



Environmental and Social Management Framework

Balochistan Livelihood and Entrepreneurship Project



Planning and Development Division Balochistan

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Executive Summary

Rationale: Being one of the most populated (208 million) lower middle-income countries in the world, Pakistan has sustained its GDP growth rates from 3.7 percent in 2013 to 5.3 percent in 2017. This growth has been translated in the form of 22 percent raise in GDP per capita from approximately US\$ 1,333 in 2013 to US\$ 1,629 in 2017¹. However, the accelerated growth rates of the country do not commensurate in the province of Balochistan. According to 2014 poverty index estimation, 30 percent of the population lived below the poverty line as compared to 37 percent in 2010.² Balochistan has been ranked highest with 71.2 percent of population living below the poverty line. The proportion of poor in rural areas (84.6 %) is significantly higher than urban areas (37.7 %). Major districts of Balochistan exhibit significantly low social development and extremely high levels of poverty and deprivation. Over 90 percent of the individuals in the age cohort of 15-49 are unemployed and over 60 percent of those unemployed are illiterate. In the absence of the basic facilities, the province has further dropped in terms of sustainability.² In addition to these challenges related to poverty and low access to jobs and skills training, parts of Balochistan are defined by their disproportionately high concentration of refugee populations. According to a study by ILO and UNHCR³, almost 23 percent of Afghan refugees (approximately 318,000) in Pakistan are concentrated in six districts in Northern Balochistan. While originally concentrated in refugee camps, these refugees have, over the last decade, spread across the province and integrated with the non-refugee populations.

The Project: To ensure equitable development, particularly in the rural parts of the province, Government of Pakistan intends to initiate Balochistan Livelihood and Entrepreneurship Project (BLEP) with Planning and Development Division (P&DD) Balochistan. The Project has three main components aimed to benefit rural households and promote livelihoods through enterprise creation and employment generation. The project intends to address poverty and unemployment in the districts and attain social development. It will be implemented in eight bordering districts including Killa Abdullah, Killa Saifullah, Chagai, Sherani, Pishin, Mastung, Zhob and Nushki during the course of 5 years. The project will enable communities to establish business enterprises in the five sectors of the economy including agriculture, livestock, mines and minerals, handicraft, ecotourism and forestry. World Bank will counter finance the major project intervention through a portion of loan and grant. Livelihood support will be achieved through lending loans to the communities on need basis. These loans will only be provided for small and medium enterprises in identified sectors. In addition, small scale infrastructure development is also envisioned in these sectors to improve the income of the target districts. The objective is to promote employment opportunities through sustainable enterprises in select districts of Balochistan. The project will be executed by Planning and Development Department (P&DD) Balochistan through dedicated project management and implementation unit. Development linked to business enterprises may envisage potential negative impacts on physical, ecological and socioeconomic

^{1,2} Project Appraisal Document, Balochistan Livelihoods and Entrepreneurship Project, The World Bank

² Multidimensional Poverty in Pakistan, Planning commission of Pakistan 2015

³ Islam, K. "Socio-Economic and Context Analysis – Afghan Refugees in Pakistan". 2017, International Labour Organisation

conditions of the project districts. To address the potential negative environmental and social impacts of the development projects at an early stage, this environmental assessment is conducted.

Regulatory Review: Balochistan Environmental Protection Act 2012 being principle legislation of environmental protection in the Province envisages protection, improvement, conservation and rehabilitation with the help of legal action against polluters and ensure green awakening of communities. The discharge or emission of any effluent, waste, air pollutant or noise in an amount, concentration or level in excessive of the Environmental Quality Standards (EQS) specified by the Balochistan Environmental Protection Agency (BEPA) has been prohibited under the Act.

According to OP 4.01, the World Bank requires environmental assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision making. Depending on the project, a range EA of instruments are available to fulfil their requirements. For BLEP, specific sites, category of business enterprises and level of development has not been identified; therefore, a framework approach is adopted to prepare the environmental and social management tools. Environmental and Social Management Framework (ESMF) will outline the prerequisite environmental and social screening and, assessments that will be undertaken for business enterprises under the investment during planning and implementation stage. It identifies the potential generic negative environmental and social impacts, propose generic mitigation measures, provides basic screening criteria, list the type of safeguard instruments to be developed and formulates institutional, monitoring, reporting and documentation measures for environmental and social safeguards compliance. Based on available information on development sectors, World Bank Policies on Environmental Assessment OP/BP 4.01, Natural Habitats OP/BP 4.04, Forests OP/BP 4.36, Pest Management OP 4.09 and Involuntary Resettlement OP/BP 4.12 have been triggered. Being a social development project not proposing major infrastructure and industrial development, the environmental and social category has been assessed as **B** due to its low scale, localized, and reversible environmental and social impacts.

Baseline: Balochistan is the largest province of Pakistan, spreads over an area of 347,190 square kilometres, forming 43.6 per cent of the total area of Pakistan.⁴ The project area includes eight bordering districts Killa Abdullah, Killa Saifullah, Chagai, Sherani, Pishin, Mastung, Zhob and Nushki covering an area of 90,190 square kilometres with approximately 2.9 million populations. The climatic conditions vary with topography, in the plains and lower highlands, summers are very hot and winters are mild. While in the upper highlands, winters are chilly and summer temperatures are relatively low.⁵ The mean maximum temperature during the month of June is about 42°C and as low as 3°C in December.⁶ Project districts fall in sub-basin of Hamun-e-Lora, Hamun-e-Mashkel, Kadanai River, Pishin River and Zhob River. According to an estimate the total water potential of the province are 22.116 million acre feet (MAF). The focus of the groundwater exploitation in the province had been the three

⁴ http://www.balochistan.gov.pk/index.php?option=com_content&view=article&id=37&Itemid=783. Assessed on April 18 2018.

⁵ 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

⁶ 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

hydrological basins being densely populated and having greater potential for development. These are Pishin Lora Basin (PLB), Nari River Basin (NRB), and Zhob River Basin (ZRB) out of which two falls in project districts. Due to unplanned tube-wells installation and subsequent indiscriminate pumping of water for the last two and a half decades, the area is now facing problem of depleting groundwater table at the rate of more than four to five meters annually in many of its aquifers and hence, tube-well drying is a common phenomenon. Water table fluctuates between 130 and 470 feet in Killa Abdullah, 100 and 436 feet in Killa Saifullah, 114 and 515 feet in Mastung, 65 and 360 feet in Nushki-Chagai and between 46 and 210 feet in Zhob. There is water logged areas in the project districts with water table at 150 to 200 feet. About 0.1 million hectares of land in Balochistan is salt-affected. The province has also faced the longest drought from 1997 to 2007 depleting the water resources. According to the water quality study conducted by the World Bank, groundwater data of the project districts is also highly variable. Approximately 80 % of the drinking water samples revealed microbial contamination and high level of TDS making it unsafe for human consumption. Changing climatic conditions and the drought prevailing over the past several years has created acute water shortage and endangered the sustainability of this precious resource. Drinking water is scarce in the target districts and villagers have to travel 1.5 km on average to get drinking water. Except for Killa Abdullah district, women are mainly responsible for fetching water in all target districts. All districts were reported to be significantly affected by water scarcity⁷. The project area is also prone to natural disasters. Most recently, an earthquake of magnitude 4.8 Richter scale was recorded in Kalat and Quetta on 26th May 2012.

