	Constt: of Water Supply Scheme Killi Mir Hamza Notezai	Saddar Dalbandin	Yes
39	29.45541	63.37312	Constt: of Water Supply Scheme Killi Haji Amir Patkuk	Amri	No
40	29.4728	63.50444	Constt: of Water Supply Scheme Killi Muhammad Nabi Chahay Marak	Amri	No
41	29.47009	63.54373	Constt: of Water Supply Scheme Killi Haji Sanjar Patkok	Amri	Yes
42	29.2452	63.62479	Constt: of Water Supply Scheme Killi Malik Abdullah Badozai	Amri	No
43	29.22885	63.60143	Constt: of Water Supply Scheme Killi Shah Dost Amuri	Amri	No
44	29.1797	63.59104	Constt: of Water Supply Scheme Killi Nazar Jan Bareach	Amri	Yes
45	29.17814	63.5905	Constt: of Water Supply Scheme Killi Najeeb Ullah Sanjarani	Amri	Yes
46	28.9997	63.56665	Constt: of Water Supply Scheme Killi Abdul Aziz Gat a Baroth	Amri	Yes
47	29.45493	63.37586	Constt: of Water Supply Scheme Killi Shahbaz Khan Patkuk	Amri	Yes
48	29.45271	63.38341	Constt: of Water Supply Scheme Killi Haji Sarwar Hassani Patkok	Amri	Yes
49	29.44591	63.46712	Constt: of Water Supply Scheme Killi Baran Patkok	Amri	No
50	29.46975	63.51664	Constt: of Water Supply Scheme Killi Meer Khan Dashtok	Amri	No
51	29.24467	63.62214	WSS Killi Malik M.Khan Hassanzai	Amri	Yes
52	29.22392	63.60341	WSS Killi Qazi M.A Hassanzai	Amri	Yes
53	29.00141	63.56725	WSS Killi M. Rasool Diyap Chagai	Amri	Yes
54	28.958	63.64488	Constt: of Water Supply Scheme Killi Mir Fateh Muhammad Mir Khan Chah	Amri	Yes
55	28.94027	63.64367	Constt: of Water Supply Scheme Killi Malik Pasund Ghat-E-Baroth	Amri	Yes
56	29.1413	64.69641	Constt: of Water Supply Scheme Killi Ghazi Khan Reki	Chagai	Yes
57	29.16893	64.69831	Constt: of Water Supply Scheme Killi Haji Rasool Khan Ameen Abad	Chagai	No

S#	LAT	LONG	Name of Asset	UC/Ward	Functional Status
58	29.1715	64.68558	WSS Killi Burma	Chagai	Yes
59	29.1506	64.71292	Constt: of Water Supply Scheme Killi Haji Zakriya	Chagai	Yes
60	29.14903	64.70577	Constt: of Water Supply Scheme Kill Hafiz Suleman Ameen Abad	Chagai	Yes
61	29.1484	64.70156	Constt: of Water Supply Scheme Killi Janu Khan Rahi Ameen Abad	Chagai	Yes
62	29.15417	64.7056	Constt: of Water Supply Scheme Killi Haji Jan Muhammad	Chagai	Yes
63	29.13149	64.67045	Constt: of Water Supply Scheme Killi Haji Arif Ameen Abad	Chagai	Yes
64	28.891	64.95006	Constt: of Water Supply Scheme Killi Ghulam Mustafa Kapok	Padag	Yes
65	28.89139	64.907	Constt: of Water Supply Scheme Killi Jeehand Khan Cheatter	Padag	No
66	28.89655	64.90141	Constt: of Water Supply Scheme Killi Chehatter Bazar Area	Padag	Yes
67	28.90702	64.81187	Constt: of Water Supply Scheme Kill Muhammad Murad Bazgaz	Padag	Yes
68	28.90519	64.80594	Constt: of Water Supply Scheme Killi Muhammad Hassan Bazgaz	Padag	Yes
69	28.89402	64.79961	Constt: of Water Supply Scheme Kill Mullah Feroz Shah Bazgaz	Padag	Yes
70	28.92205	64.8351	Constt: of Water Supply Scheme Killi Naik Muhammad Zor Abad Mazang	Padag	Yes
71	28.79024	64.02408	Constt: of Water Supply Scheme Kill Malik Niyaz Muhammad Notezai	Pat-e-Gonakoh	No