The northern part of the study area covering the districts Sherani, Zhob, Killa Saifullah, Killa Abdullah and Pishin represents partly the Dry Temperate Forest Eco-zone with elevation range from 7000 to 10,000 feet above sea level and having Juniper Forests with huge and ancient Juniper trees (*Juniperus macropoda*) and Chilghoza (*Pinus gerardiana*) trees. The Chilghoza Forests in the Suleman Mountain Range, with rocky outcrops and shallow mountain soils, are an important component of this eco-zone. The areas covering the Nushki and Chagai districts represent the Desert Eco-zone. Topographically, the area can be distinguished into four kinds of habitats; mountains/hills, gravel plains, sandy plains and seasonal streambeds. This eco-zone represents Sahara-o-Sindian type of vegetation which can tolerate salty environment. Loss of top soil due to wind and water erosion and depletion of soil seed bank have resulted in the replacement of palatable grass component by comparatively less palatable woody vegetation of *Artemisia sp.* and *Haloxylon sp.*⁸. There are nine protected areas including one national park, three wildlife sanctuaries, five game reserves and one private game reserve covering an area of 582,601 hectares. There are 15 notified forest covering an area of 397,014 acres of protected/reserve forest in the project districts. The IUCN Red List of threatened species lists 45 species of internationally threatened animals occurring in Pakistan. The selected eight districts of Balochistan represent total 294 faunal wildlife species including six amphibians, 55 reptiles, 198 birds and 35 mammals. Out of the total 294 wildlife species, 11 species are threatened with Egyptian Vulture being endangered while rests of the 10 species being Vulnerable and all having

⁷ Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & FATA

⁸ Mirza, Z. B., 2011. Ecosystems of Pakistan: Vol. 1; Eco zones of Pakistan. Urdu Science Board, 299 Upper Mall, Lahore, Pakistan. 247 pp.

decreasing population trend. The threatened species include six birds and five mammals. None of the amphibian and reptilian species is threatened in the selected eight districts in Balochistan.⁹ Game animals in the province have been on decline because of unsustainable hunting, food and furs. Universal netting and capitulating of birds has led to sharp decline of some species or even some of these became extinct. Habitat destruction due to land use changes is another cause of decline in wildlife. Amongst migratory birds the Hobart Bustard, Cranes and falcons have suffered to great extent¹⁰. Some of the animals found in Balochistan such as Leopard, Asiatic Cheetah, Wolf, Balochistan Black Bear, Chiltan Markhor and Straight Horned Markhor are listed in the International Red Data Book of IUCN.

The total population of eight project districts is 2.97 million with 2.37 million people residing in rural areas and 0.52 million in urban areas. According to a baseline survey conducted in the project districts in 2016,¹¹ poverty is significant, ranging from 33 percent in Killa Abdullah to 67 percent in Nushki. Over 90 percent of individuals aged 15-49 are unemployed and over 60 percent of those unemployed are illiterate. Daily wage labour is the main source of employment for majority of rural populations, accounting for over 50 percent of those employed. Less than 20 percent of the population between the ages of 15 to 64 has received vocational training.¹² The total number of schools in the project districts is 3,708 with 227,088 students enrolled, which is approximately 8 % of the total population. There are 10 government hospitals, 11 private hospitals, 39 RHCs, 150 BHUs, 60 TB clinics and 92 dispensaries serving in the project area. The infant mortality rate is as high as 88 deaths per 1000 births while the under-five mortality rate is as high as 112 deaths per 1,000 live births. The total cultivated area in the project districts is 3,940,926 hectares. The total livestock holding of the project district is 12,517,097 animals, majority of which is sheep and goats. There are no major industries in the project districts. Handicrafts, especially embroidery are popular amongst women, but are not commonly sold outside of the community. Major mines in the project area include Saindak and Reko Dik copper and gold mines in Chagai district. Over 300,000 Afghan refugees are living in the province of Balochistan, spread across rural and urban areas, as well as in 'refugee villages' or camps.¹³ Even-though refugees living in urban and rural areas are well integrated in the local economy, they do not have legal rights to own assets so their ability to engage in entrepreneurial activities is limited mainly to daily wage labour in the construction and agriculture sector and seasonal migration for income generation. Skilled refugees are well integrated at the community level. A study completed by International Labour Organisation and UNHCR¹⁴ in March 2017 explores livelihoods for refugees in Balochistan and finds that in hiring daily wage labour, host communities and prospective employers do not distinguish between refugees and non-refugees rather base their hiring decisions upon skillset.

Stakeholder Consultation: Stakeholder consultations have been carried out with local communities who are the direct beneficiaries of the project interventions and institutions who have an important role in implementation of the project interventions.

⁹ The IUCN Red List of Threatened Species. Version 2017-3. (www.iucnredlist.org). Downloaded on 08 June 2018.

¹⁰ Environmental Profile Balochistan, LARUS-IT, Enschede: Netherland, 1992

¹¹ Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, the World Bank.

¹² Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, the World Bank.

¹³ Solutions Strategy for Afghan Refugees (SSAR), UNHCR 2014 <http://www.unhcr.org/en-us/562a44639.pdf>

¹⁴ Islam, K. "Socio-Economic and Context Analysis – Afghan Refugees in Pakistan". 2017, International Labour Organisation

These consultations have revealed that the proposed project is considered to have a positive social impact by improving livelihood through creation of income generation enterprises. Eighty percent of institutional stakeholders expressed the concerns regarding water shortage and accessibility to the area. Security situation of the districts was also discussed, thus proposing to hire locals for the employment. The enterprises generating huge amount of wastes including tanneries and slaughter houses were discouraged. Respondents were of opinion that any activity that has potential to harm the natural environment shall be managed through proper mitigation measures. The communities also emphasized on training requirements of the locals on agriculture, livestock, handicraft, ecotourism, mines and mineral and forestry sectors. The use of pesticides and alternatives were also discussed. Information on those insecticides and pesticides banned due to their harmful effects shall be made available to the communities. They also expressed the need for availability of safe pesticides and fertilizers for agricultural and livestock. The social conflicts might arise therefore fair distribution of loans shall be ensured. The loan and grants shall be utilised in parallel to facilitate the communities. The project should also include the adaptation strategy for climate change as agricultural and livestock sector has already been impacted. The information shall be made available to the communities in a non-technical arrangement.

Impact Assessment: Sector specific impact assessment has been carried out to provide guidance on associated environmental and social impacts. The overall environmental and social impacts of each sector can be mitigated with the implementation arrangement focusing measures that reduce the impact to as low as possible. The impacts associated with each sector include air and water pollution, noise generation, drainage and safety hazards, increased use of pesticides and other agro-chemicals, water contamination especially surface water. The required mitigation and management measures proposed in the Environmental and Social Mitigation and Management Plan. Sector specific Environmental and Social Management Plans (ESMPs) will be prepared once the nature and type of the enterprise is confirmed during the implementation of the project. In addition, environmental and social impacts of anticipated small-scale construction activities (e.g. sheds, stores etc.) with reversible low impact have been discussed separately. Potential environmental impacts to be generated during the construction include dust and air emissions, water quality impacts due to discharge of untreated sewage, solid waste management impacts related to the construction materials and noise impacts due to the construction activities. The social impacts include community and workers health and safety, social conflicts and nuisance. However, the potential negative impacts of the construction are localized and short-term and only for the duration of construction.

Institutional Arrangements: The ESMF will be implemented under the overall supervision PMIU. The designated Project Director (PD) and Director Implementation will be the overall in-charge of the Project. They will engage, hire and delegate the supervisory responsibilities to the staff. For the efficient implementation and management of resettlement activities an Environment and Social Cell will be established within the PMIU. The Environment and Social Cell will be accountable and responsible for the implementation of the ESMF and preparation of sectoral ESMPs and RAPs. The Cell will implement, monitor and report ESMF through the Environmental Specialist, Social Safeguards Specialists and the Gender Specialist to be appointed by the PMIU. Monitoring and reporting (M&R) system will be established with continuous

process of collecting, collating and analysing information about the progress of ESMF and RPF implementation. With internal and external monitoring system will act as a tool for identifying strengths and weaknesses of the process. Periodic evaluation of the process and the outcomes will enable P&DD to identify deficiencies and implement corrective measures to achieve the desired goals and objectives of the ESMF.

Resettlement Policy Framework: Component 2 of the project, 'Promoting Enterprise Development and Livelihoods' may include the construction or rehabilitation of infrastructure, however at a small scale. Since these interventions will be through community groups and social mobilization, all possible efforts will be taken by the project to construct these facilities on land voluntarily donated by an individual, a group of individuals or the community as a whole. The Voluntary Land Donation Framework guides this process to ensure that due diligence will be conducted by the project before the implementation of any interventions/sub-projects that involve construction or require land. A sub-project requiring land on a permanent or temporary basis will be dropped if the VLD related criteria provided in this framework are not met. In addition, the Resettlement Policy Framework, in accordance with the World Bank Operational Policy on Involuntary Resettlement (OP 4.12), provides guidance on the preparation of a Resettlement Action Plan (RAP) in case land acquisition is required.

Grievance Redressal Mechanism: Timely and effective redress of stakeholder grievances will contribute to bringing sustainability in the operations of a project. In particular, it will help advocate the process of forming and strengthening relationships between project management and the stakeholder community groups and bridge any gaps to create a common understanding, helping the project management to efficiently operate in the area. To register and resolve the grievances of the community in this process, a Grievance Redress Mechanism (GRM) will be established. The village-level GRC will be established to engage village-level community members/leaders to participate in the decision-making processes and to have "voices" of the aggrieved person/communities in the grievance redress procedures. This will also enhance local ownership of the Project. Having members based in the village, the village-level GRC will be helpful in resolving the grievances quickly often without going into lengthy documentation. The local participation will further build local capacity in dispute resolution and decision-making and provide leadership support in the implementation of the Project. Cases which are not satisfactorily resolved or affected persons remain aggrieved, the case will then be forwarded to the Project-level GRC as the prime floor for resolution of the grievances. The purpose of the GRM is to facilitate the resolving of disputes without going into litigation. In this regard, the decision of the Project level GRC will be final within the GRM. However, if any disputant remains dissatisfied with the GRC outcome, the disputant can seek redress from a court of law.

Budget and Disclosure: An amount of PKR 93,540,000 has been allocated in the ESMF for enforcement and execution. Budget for mitigation measures and resettlement (if any) for each sub-project will be identified in sector specific ESMPs and RAPs. However, 2% of the total project intervention will be allocated for environmental and social safeguards. The budget will be spent on the ESMP and RPF formulation, implementation and monitoring. This ESMF and the RPF will be disclosed on the websites of Planning and Development Division, Government of Balochistan and on the World Bank site of Image Bank.

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Acronyms

AH	Affected Household
AP	Affected Person
BHC	Basic Health Unit
BLEP	Balochistan Livelihoods and Entrepreneurship Project
BOR	Board of Revenue
CFP	Coordination Focal Point
CLO	Community Liaison Officer
CRO	Community Relations Officer
DRD	District Revenue Department
EMA	External Monitoring Agency
EPA	Environmental Protection Agency
EQS	Environmental Quality Standards
ECoPs	Environmental Code of Practice
ESMP	Environmental and Social Management Plan
GIS	Geographic Information System
GoB	Government of Balochistan
Govt	Government
GPO	General Post Office
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
ILRP	Income and Livelihood Restoration Plan
IR	Involuntary Resettlement
IUCN	International Union for Conservation of Nature (IUCN)
Km	Kilometre
LAA	Land Acquisition Act
LAC	Land Acquisition Collector
M&R)	Monitoring and Reporting
MCH	Maternal Child Health Care
MIS	Management Information System
MM	Millimetre
MSL	Mean Sea Level
NGO	Non-governmental Organization

OP	Operational Procedure of World Bank
PAD	Project Appraisal Document
P&DD	Planning and Development Department
PC-1	Planning Commission Form 1
PCO	Public Call Office
PCU	Public Coordination Unit
PD	Project Director
PMIU	Project Management and Implementation Unit
PSLM	Pakistan Social and Living Measurement Survey
PTC	Pakistan Telecommunication Corporation
Pvt	Private
RAP	Resettlement Action Plan
RCD	Regional Cooperation for Development
RHC	Rural Health Centre
RPF	Resettlement Policy Framework
SEC	Stakeholder Engagement Committee
TB	Tuberculosis
TFR	Total Fertility Rate
UNDP	United Nations Development Program
UNFAO	United Nations Food and Agriculture Organization
WB	World Bank
CBPs	Community Based Platforms
BLEP	Balochistan Livelihood and Entrepreneurship Project
NGOs	Non-Government Organisations
ECs	Enterprise Clusters
EDPs	Enterprise Development Plans
LIPs	Livelihoods and Investment Plan
CIs	Community Institutions
LFs	Local Facilitators
TRPs	Technical Resource Persons
BDS	Business Development Services
PPP	Public-Private Partnership
NAVTEC	National Vocational and Technical Education Commission

1 Introduction

1.1 Background

Being one of the most populated (208 million) lower middle-income countries in the world, Pakistan has sustained its GDP growth rates from 3.7 percent in 2013 to 5.3 percent in 2017. This growth has been translated in the form of 22 percent raise in GDP per capita from approximately US\$ 1,333 in 2013 to US\$ 1,629 in 2017.¹⁵ However, the accelerated growth rates of the country do not commensurate in the province of Balochistan. According to 2014 poverty index estimation, each province has been ranked on its citizens living below the poverty line, which is defined as less than \$2 a day. Overall, in 2014 30 percent of the population of Pakistan lived below the poverty line as compared to 37 percent in 2010.² Balochistan has been ranked highest with 71.2 percent of population living below the poverty line. The proportion of poor in rural areas (84.6 %) is significantly higher than urban areas (37.7 %). Major districts of Balochistan exhibit significantly low social development and extremely high levels of poverty and deprivation. Over 90 percent of the individuals in the age cohort of 15-49 are unemployed and over 60 percent of those unemployed are illiterate. In the absence of basic facilities, the province has further dropped in terms of sustainability.¹⁶ Socio-economic context of Balochistan manifests itself in four main development challenges, requiring action on the 'hardware' and 'software' of growth and necessitating a multi-pronged strategy focusing on institutional reforms, promoting productive sectors and facilitating the informal sector at the grassroots and community level.

In addition to these challenges related to poverty and low access to jobs and skills training, parts of Balochistan are defined by their disproportionately high concentration of refugee populations. Pakistan had seen three major waves of refugees coming into the country from Afghanistan since the Soviet invasion of Afghanistan in 1979. While currently the number of Afghan refugees in Pakistan is estimated to be 1.35 million, at its peak, it is estimated, the provinces of KP and Balochistan hosted over 3.5 million refugees. According to a study by ILO and UNHCR¹⁷, almost 23 percent of Afghan refugees (approximately 318,000) in Pakistan are concentrated in six districts in Northern Balochistan. While originally concentrated in refugee camps, these refugees have, over the last decade, spread across the province and integrated with the non-refugee populations.

To ensure equitable development, particularly in the rural parts of the province Government of Pakistan plans to initiate Balochistan Livelihood and Entrepreneurship Project (BLEP) with Planning and Development Division Balochistan. The project aims to address poverty and unemployment in Balochistan through livelihood support and social development. World Bank will counter finance the major project intervention through a portion of loan and grant. BLEP aims to complement the World Bank's Country Partnership Strategy 2015-20, designed to contribute towards reducing

^{15,2} Project Appraisal Document, Balochistan Livelihoods and Entrepreneurship Project, The World Bank

¹⁶ Multidimensional Poverty in Pakistan, Planning commission of Pakistan 2015

¹⁷ Islam, K. "Socio-Economic and Context Analysis – Afghan Refugees in Pakistan". 2017, International Labour Organisation

poverty and enabling shared prosperity. BLEP has been reflected in the Public Sector Development Programme (PSDP) 2017-18 led by Government of Balochistan.