72	28.78395	64.04982	Constt: of Water Supply Scheme Kill Shafi Muhammad Notezai	Pat-e-Gonakoh	No
73	28.95965	64.68692	Constt: of Water Supply Scheme Killi Meeranzai	Saddar Dalbandin	Yes
74	28.96207	64.68245	WSS Killi Ghulam Muhd Miranzai	Saddar Dalbandin	Yes
75	28.99236	64.68098	Constt: of Water Supply Scheme Killi Qaim Khan Barshonki Meeranzai Karoduk	Saddar Dalbandin	Yes
76	28.96877	64.6786	Constt: of Water Supply Scheme Killi Malik Shair Khan Karoduk	Saddar Dalbandin	No
77	28.94346	64.60797	Constt: of Water Supply Scheme Killi Peeshuk	Saddar Dalbandin	Yes
78	28.90271	64.95814	Constt: of Water Supply Scheme Killi Haji Abdul Samad Padag	Padag	Yes
79	28.93667	65.0734	Constt: of Water Supply Scheme Killi Killi Aashalo	Padag	Yes
80	28.94911	65.12648	Constt: of Water Supply Scheme Killi Asmat Ullah Sasoli Charsar	Padag	Yes
81	29.31455	64.67845	Water Supply Scheme Killi Haji Bahi Khan Dasht a Goran	Chagai	Yes
82	29.31152	64.67965	Constt: of Water Supply Scheme Killi Ali Akber Khan Sanjarani	Chagai	Yes
83	29.30945	64.6719	Constt: of Water Supply Scheme Killi Sardar Abdullah Khan Sanjarani	Chagai	No
84	29.30374	64.66731	Constt: of Water Supply Scheme Killi Sultan Khan Sanjarani	Chagai	Yes
85	29.29372	64.67308	Constt: of Water Supply Scheme Killi Jan Baig Langau Chagai	Chagai	Yes
86	29.40151	64.73242	WSS Killi Mir Baz Mangle	Chagai	Yes

S#	LAT	LONG	Name of Asset	UC/Ward	Functional Status
87	29.41093	64.74014	Constt: of Water Supply Scheme Killi Ghulam Heedar Channal	Ziarat Balnosh	Yes
88	29.41822	64.74147	WSS Killi Betai Khn Burakzai, UC Balanosh Chagai	Ziarat Balnosh	Yes
89	29.44611	64.75228	Constt: of Water Supply Scheme Killi Khan Muhammad Mengal Lashkarab	Ziarat Balnosh	Yes
90	29.45485	64.76323	WSS Killi Malik Khuda Bux Sumalani	Ziarat Balnosh	Yes
91	29.46613	64.75963	Constt: of Water Supply Scheme Killi Darwesh Shehzai	Ziarat Balnosh	Yes
92	29.4658	64.75301	Constt: of Water Supply Scheme Killi Haji Nawab Khan Sumalani	Ziarat Balnosh	Yes
93	29.47209	64.75608	Constt: of Water Supply Scheme Killi Gul Muhammad Lashkarab	Ziarat Balnosh	Yes
94	29.48641	64.75714	Constt: of Water Supply Scheme Killi Malik Shah Hussain Lashkarab	Ziarat Balnosh	Yes
95	29.41505	64.73035	Constt: of Water Supply Scheme Killi Sumalzai	Ziarat Balnosh	Yes
96	29.49229	64.77485	WSS Killi Syed Murad Shah	Ziarat Balnosh	Yes
97	29.49881	64.77431	Constt: of Water Supply Scheme Killi Sakhi Ikhlas Shezai	Ziarat Balnosh	Yes
98	29.50203	64.77005	Constt: of Water Supply Scheme Killi Malik Baran Lashkarab	Ziarat Balnosh	Yes
99	29.50669	64.77289	WSS Killi Haji Bhai Khan (Lashkarabad)	Ziarat Balnosh	Yes
100	29.51345	64.77802	Constt: of Water Supply Scheme Kill Killi Safar Khan Lashkarab	Ziarat Balnosh	Yes
101	29.52271	64.78128	Constt: of Water Supply Scheme Killi Sakhi Faizullah Laskarab	Ziarat Balnosh	Yes
102	29.55084	64.80019	Constt: of Water Supply Scheme Killi Haji Muhammad Nal Abad (Nafas Khan)	Ziarat Balnosh	Yes