1.2 Balochistan Livelihood and Entrepreneurship Project

BLEP is an integrated service delivery and economic growth project, targeting rural and urban areas, addressing citizens' needs in a holistic manner. The project will be implemented in eight bordering districts of Balochistan, including Killa Abdullah, Killa Saifullah, Chagai, Sherani, Pishin, Mastung, Zhob and Nushki and, will benefit rural households to promote livelihoods through enterprise development and employment generation. The objective is to promote employment opportunities and sustainability of enterprises in select districts of Balochistan. The project will predominantly target communities based in areas affected by a protracted refugee situation. These districts have maximum numbers of Afghan refugees and are in the process of repatriation. The project is likely to gain benefits for the communities in selected districts, having reliance on enterprises related to various sectors including Agriculture, Livestock, Mines & Minerals, Handicrafts and Small Industries, Ecotourism and Forestry. In addition, the Project will have specific benefits for people living in these geographical locations through improved facilities development. The Project has three main components and will be implemented during the course of 5 years. It is co-financed by the World Bank and executed by Planning and Development (P&D) Department Balochistan.

1.3 Project Proponent

The proponent of BLEP is Planning and Development (P&D) Department Balochistan. The P&D Balochistan is a premier planning body in the province which formulates all development, planning policy matters and plans to execute the policy. Provincial Five Years Plans (FYP) contains development policy while annual Public Sector Development Programmes (PSDPs) are planned to implement FYP concerning various sectors of the economy. Small and medium range projects are accommodated in PSDP. There are eleven sections of P&D department Balochistan including an administration section and each section is headed by Chief of Section. The project planning, design and implementation is conducted through Foreign Aid Section in coordination with the World Bank.

1.4 Need for the ESMF/RPF

BLEP plans to finance interventions specifically under Component 2: Promoting Enterprise Development and Livelihoods including agricultural reforms, handicraft augmentation, mines and minerals trade, livestock expansion, ecotourism and forestry extension. In addition, small scale infrastructure development is also planned in these sectors to improve the livelihood of the target districts. Component 2 will enable communities to establish business enterprises yet to be identified in the five sectors of the economy. Development linked to establishment of these business enterprises may envisage potential negative impacts on physical, ecological and socioeconomic conditions of the project districts. To address the potential negative environmental and social impacts of the development projects at an early stage, a range of environmental assessment instruments are used by the World Bank. For BLEP, specific sites, category of business enterprises and level of development has not been identified; therefore, a framework approach is adopted to prepare the environmental and social management tools. Environmental and Social Management Framework (ESMF) will outline the

prerequisite environmental and social screening and, assessments that will be undertaken for business enterprises under the investment at planning and implementation stage. Sector specific ESMPs will be prepared once the nature and type of the enterprise is confirmed during the implementation of the project.

Based on available information on sectors of the project, World Bank Policies on Environmental Assessment OP/BP 4.01, Natural Habitats OP/BP 4.04, Forests OP/BP 4.36, Pest Management OP 4.09 and Involuntary Resettlement OP/BP 4.12 have been triggered. Being a social development project not proposing major infrastructure and industrial development, it has been assigned Category B due to its low scale, localized, and reversible environmental and social impacts. The applicability of the World Bank policies and details on sector specific environmental and social impacts and mitigations is included in the following sections.

1.5 ESMF Objectives

The objectives of ESMF are to:

- ❑ Identify legislations, regulations and guidelines relevant to BLEP community level interventions
- ❑ Assess the baseline conditions of physical, biological, socioeconomic and cultural aspects of selected project districts;
- ❑ Evaluate environmental and social impacts related to BLEP interventions and provides practical measures to mitigate the impacts;
- ❑ Outline Environmental and Social Management and Monitoring Framework that presents monitoring requirements for effective implementation of mitigation measures;
- ❑ Identify institutional arrangements required to implementation of RPF and ESMF;
- ❑ Develop a Resettlement Policy Framework to address land acquisition that may be required for the sub projects;
- ❑ Provide Physical Cultural Resources (PCR) requirements and guides the preparation of a Cultural Resources Management Plans where required;
- ❑ Describe training needs and specific reporting and documentation requirements; and proposes a third-party validation mechanism for ESMF.

1.6 Structure of the Report

This Environmental and Social Management Framework consists of 11 chapters. Chapter 1 introduces the project and the need for ESMF. Chapter 2 presents a review of national regulatory frameworks, World Bank Safeguard Policies and standards, environmental codes of practice and international conventions and agreements. Chapter 3 provides a detailed description of the project, its sub components with analysis of project alternatives. Chapter 4 is baseline with details on environmental and social settings of the project area. Chapter 5 presents details of stakeholder analysis and consultations conducted for the project including Stakeholders Consultation Framework for sub-projects. Chapter 6 describes the assessment of potential environmental and social impacts, proposed mitigation measures, Chapter 7 environmental and social management and monitoring framework along with screening

requirements for sub-projects. It outlines the institutional arrangements including roles and responsibilities for ESMF monitoring and implementation. Capacity development and training of project team and contractors for ESMF is also detailed in this section. Chapter 8 outlines the Resettlement Policy Framework for possible land acquisition and mechanism for voluntary land donation. Chapter 9 elaborates Grievance Redress Mechanism for stakeholders and communities. Chapter 10 presents the ESMF implementation budget. Chapter 11 represents disclosure requirements and Chapter 12 provides references to the report.

2 Regulatory Framework

This chapter presents a review of national and provincial regulatory frameworks and the World Bank's safeguard policies. These legislations and safeguard policies, and their relevance to the proposed project, are briefly discussed below.

2.1 Constitutional Provision on Environmental Protection

Prior 18th Amendment in the constitution of Pakistan, the legislative powers were with federal parliament and legislative assemblies of four provinces of Pakistan. If a particular legislation passed by the provincial assembly came into conflict with a law enacted by the national assembly, then according to constitution, the federal legislation was to prevail over provincial legislation to extend the inconsistency. The subject of environmental pollution and ecology were in Concurrent Legislative List of the constitution thus allowing both federal and provincial government to enact laws on this subject. However only federal government has enacted laws on environment and the provincial environmental institutions derived their power from federal law.

After the 18th amendment in 2010, the concurrent list has been abolished and a limited number of subjects on the list have been included in the federal legislative list, whereas, the provincial governments have been given powers to legislate on the subjects transferred to provinces. The provision of the 18th Amendment which has a direct impact on the subject of 'Environment' is section 101(3), whereby the Concurrent Legislative List and the entries thereto from 1 to 47 (both inclusive) have been omitted from the Fourth Schedule. The power to legislate and decide on the subject of "environmental pollution and ecology" now lies with the provincial government; however, climate change remains under federal jurisdiction. BLEP will be executed in Balochistan therefore the environmental regulations of Balochistan will be followed.

2.2 Environmental Assessment Regulations

The Pakistan Environmental Protection Act (PEPA) 1997 is the apex environmental law in the country, and provides for the protection, conservation, rehabilitation and improvement of the environment, for the prevention and control of pollution, and for promotion of sustainable development. After the 18th amendment, Government of Balochistan adopted PEPA 1997 with amendments naming Balochistan Environmental Protection Act 2012 that passed through the Balochistan Assembly in 2013. The powers of the federal and provincial Environmental Protection Agencies (EPAs), established under the Pakistan Environmental Protection Ordinance 1983, have also been considerably enhanced under this legislation and they have been given the power to conduct inquiries into possible breaches of environmental law either of their own accord, or upon the registration of a complaint. Balochistan Environmental Protection Agency is the governing body for implementation of the law.