103	29.54915	64.80737	Constt: of Water Supply Scheme Killi Major Hakeem Dad Nal Abad	Ziarat Balnosh	Yes
104	28.73454	64.18885	Constt: of Water Supply Scheme Kill Bahi Khan Muhammadzai Khargoshkan	Chilghazi	Yes
105	28.75967	64.30016	WSS Killi M. Naseer Gaddani	Saddar Dalbandin	Yes
106	28.82047	64.54203	WSS Killi Lal M Notzai	Saddar Dalbandin	Yes
107	28.83211	64.57814	Constt: of Water Supply Scheme Killi Mir Badal Khan Nawarh	Saddar Dalbandin	Yes
108	28.83804	64.63026	Constt: of Water Supply Scheme Killi Sia Chang	Padag	Yes
109	28.82534	64.65274	WSS Killi Siachang UC Padag Chagai	Padag	Yes
110	28.82727	64.66641	WSS Killi Wali Muhammad Zard	Padag	Yes
111	28.82896	64.74021	Constt: of Water Supply Scheme Killi Jhandi Khama	Padag	Yes
112	28.89428	64.86917	Constt: of Water Supply Scheme Killi Haji Nasrullah Bakhali	Padag	Yes
113	28.81435	64.84136	Constt: of Water Supply Scheme Kill Shikari Rashid Rahiyo	Padag	No
114	28.75671	64.93907	Constt: of Water Supply Scheme Kill Abdul Wahab Rahiyo	Padag	Yes
115	28.75568	64.94703	Constt: of Water Supply Scheme Killi Abdul Kareem Rahiyo	Padag	Yes

S#	LAT	LONG	Name of Asset	UC/Ward	Functional Status
116	28.76817	64.87123	Constt: of Water Supply Scheme Killi Aabshera Raheyo	Padag	Yes
117	28.80535	64.85943	Constt: of Water Supply Scheme Kill Rahiyo	Padag	Yes
118	29.27304	64.67173	Constt: of Water Supply Scheme Killi Haji Faqeer Shehsalar	Chagai	Yes
119	29.27089	64.6854	Constt: of Water Supply Scheme Killi Malik Dilmurad Shadi Shafe	Chagai	Yes
120	29.27092	64.69051	Constt: of Water Supply Scheme Killi Khan Jan Sanjarani Shadi Shafe	Chagai	Yes
121	29.2689	64.69666	Constt: of Water Supply Scheme Killi Haji Raza Shadi Shaif	Chagai	Yes
122	29.26653	64.70117	Constt: of Water Supply Scheme Killi Haji Jan Khan Shadi Shaif	Chagai	Yes
123	29.24349	64.67738	Constt: of Water Supply Scheme Killi Malik Roshan Shehsalar	Chagai	Yes
124	29.23937	64.68478	Constt: of Water Supply Scheme Killi Mir Hassan Shah Salar	Chagai	Yes
125	29.21795	64.69103	Constt: of Water Supply Scheme Killi Chairman Ali Baig	Chagai	Yes
126	29.19227	64.69079	Constt: of Water Supply Scheme Killi Chandar Khan Shah Salar	Chagai	Yes
127	28.88633	64.40699	Filtration Plant Chahgi	Municipal Corporation Chagai	No
128	29.25807	64.27458	Constt: of Water Supply Scheme Killi Sardar Muhammad Umer Hassani Posti	Chilghazi	Yes
129	29.25192	64.26006	Constt: of Water Supply Scheme Kill Jumma Khan Qambarzai Posti	Chilghazi	Yes
130	29.23608	64.2477	Constt: of Water Supply Scheme Kill Moulvi Haneef Posti	Chilghazi	No
131	29.13325	64.32326	Constt: of Water Supply Scheme Kill Sardar Mir Ahmed Posti	Chilghazi	Yes
132	29.26048	64.27452	Constt: of Water Supply Scheme Killi Dr. Hayat	Chilghazi	No
133	29.26204	64.24816	Constt: of Water Supply Scheme Killi Bismillah Posti	Chilghazi	Yes
134	29.23327	64.25138	Constt: of Water Supply Scheme Kill Najeeb Muhammad Hassani Posti	Chilghazi	Yes