2.2.1 Balochistan Environmental Protection Act 2012

According to Section 15 of the Act, no development program involving construction activities or any change to the physical environment can proceed without an Initial Environmental Examination (IEE) or an Environmental Impact Assessment (EIA), with both requiring approved by federal and provincial Environmental Protection Agencies

(EPAs). Section 15 of the Act states the provision is only applicable only to prescribed categories of projects, which are defined in the Pakistan Environmental Protection Agency Review of IEE and EIA Regulations (2000). Under these regulations projects are classified according to the expected degree of environmental impact. Project types listed in Schedule-I are potentially less damaging and only require IEE; those types listed in Schedule-II are potentially more damaging and requires an EIA. Balochistan Environmental Protection Act 2012 also establishes a Provincial Sustainable Development Fund and allows for protection and conservation of renewable resources, establishment of Environmental Tribunals and appointment of Environmental Magistrates.

2.2.2 Environmental Protection Agency Review of IEE & EIA Regulations, 2000

These Regulations define procedures for preparation, review and approval of environmental assessments has been adopted by Balochistan Environmental Protection Agency. The projects falling under any of the categories listed in Schedule-I of the regulation require preparation of Initial Environmental Examination (IEE) report, whereas those falling under categories listed in Schedule-II require preparation of detailed study, the Environmental Impact Assessment (EIA). The sub-projects in component 2 of BLEP requires construction and of facilities in urban and rural areas of the select districts, therefore, Annexure 1 IEE/EIA Regulation 2000 will be used for the screening of sub-project for IEE and EIA. If an IEE or EIA is conducted for sub-projects, it will be submitted to the Balochistan Environmental Protection Agency and shared with public by virtue of law. Therefore, disclosure requirements of both the Bank and BEPA 2012 will be fulfilled.

2.2.3 Environmental Quality Standards, 2000

The National Environmental Quality Standards (NEQS) first promulgated in 1993 and have been amended in 1995 and 2000. They have been revised and the latest NEQS were issued in 2010. According to the World Bank policy, compliance to all local statutory requirements is compulsory during project execution. NEQS have been adopted by Environmental Protection Agency Balochistan as Environmental Quality Standards (EQS) therefore, it will be followed for the project component 2. The EQS are attached as **Annexure 2**. The EQS include following:

- ❑ EQS for Ambient Air Quality– November 2010 state the Maximum allowable concentration of pollutants (9 parameters) in gaseous emissions from vehicle exhaust.
- ❑ EQS for Gaseous Emissions: Maximum allowable concentration of pollutants in gaseous emission from industrial sources.
- ❑ EQS for Drinking Water Quality – 2010 describe drinking water properties by outlining the defined physical and chemical parameters.
- ❑ National Environmental Quality Standards for Motor Vehicle Exhaust and Noise
- ❑ EQS for Noise – November 2010 states maximum allowable limit of noise arising from vehicles in decibels (dB) separately for day and night times.

- ❑ EQS for Municipal and Liquid Industrial Effluents state maximum allowable concentration of pollutants (32 parameters) in municipal and liquid industrial effluents discharged to inland waters, sewage treatment facilities, and the sea.

These standards apply in case of gaseous emissions, noise, vehicular emissions and liquid effluents discharged by construction and post construction activities of the sub-projects. Standards for ambient air quality will be used for compliance in case of air emissions from the construction and operations of the proposed sub-project causing changes in ambient air quality of the area. EQS for drinking water will be used for compliance during construction and operations. The proponent will comply with the standards through provision of clean drinking water to the employees. The detailed EQS are included in **Annexure 2**.

2.2.4 Environmental and Social Guidelines

Balochistan Environmental Protection Agency adopted a set of guidelines for the preparation of IEE and EIA report including the sector specific guidelines. The package of regulations, of which the guidelines form a part are included in BEPA, 2011. These guidelines are listed below:

- ❑ Guidelines for the Preparation and Review of Environmental Reports;
- ❑ Guidelines for Public Consultation;
- ❑ Guidelines for Sensitive and Critical Areas;
- ❑ Sectoral Guidelines

It is stated in the Balochistan Environmental Protection Agency Review of IEE and EIA Regulations, 2000, that the EIA or IEE must be prepared to the extent practicable in accordance with the above mentioned Guidelines. The ESMP to be prepared for the subprojects will broadly follow the above guidelines however compliance with the WB safeguard requirements would be mandatory.

2.3 Balochistan Forest Regulations of 1890

The Balochistan Forest Regulation 1890 governs the management of state forests in the public sector. Any woodland, permanent grazing ground or other land that is government property can be declared a state forest. Acts such as setting fire, felling, tapping or clearing for cultivation are prohibited on state forests except when permission of the government or a forest officer authorized by the government is sought and granted. These offences are punishable with fines. The Government may also declare any trees or any specific class of trees on any land that is at the disposal of the government to be reserved trees upon notification. Felling, marking, lopping or injuring such reserved trees is prohibited and punishable with fines. The project interventions will be prohibited in reserve forest of Balochistan.

2.4 Balochistan Forest and Wildlife Act 2014

Section 9 of the act states all wild animals including free ranging or captive, tamed or untamed, found within territorial jurisdiction of the Province shall be deemed to be the property of Government. Section 10 on protected animals states the protection of wild animals included in Schedule-III. These wild animals shall not be hunted, killed, trapped, captured, traded, possessed or kept as pets except as provided specifically otherwise.

Game Animals Protected in Certain Protected Areas Section 11 prohibits hunting, trapping and capturing of game animals included in Schedule I residing in a Strict Nature Reserve, Wildlife Sanctuary, National Park, Natural Heritage Site and the core zone of a Biosphere Reserve are prohibited. Section 62 of the Balochistan Wildlife (Protection, Preservation, Conservation and Management) Act 2014 provides that the Government should promote sequestration of carbon by effective management of Protected Areas and vegetation in the outer countryside to stabilize and reduce greenhouse gas concentrations in the atmosphere.¹⁸ The project interventions will be prohibited in protected areas of Balochistan.

2.5 Protection of Trees and Brushwood Act, 1949

This Act prohibits cutting or lopping of trees and brushwood without permission of the Forest Department. The Forest Department will be approached for permission to cut trees for the selected sub-project sites during the implementation of the project.

2.6 The Antiquities Act (1975)

It ensures the protection of Pakistan's cultural resources. The Act defines "antiquities" as ancient products of human activity, historical sites, or sites of anthropological or cultural interest, national monuments, etc. The Act is designed to protect these antiquities from destruction, theft, negligence, unlawful excavation, trade, and export. The law prohibits new construction in the proximity of a protected antiquity and empowers the GOP to prohibit excavation in any area that may contain articles of archaeological significance. Under the Act, the project proponents are obligated to ensure that no activity is undertaken in the proximity of a protected antiquity, report to the Department of Archaeology, GOP, any archaeological discovery made during the project.

2.7 The Public Health (Emergency Provision) Act 1954 read with West Pakistan Epidemic Control Act 1958

These two laws cover the presentation and spread of human diseases, safeguarding the public health and providing and maintaining adequate medical services and other services essential to the health of the communities in the project area.

2.8 Explosives Act 1884

Under the Explosives Act 1884, the project contractors are bound by regulation on properly and securely handling, transporting and using explosive quarrying, blasting and other purposes. License will be required for the manufacture, possession, use, sale, transport, import and export of explosives. The act empowers the Government to prohibit the manufacture, possession, use, sale, transport, import or export of especially dangerous explosives. The act prohibits manufacture, possession sale to use, transport, import and export of explosives by young persons and certain other persons. It also empowers to make rules conferring powers of inspection, search, seizure, detention and removal.

¹⁸ The Balochistan Wildlife (Protection, Preservation, Conservation and Management) Act 2014, No.PAB/Legis: V(15) 2014-231

2.9 Labour Law Constitutional Provision

The Constitution of Pakistan contains a range of provisions with regards to labour rights found in Part II: Fundamental Rights and Principles of Policy.