135	29.11035	64.33422	Constt: of Water Supply Scheme Kill Rakhshani Posti	Chilghazi	Yes
136	28.93005	64.40236	Constt: of Water Supply Scheme Kill Malik Buranzai Syed Karam Shah	Chilghazi	No
137	28.9152	64.4188	Constt: of Water Supply Scheme Killi Dawood Abad Dalbadin	Chilghazi	No
138	28.97308	64.36699	Constt: of Water Supply Scheme Killi Haji Muhammad Hanif Notezai	Chilghazi	Yes
139	28.95095	64.38249	Constt: of Water Supply Scheme Kill Dost Muhammad Notezai	Chilghazi	Yes
140	28.86399	64.33739	WSS Killi Malag Gorow UC Saddar Chagai	Saddar Dalbandin	Yes
141	28.87077	64.34413	WSS Killi Ghul Muhd Dadar	Saddar Dalbandin	Yes
142	28.93093	64.48343	Constt: of Water Supply Scheme Killi Shakar Notezai Sordigari	Saddar Dalbandin	Yes
143	28.69189	64.18542	Constt: of Water Supply Scheme Killi Abdul Hakeem Khargoshkan	Chilghazi	Yes
144	28.909	64.14268	Constt: of Water Supply Scheme Killi Abdul Wahid	Chilghazi	Yes

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145	28.98911	64.13348	Constt: of Water Supply Scheme Kill Mandazai Soran	Chilghazi	Yes
146	29.04745	64.1443	Constt: of Water Supply Scheme Kill Izzat Notezai Soran	Chilghazi	Yes
147	28.93445	64.2529	Constt: of Water Supply Scheme Kill Noor Ullah Notezai Kani	Chilghazi	Yes
148	28.93739	64.24498	Constt: of Water Supply Scheme Killi Haji Saifo Khan	Chilghazi	Yes
149	28.81979	63.72019	WSS Killi Nali Zahid Notazai	Amri	Yes
150	28.68282	64.19525	Constt: of Water Supply Scheme Killi Malik Saleem Zaye U/C Pat-A-Gowannakov	Pat-e-Gonakoh	Yes
151	28.69135	64.18246	Constt: of Water Supply Scheme Kill Malik Abdul Hameed Notezai Khargoshkan	Chilghazi	Yes
152	28.69461	64.18255	Constt: of Water Supply Scheme Killi Mohammad Yousaf	Pat-e-Gonakoh	Yes
153	28.61587	64.16079	Constt: of Water Supply Scheme Killi Haji Abdul Kareem	Chilghazi	Yes
154	28.91148	64.14458	WSS Killi Kia Khan Notezai	Chilghazi	Yes
155	28.94158	64.12707	Constt: of Water Supply Scheme Kill Khair Bakhsh Notezai Sooran	Chilghazi	Yes
156	28.93499	64.25121	Constt: of Water Supply Scheme Killi Haji Rawat Khan	Chilghazi	Yes
157	28.94004	64.24229	Constt: of Water Supply Scheme Killi Yaqoob Notezai Ayub Kani	Chilghazi	Yes
158	28.90723	64.25673	Constt: of Water Supply Scheme Killi Malik Gul Zaman	Chilghazi	No
159	28.82889	64.39077	Constt: of Water Supply Scheme Killi Jameel Ahmed Sia Jungle	Saddar Dalbandin	Yes
160	28.80013	63.72306	WSS Killi Ali Nawaz Notazai	Amri	Yes
161	29.06834	64.31713	Constt: of Water Supply Scheme Killi Sakhi Bahadur Notezai	Chilghazi	Yes
162	28.98116	65.18157	WSS Killi Bagoo UC Padag Chagai	Padag	Yes
163	29.18316	64.28396	Constt: of Water Supply Scheme Killi Haji Jala khan	Chilghazi	Yes
164	29.09107	64.32478	Constt: of Water Supply Scheme Killi Chairman Ali Jan Notezai	Chilghazi	Yes
165	29.32174	64.67038	Constt: of Water Supply Scheme Killi Haji Abad Peerkzai	Chagai	Yes
166	29.3484	64.67855	WSS Killi Malik Brahu Chagai	Chagai	Yes