Article 11 of the Constitution prohibits all forms of slavery, forced labour and child labour;

Article 17 provides for a fundamental right to exercise the freedom of association and the right to form unions;

Article 18 proscribes the right of its citizens to enter upon any lawful profession or occupation and to conduct any lawful trade or business;

Article 25 lays down the right to equality before the law and prohibition of discrimination on the grounds of sex alone;

Article 37(e) makes provision for securing just and humane conditions of work, ensuring that children and women are not employed in vocations unsuited to their age or sex, and for maternity benefits for women in employment.

The acts related to labour laws are Factories Act 1934, Employment of Child Act, 1991 are the most relevant to the project.

2.10 Employment of Child Act, 1991

Article 11(3) of the constitution of Pakistan prohibits employment of children below the age of 14 years in any factory, mine, or any other hazardous employment. In accordance with this article, the ECA 1991 disallows such child labour in the country. The ECA defines a child to mean a person who has not completed his/her fourteenth year of age. The ECA states that no child shall be employed or permitted to work in any of the occupations set forth in the ECA (such as transport sector, railways, construction, and ports) or in any workshop wherein any of the processes defined in the act is carried out.

2.11 Motor Vehicles Ordinance, 1965, and Rules, 1969

The Motor Vehicles Ordinance, 1965, was extended in 1978, to the whole of Pakistan. The ordinance deals with the powers of motor vehicle licensing authorities and empowers the Road Transport Corporation to regulate traffic rules, vehicle speed and weight limits, and vehicle use; to erect traffic signs; and to identify the specific duties of drivers in the case of accidents. It also describes the powers of police officers to check and penalize traffic offenders at the provincial level. At the same time, the ordinance also empowers the Regional Transport Authority to operate as a quasi-judicial body at the district level to monitor road transport, licensing requirements, and compensations for death or injury to passengers on public carriers.

2.12 Pakistan Penal Code, 1860

The Pakistan Penal Code deals with offences where public or private property and/or human lives are affected due to the intentional or accidental misconduct of an individual or body of people. In the context of environment, the Penal Code empowers the local authorities to control noise, noxious emissions and disposal of effluents. Chapter XIV, Section 268 to 291 of PPC deals with the offences affecting the public health, safety, convenience, decency and morals. A Person may be guilty of public nuisance if his act or omission causes common injury, danger or annoyance to the public or results in spread

of diseases dangerous to life. The section also deals with environmental pollution. Provisions under this Act relating to environment are no longer being enforced after promulgation of the Pakistan Environmental Protection Act, 1997. The NEQS enforced by the EPAs supersede the application of this legislation on industries and municipalities. The Penal Code, however, can provide a basis for the proponent to coordinate its activities with the local authorities to ensure that its construction activities do not become a cause of public nuisance or inconvenience. Pollution offences can still be tried under the relevant sections of Pakistan Penal Code, 1860, as they have not been specifically repealed by a subsequent legislation.

2.13 Building Code of Pakistan (Seismic Provisions-2007)

The Pakistan Engineering Council governs the application of Building Code of Pakistan (Seismic Provisions-2007). Prior to the start of construction, the proposed sub project will take design approval from PEC. The obligates following;

- ❑ The provisions of the Building Code of Pakistan (Seismic Provisions-2007) shall apply for engineering design of buildings, like structures and related components.
- ❑ Construction of buildings in violation of the Building Code shall be considered as violation of professional engineering work as specified under clause (XXV) of section 2 of the Act.
- ❑ The project will comply with the seismic provision according to zones during building design.

2.14 Provincial Local Government Ordinances, 2001

These ordinances, issued following the devolution process, establish regulations for land use, the conservation of natural vegetation, air, water, and land pollution, the disposal of solid waste and wastewater effluents, as well as matters related to public health and safety. The provincial government ordinance will be applicable for the sub-projects under the investment.

2.15 Factories Act, 1934

The clauses relevant to the project are those that concern the health, safety and welfare of workers, disposal of solid waste and effluent, and damage to private and public property. The Factories Act also provides regulations for handling and disposing of toxic and hazardous materials. Given that construction activity is classified as 'industry', these regulations will be applicable to the project contractors.

2.16 Canal and Drainage Ordinance, 1980 (amended in 2000 and 2006)

The Balochistan Canal and Drainage Ordinance, entitles the Provincial government to use and control, for public purposes, water of all rivers and streams flowing in natural channels, of lakes, sub-soil and other natural collection of still water. The Ordinance empowers the government to define, in identified areas, a cropping pattern for the purpose of controlling water logging and soil salinity. The government may also impose a ban on cultivation of certain crops in lands situated outside the canal command area and can, in the event of any violation, impose penalties in terms of punishment and fine. The government may also compel land tenants, occupiers or owners to grow particular crop in order to comply with the designed parameters for concerned canal systems or

any good reason to control and save water. The latest amendment (2006) - the Irrigation Manual Order (2006) guides on irrigation system and water management.

2.17 Balochistan Irrigation and Drainage Authority Act, 1997

The Balochistan Irrigation and Drainage Authority (BIDA) Act of 1997 transformed the Irrigation wing of the Irrigation Department into an autonomous Authority for development and management of irrigation, drainage and flood control infrastructure. BIDA exercises powers under the Balochistan Canal and Drainage Ordinance and the Balochistan Groundwater Rights Administration Ordinance to formulate and implement policy guidelines regarding water management and use. It is responsible for developing a sustainable irrigation and drainage network through equitable distribution of irrigation water to improve the efficiency of water utilization while minimizing drainage surplus. BLEP will correspond with BIDA (1997) regulations, especially for organizing and registering farmer organizations. The regulations for registration of farmer organizations were approved and issued in 2000.

2.18 Balochistan Water and Sanitation Authority Act, 1989

This Act provides for the establishment of the Water and Sanitation Authority. The Authority is responsible for providing an adequate supply of potable water and for eliminating water-borne diseases through the provision of effective sewerage and sanitation systems. The Act defines the composition of the Authority and its powers and functions. The Authority is empowered to issue licences, set charges and recover revenues for the services provided, authorize the discharge of industrial waste into sewerage or sanitation systems, and protect water resources and water supply systems from sources of contamination or pollution. BLEP will follow the act while carrying out enterprise development for communities. The communities/ enterprises will be regulated for discharge of polluted water into the existing drainage system or waterbodies where applicable.

2.19 Community Irrigation Farmers Organization Regulation, 2000

Despite the prevalence of minor irrigation schemes in Balochistan, there was no appropriate legislation for registration of Farmers' Organizations (FOs) except the Water Users Association Ordinance of 1981 that provided a framework for improving watercourses in canal command areas. The Community Irrigation Farmers' Organization Regulations provides a legal status for entities that may be established on community irrigation schemes, outside the Indus basin irrigation system, and which are responsible for operation and monitoring of community irrigation schemes. For interventions in agriculture the regulation will be followed.

2.20 Water Users Association Ordinance, 1981

The Balochistan Water Users Association (WUA) Ordinance provides for the formation, operation and promotion of WUAs in the province. The Ordinance makes it obligatory for farmers to organize themselves into WUAs for collective action related to watercourse rehabilitation and its systematic maintenance. The main shortcoming of this Ordinance is that it is applicable only to WUAs in canal-irrigated systems and not small-scale irrigation schemes operated by farmer or community-based organizations. Local WUAs will be engaged according to the law for agricultural interventions.

2.21 Balochistan Agricultural Produce Markets Act, 1991

The Balochistan Agricultural Produce Markets Act, 1991 provides better regulations of purchase and sale of agricultural produce and establishment of markets for agricultural produce in the Province. The Government may, by notification, declare an area to be a notified market area and shall exercise control over the purchase and sale of such agricultural produce. By the same measure of notification, the Government shall establish a market committee for every notified market area. The Act further provides for the establishment of Market Committee Funds. The Government may direct that all or any of the disputes, arising in a notified market area, shall be referred to a Board of Arbitrators constituted under this Act. The Act contains also penalty provisions and provisions of miscellaneous nature. For business enterprise development related to agriculture the law will be used as guidance.