167	29.32416	64.66641	Constt: of Water Supply Scheme Killi Yaqoob Peerkzai	Chagai	Yes
168	28.97436	61.55941	Filtration Plant Nazim Office Taftan City	Taftan	No
169	28.64134	61.82951	Constt: of Water Supply Scheme Killi Aijbani Talab	Taftan	Yes
170	28.52981	63.03137	Constt: of Water Supply Scheme Killi Brauq	Nok Kundi	Yes
171	28.5971	63.06849	Constt: of Water Supply Scheme Killi Waja Hassan Shezai	Nok Kundi	Yes
172	28.59964	63.06895	Constt: of Water Supply Scheme Killi Essa Killi Tahir	Nok Kundi	Yes
173	29.34406	64.67152	Constt: of Water Supply Scheme Killi Haleem	Chagai	Yes

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174	29.34804	64.6664	Constt: of Water Supply Scheme Killi Kaka Hashim Chaghi	Chagai	Yes
175	29.33238	64.66664	Constt: of Water Supply Scheme Killi Khuda-E-Dad Mandazai	Chagai	Yes
176	29.32271	64.67496	Constt: of Water Supply Scheme Killi Ali Dost Mengal	Chagai	Yes
177	29.28166	64.54255	Constt: of Water Supply Scheme Killi Seshman	Ziarat Balnosh	Yes
178	29.29805	64.48406	Constt: of Water Supply Scheme Killi Haji Shair Muhammad	Ziarat Balnosh	Yes
179	29.2936	64.48997	WSS Killi Faiz Muhammad Anjeer	Ziarat Balnosh	Yes
180	29.2864	64.47096	Constt: of Water Supply Scheme Killi Doganan	Ziarat Balnosh	Yes
181	29.28586	64.47111	Constt: of Water Supply Scheme Killi Saleh Muhammad Shahi Dognan	Ziarat Balnosh	Yes
182	29.31034	64.4371	Constt: of Water Supply Scheme Killi Sardar Mehmood Jan Haneshini	Ziarat Balnosh	Yes
183	29.32988	64.43661	Constt: of Water Supply Scheme Killi Syed Glamor Shah Doganan	Ziarat Balnosh	Yes
184	29.32322	64.5523	WSS Killi Jahangeer Dana	Ziarat Balnosh	Yes
185	29.27974	64.51029	Constt: of Water Supply Scheme Killi Abdul Qadous	Ziarat Balnosh	Yes
186	29.27961	64.38169	Constt: of Water Supply Scheme Killi Mulla Mobeen	Ziarat Balnosh	Yes
187	29.27031	64.38116	Constt: of Water Supply Scheme Killi Malik Mehrab Gaisherdan	Ziarat Balnosh	Yes
188	29.26406	64.36822	Constt: of Water Supply Scheme Killi Azeem Shah	Ziarat Balnosh	Yes
189	29.26001	64.33811	Constt: of Water Supply Scheme Killi Faqeer Darammin	Ziarat Balnosh	Yes
190	29.29815	64.31379	Constt: of Water Supply Scheme Killi Sanjarani Killa-a-Kurd	Ziarat Balnosh	Yes
191	29.29257	64.31431	Constt: of Water Supply Scheme Killi Malik Khair Muhammad Damardag	Ziarat Balnosh	Yes
192	29.39265	64.00699	Constt: of Water Supply Scheme Killi Barabchah Karez Bazar	Barab Chah	Yes
193	29.38869	63.99234	WSS Killi Mustafa Shahozai	Barab Chah	Yes
194	29.39048	63.98772	WSS Killi Fida Muhd Barabcha Chagai	Barab Chah	Yes
195	29.38077	63.97673	WSS Killi Shikari NoorShah	Barab Chah	Yes
196	29.38031	63.99281	Constt: of Water Supply Scheme Killi Haji Ahmed Din Barabcha	Barab Chah	Yes
197	29.37949	64.01071	Constt: of Water Supply Scheme Killi Abdul Khaliq Hassanzai	Barab Chah	Yes
198	29.38328	64.01671	WSS Killi Haji Shahjan	Barab Chah	Yes
199	29.37569	63.99419	WSS Killi Khan Muhd Ajbhani UC Baracha Chagai	Barab Chah	Yes
200	29.36408	63.98947	WSS Killi Haji Buranudeen	Barab Chah	Yes
201	29.38226	64.02753	Constt: of Water Supply Scheme Killi Haji Bilal	Saddar Dalbandin	Yes
202	29.37903	64.02611	Constt: of Water Supply Scheme Killi Peer Dad Joojuki	Barab Chah	No

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203	29.38507	64.02755	WSS Killi Badeen Taimoor Chal	Barab Chah	Yes
204	29.39026	64.02734	Constt: of Water Supply Scheme Killi Jamal Din	Barab Chah	No
205	29.38635	64.03155	Constt: of Water Supply Scheme Killi Agha Mehmood Gul Guz	Barab Chah	Yes
206	29.3808	64.0344	Constt: of Water Supply Scheme Killi Shah Nizar	Barab Chah	Yes
207	29.38448	64.03614	Constt: of Water Supply Scheme Killi Temoor Chahi Brabchah	Barab Chah	Yes
208	29.38869	64.03676	Constt: of Water Supply Scheme Killi Ghulam Mohid Din	Barab Chah	Yes
209	29.38422	64.0417	Constt: of Water Supply Scheme Killi Muhammad Shah Ziyarat	Ziarat Balnosh	Yes
210	29.28027	64.17791	Constt: of Water Supply Scheme Kill Zahir Kalbarak	Barab Chah	No
211	29.24432	64.25949	Constt: of Water Supply Scheme Killi Hakeem Dad	Chilghazi	Yes
212	29.13612	64.51424	Constt: of Water Supply Scheme Killi Noor Muhammad Bholoo	Ziarat Balnosh	Yes
213	29.28249	64.24789	Constt: of Water Supply Scheme Killi Jumma Khan Mosazai	Chilghazi	Yes
214	29.1393	64.69437	WSS Killi Nazimabad	Chagai	Yes
215	29.11265	64.72859	WSS Killi Damarda Ameenabad UC Chagai District Chagai	Chagai	Yes
216	29.16137	63.47416	WSS Killi H. Murad Burhanzai	Jhuli	Yes
217	29.19909	63.38652	Constt: of Water Supply Scheme Killi Malik Naik Muhammad Jhulli	Jhuli	No
218	29.28888	63.3141	WSS Killi Shah Nawaz Shingaroo	Jhuli	Yes
219	29.35171	63.31993	Constt: of Water Supply Scheme Killi Allah Bakhsh Gowanshero	Jhuli	Yes
220	29.26553	63.34362	Constt: of Water Supply Scheme Killi Sardar Khuda Bakhsh Sherzai	Jhuli	Yes
221	29.17192	62.55789	Constt: of Water Supply Scheme Killi Gharib Halq	Jhuli	Yes
222	29.17586	62.56049	Constt: of Water Supply Scheme Killi Durbancha	Jhuli	Yes
223	29.17593	62.56176	Constt: of Water Supply Scheme Killi Mulla Tawakal Durbancha	Jhuli	No
224	29.17999	62.55966	Constt: of Water Supply Scheme Killi Tawakkal Ghamecha	Nok Kundi	Yes
225	29.17753	62.55738	Constt: of Water Supply Scheme Killi Muhammad Ramzan Umay	Nok Kundi	No
226	29.17581	62.55947	Water Supply Scheme Killi Jamadar Haji Ashraf Buranzai	Nok Kundi	No
227	29.00636	62.46037	Constt: of Water Supply Scheme Killi Razai Mashki Chah	Nok Kundi	Yes
228	29.20401	63.44401	WSS Killi H. Majeed	Jhuli	Yes
229	29.20597	63.44112	WSS Killi Bhadur Zharo	Jhuli	Yes
230	29.20772	63.40752	Constt: of Water Supply Scheme Killi Shafi Muhammad Mengal	Jhuli	Yes
231	29.28297	63.28927	Constt: of Water Supply Scheme Killi Master Tawakkal Shengaro	Jhuli	Yes

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232	29.34863	63.31828	Constt: of Water Supply Scheme Killi Dewanag	Jhuli	Yes