2.22 Groundwater Rights Administration Ordinance, 1978

The Groundwater Administration Ordinance (1978, amended 2000) regulates groundwater use and administers the rights of various persons at the provincial and district levels. A Provincial Water Board was constituted for administering groundwater rights and to establish policies for conservation and development of groundwater. The Ordinance established the procedures and framework within the district level administration to issue permits for the development of new *Kareze*, dug wells and tube wells by the District Water Committee. This committee also has the right to stop groundwater extraction by unauthorized persons. The Ordinance provides a legal and institutional framework for resource management by the local administration together with tribal leaders, allowing flexibility in determining rules for groundwater use as a common property. The main shortcoming of Ordinance has been the lack of involvement of local communities and poor overall enforcement by District Water Committees. The proposed Project will need to take account of the Groundwater Administration Ordinance (1978, amended 2000).

2.23 Balochistan Culture Heritage Preservation Act, 2010

This Act empowers the Provincial Government to protect cultural heritage in the Province. It empowers the government to compulsorily acquire any heritage that could be lost to various threats. It states punitive action for the wilful destruction of protected cultural heritage. ESMF will identify the cultural heritage sites within the project districts and the project interventions will not be allowed that may cause damage to these resources.

2.24 Constitutional Provision on Land Acquisition

Property rights are enshrined in the Constitution of Pakistan. Articles 23, 24, 172 and 173 deals with private property rights. Article 23 lays down the fundamental freedom to acquire land and dispose of property whereas Article 24 provides for the acquisition of private property. Article 172 states that 'any property which has no rightful owner shall, if located in a Province, vest in the Government of that province and in every other case, in the Federal Government' thereby providing that any property that is not owned by private individuals is owned by the Government. Furthermore, Article 173 states that the Government can grant, sell, dispose or mortgage any property that vests in them.

Article 24 clearly addresses the protection of property rights that it includes “no person shall be compulsorily deprived of his property save in accordance with law”¹⁹ and “No property shall be compulsorily acquired or taken possession of save for a public purpose, and save by the authority of law which provides for compensation, therefore, and either fixes the amount of compensation or specifies the principles on and the manner in which compensation is to be determined and given.”²⁰ Further, Article 4 (sub-clause/a of 1) reiterates the legislative right of the people by stating that: “No action detrimental to the life, liberty, body, reputation or property of any person shall be taken except in accordance with law”²¹.

The Resettlement Policy of Pakistan²² which recommends the preparation of a Resettlement Action Plan (RAP) when more than 200 people are displaced has not yet received approval. This draft policy embodies principles which not only cover affected persons but also ensure an equitable and uniform treatment of resettlement issues. The Draft Resettlement Policy addresses the aspects not incorporated in LAA and recommends the application of these wherever any public sector or private development project affects people with respect to their land and property, families or communities, even without physical displacement.

The Government of Pakistan has also drafted legislation on resettlement titled "Project Implementation and Resettlement Ordinance of the Affected Persons."²³ The objective of this draft ordinance is to give legal support for enactment to the provincial and local governments. It establishes that the resettlement of involuntarily displaced persons should be done as a matter of right and that the ‘affected persons’ shall be accepted as a special category. The ordinance seeks to ensure full transparency and accountability in all resettlement activities. The project execution will follow the constitutional provision and associated regulation.

2.25 Land Acquisition Act 1894

The national law governing land acquisition is the LAA 1894 and successive amendments to it. The LAA 1894 regulates the land acquisition process and enables the government to acquire private land for public purposes. It sets out the procedure and rules for land acquisition and compensating the owners, as well as for compensating owners for damage caused to their properties, crops and trees affected by projects. The law comprises of 55 sections dealing with area notifications, surveys, acquisition, compensation, appointment awards, disputes resolution, penalties and exemptions. Under section 23 of LAA 1894 and its amendments, in addition to the market-value of the land a sum of fifteen percent amount as compulsory acquisition surcharge is also paid to the affected person, if the acquisition has been made on a public purpose and a sum of twenty-five percent on such market-value if the acquisition has been made for a Company. The Affected Persons (APs), if not satisfied, can go to the Court of Law to contest the compensation award of the Land Acquisition Collector (LAC).

¹⁹ National Assembly of Pakistan, *Constitution of the Islamic Republic of Pakistan* (1973).

²⁰ Ibid.

²¹ Ibid.

²² Govt of Pakistan, *Draft National Resettlement Policy* prepared by Ministry of Environment, Local Government and Rural Development in March, 2002

²³ Pakistan Environmental Protection Agency, "Project Implementation and Resettlement of Affected persons Ordinance 2001" (Draft), Ministry of Environment, Local Government and Rural Development, Government of Pakistan.

Furthermore, from operational point of view, the LAA 1894 is a provincial law and each province has its own version and interpretation of this law, mostly procedural in nature. Also, the LAA 1894 is unclear about the issue of customary rights over lands. These differences lead to different dispensations in compensation and resettlement packages for the affected persons. Furthermore, the LAA 1894 provisions are inadequate on many grounds – for example, (i) lack of attention to displacement and resettlement, (ii) low and delayed compensation, (iii) no assistance to non-titled persons; and (iv) no provision for post-resettlement support and assistance – and thus incomplete to deal comprehensively with project impacts. The various sections relating to the land acquisition are briefly discussed in **Table 2.1** in 2001 and 2002, government of Pakistan proposed "Draft Project Implementation and Resettlement of Affected Persons Ordinance 2001" and "Draft National Resettlement Policy (NRP), 2002". However, both the drafts haven't been approved by the cabinet and Parliament so that not applicable to practice at present. The subprojects to be implemented may require acquisition of land. Efforts will be made to acquire such small pieces of land either through voluntary donation only if it would not adversely impact livelihood of donor and require less than 10% land owned by that person or through commercial transaction (willing buyer – willing seller) basis. BLEP will encourage voluntary land donation and in case of acquisition LAA will be followed along with Bank policies.

Table 2.1: Key Feature of the LAA 1894

Section	Actions [Person Responsible]	Purpose and Effect	Citizens' Rights	Comments
4	Publication in the official gazette of a notification that a "land in any locality is needed or is likely to be needed for any public purpose or for a Company" [Collector] Public notice of the substance of such notification at convenient places in the said locality [Collector]	Allows preliminary investigation. In affect it demonstrates the interest of the government that the "land in any locality is needed or is likely to be needed for any public purpose or for a Company" Allows the Collector to authorize persons to enter, and where necessary, clear the land to: survey the land; undertake soil and other studies for determining the suitability of the land; measure land and demarcate boundaries by placing markers.	Before entering any building or other enclosed structure a 7-day notice shall be given to the occupier Any damage done to assets during the investigation shall be compensated	Publication of Section 4 notice only allows initiating of the preliminary investigation. It may result in identification of specific land but is not necessary.
5 and 5A	Publication in the official gazette by the government a) the intention of the government that any particular land included in Section 4 notification is needed for public purposes or for a Company, b) the administrative location of the land, c) the purpose of land acquisition, d) its approximate area, and e) location where the development plan for the land, if required, is available for public inspection, if required, [DC, if land required for public purposes or the provincial government if land	Notifies the intention of the government to acquire land for the particular purpose in order to give opportunity to the interested persons (persons who would be entitled to claim an interest in compensation if the land were acquired) to file an objection to the land acquisition. The objection can be filed	The right to review the plan The right to object to the plan The right to be heard in person or through pleader	The objection raised by the interested persons are heard by the Collectors and the final decision are taken by the Deputy Commissioner The declaration under Section 5 is for seeking comments and from the public and does not declares a firm intention on the part