233	29.34818	63.31668	Constt: of Water Supply Scheme Killi Malik Mehrab Khan Dewanag	Jhuli	Yes
234	29.35161	63.35399	Constt: of Water Supply Scheme Killi Haji Hammal Khan	Jhuli	Yes
235	29.17284	62.55936	Constt: of Water Supply Scheme Killi Haji Mirza Gowanshero	Jhuli	No
236	29.17168	62.56228	Constt: of Water Supply Scheme Killi Mirza Sha-E-Dewanag	Jhuli	Yes
237	28.27392	62.66581	Constt: of Water Supply Scheme Killi Rajay	Taftan	No
238	28.26558	62.63785	Constt: of Water Supply Scheme Killi Asfand Yar Muhammad Zai Rajay	Taftan	No
239	28.30882	62.70899	Constt: of Water Supply Scheme Killi Gowalishtap	Taftan	Yes
240	28.90545	64.43014	Constt: of Water Supply Scheme Killi Shahnizar	Saddar Dalbandin	Yes
241	28.91683	64.43781	Constt: of Water Supply Scheme Killi Baran Ejbarhi	Saddar Dalbandin	No
242	29.05593	64.45234	Constt: of Water Supply Scheme Killi Baran Chappar	Chilghazi	No
243	29.05611	64.44957	Constt: of Water Supply Scheme Killi Abdul Razaq	Chilghazi	Yes
244	28.897	64.90599	Constt: of Water Supply Scheme Killi Haji Ibrahim Cheatter	Padag	No
245	28.90963	64.95443	WSS Killi H Aziz Muhammad Hassani	Padag	Yes
246	28.95032	65.12367	Constt: of Water Supply Scheme Killi Haji Hazoor Bakhsh Parahi	Padag	Yes
247	29.00547	65.32017	Constt: of Water Supply Scheme Killi Abdul Rehman Mohammad Hassani	Padag	Yes
248	29.22435	61.65332	Constt: of Water Supply Scheme Killi Haji Khan Muhammad Mandazai	Taftan	No
249	29.4696	64.76397	Constt: of Water Supply Scheme Killi Shehzai	Ziarat Balnosh	Yes
250	29.37758	64.55828	Constt: of Water Supply Scheme Killi Moulvi Zaman Baranzai Gwanshero	Amri	Yes
251	28.92991	64.55148	Tubewell Killi Rasool Bakhsh Laghap	Saddar Dalbandin	Yes
252	29.03675	65.40465	Surface Water Storage Tank Killi Khuda Bakhsh Padag	Padag	Yes
253	29.0248	65.36337	WSS Killi Wali Shah	Padag	Yes
254	28.95119	65.05778	Surface Water Storage Tank Killi Haji Ghulam Nabi Charsar	Padag	Yes
255	29.00758	65.32451	Tubewell Killi Allah Yar Padag	Padag	Yes
256	28.98515	65.25803	Tubewell Killi Badal Khan Padag	Padag	Yes
257	28.88832	64.40957	PHE Office Chaghi	Municipal Committee Chagai	Yes
258	29.31252	64.68176	Tubewell Killi Haji Nehal Khan	Chagai	No
259	29.28476	64.67169	Water Supply Scheme Killi Haji Kochal	Chagai	Yes
260	29.02661	64.0132	Water Supply Scheme Killi Malik Eid Muhammad	Pat-e-Gonakoh	Yes

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261	28.83086	63.99394	Tubewell Khaleefa Abdul Rahim Ghusia Langar	Pat-e-Gonakoh	Yes
262	28.79432	63.98194	Water Storage Tank Killi Malik Shafi Muhammad	Pat-e-Gonakoh	Yes
263	28.82342	64.73923	Water Supply Scheme Killi Muhammad Bux	Padag	Yes
264	28.87545	64.76848	Tubewell Killi Rahim Bux	Padag	Yes
265	28.84406	64.77162	Water Supply Scheme Killi Zallo	Padag	Yes
266	28.88562	64.78913	Tubewell Killi Mula Dildar	Padag	No
267	29.02998	64.92786	Water Supply Scheme Killi Saif ullah Khan	Padag	No
268	29.44203	64.76746	Water Storage Tank Killi Haji Fazal Muhammad Lashkarab	Ziarat Balnosh	Yes
269	28.84208	62.74539	Water Supply Scheme Nok Kundi	Nok Kundi	Yes
270	28.63229	61.84473	Tubewell Killi Haji Malik Muhammad Jan Talab	Taftan	Yes
271	28.94379	64.1289	Tubewell GBPS Killi Suleman Soran	Chilghazi	Yes
272	28.89632	64.94675	Water Storage Tanki Killi Muhammah Azum Kunrok	Padag	Yes
273	28.92659	64.97813	Tubewell Killi Sharif Khan Kapok	Padag	Yes
274	28.91229	64.96214	Tubewell Killi Nazar Muhammad Kunrak	Padag	No
275	29.06315	64.27078	Tubewell Killi Haji Jahangeer Kochakki	Chilghazi	Yes
276	29.04517	64.14632	Tubewell Killi Haji Izzat Basso Karez	Chilghazi	Yes
277	28.83211	64.55953	Tubewell Killi Malik Naik Muhammad Nawer	Saddar Dalbandin	Yes
278	28.79839	64.52674	Tubewell Killi Baloch Khan Nawer	Saddar Dalbandin	Yes
279	28.91244	64.41089	Water Storage Reservoirs 3 Nos Dalbandin	Chilghazi	No
280	29.25011	64.27695	WSS Killi Pir Dad Posti	Chilghazi	No
281	28.57523	63.21306	WSS Kill Haji Bhai Khan (Lashkarabad)	Nok Kundi	No
282	29.32166	64.6732	Constt: of Water Supply Scheme Killi Gowa Johi	Ziarat Balnosh	Yes
283	29.27357	64.67546	Constt: of Water Supply Scheme Killi Gado Paseela	Padag	No
284	29.37045	64.71568	Constt: of Water Supply Scheme Killi Haji Mubarak	Chagai	Yes
285	29.35033	64.65289	Constt: of Water Supply Scheme Killi Haji Malik Shah	Ziarat Balnosh	Yes
286	29.35307	64.55741	WSS Killi Sardar Muhammad Jan Sakhi	Ziarat Balnosh	Yes

Table 39: Lighting and Cooking Fuel Sources by Area

Locality	House-holds	Fuel for lighting: Electricity	Fuel for lighting: Solar Panel	Fuel for lighting: Others	Fuel for cooking: Gas	Fuel for cooking: LPG/LNG	Fuel for cooking: Firewood	Fuel for cooking: Others	Separate Kitchen	No Kitchen
BALOCHISTAN										
All Localities	2,317,256	1,323,303	611,685	382,268	413,813	75,822	1,623,565	204,056	1,229,647	348,932
Rural	1,663,142	754,366	563,712	345,064	166,852	35,004	1,294,488	166,798	843,673	311,605
Urban	654,114	568,937	47,973	37,204	246,961	40,818	329,077	37,258	385,974	37,327
CHAGAI DISTRICT										
All Localities	38,213	13,467	20,342	4,404	502	7,906	27,960	1,845	26,456	4,944
Rural	35,640	10,971	20,312	4,357	490	6,562	27,055	1,533	24,591	4,841
Urban	2,573	2,496	30	47	12	1,344	905	312	1,865	103
CHAGAI TEHSIL										
All Localities	11,064	1,984	8,139	941	91	1,114	9,179	680	7,043	1,018
Rural	11,064	1,984	8,139	941	91	1,114	9,179	680	7,043	1,018
Urban	-	-	-	-	-	-	-	-	-	
DALBANDIN SUB-DIVISION										
All Localities	17,642	6,460	8,520	2,662	361	3,848	12,455	978	12,202	2,996
Rural	15,069	3,964	8,490	2,615	349	2,504	11,550	666	10,337	2,893
Urban	2,573	2,496	30	47	12	1,344	905	312	1,865	103
NOK KUNDI TEHSIL										
All Localities	3,141	1,768	1,126	247	18	1,605	1,488	30	2,266	95
Rural	3,141	1,768	1,126	247	18	1,605	1,488	30	2,266	95
Urban	-	-	-	-	-	-	-	-	-	

Source: Housing and Population Census 2023

GAPS INDENTIFICATION & NEED ASSESSMENT | STUDY REPORT

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