Section	Actions [Person Responsible]	Purpose and Effect	Citizens' Rights	Comments
	required for a Company] Public notice of the substance of such notification at convenient places in the said locality Collector	within 30 days.		of the government.
6	The Collector, if satisfied after reviewing the report made under section 5–A, subsection (2), will make a declaration in the official Gazette with conclusive evidence, stating that particular land is required for public/private purpose. The declaration will include the location of the land, the purpose and its approximate area. The declaration shall be made only after ensuring that the compensation is to be paid by the company.	Provides the declaration from the collector for the purchase of required land. Declaration is published and communicated to the public in large to notify the acquisition of land including its location, area and purpose.	The right to know about the purchase of land for certain purpose.	The declaration can only be made after the compensation after ensuring the purpose of the land acquisition.
7	After declaration under Section 6-Collector, to take order for the acquisition of the land.	Official orders are given directing by the Collector, to initiate the formal land acquisition process.		
8	If the required land is not demarcated under section 4, the Collector, will give orders to mark, measure and plan out the required land.	Demarcation of required land as per the exact requirement of the project.	Please see citizen rights of section 4 of this document.	Publication of Section 4 notice only allows initiating of the preliminary investigation. However, the demarcation of land is necessary under section 8.
9	The Collector to issue public notice at convenient places on or near the land to show intentions for acquiring required land and inviting to file claims for compensation, objections to measurements etc., indicating date, time and place for all the land owners, indicating such date not earlier than 15 days. The Collector also to serve notice, by post, to the occupier or to the known land owners (if any), residing within the revenue district or elsewhere. The Collector shall also serve notice, not less than 15 days prior to the date fixed under sub–section (2) of section 9, to the land owners about the inquiry to be held under section 11 for determination of claims and objections.	To inform the land owners and public at large, well ahead the time, about the acquisition of the demarcated land to ensure that interested persons are given sufficient time to object or claim.	The right to know about the purpose behind the purchase of the demarcated land. The right to know well ahead of time so they can register their objections/claims in time.	The public notice shall only be issued after the demarcation of required land.
10	The collector will also require and send a notice to any other interested person (co–proprietor, sub–proprietor, mortgagee, tenant or otherwise) with interest/claim pertaining to the required land. Any person claiming any interest under this section or section 9 will	To ensure that there are no financial discrepancies left unaddressed during the process of land acquisition and every person associated with the land is duly informed and their	The right of every interested person, associated with the land to be acquired, to know that the land is required by the government for some company so that they can claim their	

Section	Actions [Person Responsible]	Purpose and Effect	Citizens' Rights	Comments
	be bound to do so within the meaning of section 175 and 176 of Pakistan Penal Code.	objection/claims are appropriately addressed.	interests in time.	
11	On the fixed date, the Collector to enquire into the claims and objections of interested persons with regard to measurements made under section 8, value of the land (at the date of the publication of the notification under section 4, sub-section (1) and respective claims. The Collector can make an award (under his jurisdictions) of true area of the land, compensation which in his opinion should be allowed for the land and the distribution of the compensation among all the known or believed to be interested in the land, whether they have appeared before him or not.	To determine the actual land owners and precise measurements of the required land. This section also ensures that the compensation paid is true representation of the value of land. To ensure that the compensation is fairly distributed among all the owners of the land.	The right to object on land ownership, measurement of land, price valuation of land and distribution of compensation among the legal owners of the required land.	The enquiries shall be conducted on the fixed date. Any change in date due to unforeseen and unavoidable circumstances should be communicated to the interested persons well ahead the scheduled date and time and rescheduled in compliance with the time period of 15 days as mentioned in the section 9 of this act.
12	The award filed in the Collector's office shall be deemed conclusive, whether the interested persons have appeared before the Collector or not. The Collector shall issue immediate notice of the award to the land owners whether they have appeared personally or by their representatives when the award is made.	To avoid potential future conflicts between the government and the owners of the land. This ensures that the decision made by the collector is final. To convey complete information in a timely manner to the land owners. This section ensures that the land owners have complete information on the award irrespective of their presence in Collector's office.	They are communicated the award details whether they appear in Collector's office or not.	
12 –A	The Collector can rectify any mistake (typographical, arithmetical errors) in the award by his own motion or on the application of any of the parties.	To ensure that there are no errors or mistakes in the award or the assessment of the land. This ensures that the measurement and valuation of the land is done justly.	If a mistake takes place in valuation of measurement of land, the citizen have a right to appeal to the Collector for the rectification of the error.	
13	The Collector may conduct or discontinue and reschedule the enquiry for any reason, any day/time fixed by him.	To implement check and balance on the system. This ensures sense of responsibility on the government officers.	The citizens have a right to appeal to the collector if they feel they have been treated unfairly by the government officers or the system.	
14	The Collector is empowered by this section to call, and enforce the attendance of witnesses, including the interested parties or any of them to produce the documents by the same means, and in the same manner as provided the case of a	To avoid future conflicts and increase transparency in the land acquisition process. To ensure that only the rightful legal owners	This section ensures that no citizens are treated unfairly during the acquisition process.	

Section	Actions [Person Responsible]	Purpose and Effect	Citizens' Rights	Comments
	Civil Court under the Code of Civil Procedures.	who have proper documents are paid the award and no illegal claims are entertained.		
15	The Collector shall be guided by section 23 and 24 in determining compensation.		The right to know about the matters which are included and excluded during the process undertaken to determine compensations.	Section 23 covers the matters to be considered in determining compensations while section 24 covers those matters which are to be neglected during determination of compensation.
16	Under this section, the collector may take possession of the land, after the compensation paid to the owner of the land or deposited in the Civil Court in his name by the acquisition authority and the required land, shall then be granted to the government without any further claim.	To ensure smooth transfer of land rights from the owner to the acquisition authority. This gives security to the acquiring authority that once the award is paid in full, the Collector will take the possession of the land.	The right to receive compensation from the [Collector] against the claimed land.	The required land, under this act, is finally transferred to the government. The acquisition process, limited only to the transfer of land, completes at this section. The government can then hand over the land to the company which wishes to develop it for public purposes.

2.26 World Bank Safeguard Policies

The development objectives of the World Bank safeguard policies are based on sustainability, transparency, fairness, accountability, governance, informed decision making, rights, participation and meaningful consultation for investment projects financed by the World Bank. These policies are build on *do not harm: protect people and environment from adverse impacts, do good: enhance social equity and promote environmental sustainability, Reduce and manage risk for the Client and for the WB and Respond to a world-wide constituency*. The overarching concept of the safeguard policies emphasized on to the following aspects; avoid negative impacts where possible; otherwise minimize, reduce, mitigate, compensate; identify and support sustainable approaches and environmental & social benefits; match level of review, mitigation and oversight to level of risk and impacts; inform the public and enable people to participate in decisions which affect them; integrate environmental and social issues into project identification, design and implementation stages and Strengthen Borrower/implementer capacity. Among total twelve safeguard policies, there are six environmental i.e. Environmental Assessment (OP 4.01), Natural Habitats (OP 4.04), Forests (OP 4.36), Pest Management (OP 4.09), Physical Cultural Resources (OP 4.11), Safety of Dams (OP 4.37), wherease two social i.e Indigenous Peoples (OP 4.10), Involuntary Resettlement (OP 4.12) and two legal i.e. Projects on International Waterways (OP 7.50), Projects in Disputed Areas (OP 7.60) policies with theoir detailed Bank procedures can be found on the World Bank website. The disclosure and access to information policy is applicble to all investment projects and programs funded by the World Bank.

Table 2.2 provides a summary of the World Bank Policies, their applicability to this project and proposed action plans.

Table 2.2: World Bank Safeguard Policies Action Plan

World Bank Safeguard Policy	Triggered?	Action Plan
OP 4.01 Environmental Assessment	Yes	The proposed project may consist of activities which can potentially have environmental and social consequences, hence the policy is triggered and this ESMF instrument has been developed.
OP 4.04 Natural Habitats	Yes	This OP is triggered to support the protection, maintenance and rehabilitation of natural habitats and their functions.
OP 4.09 Pest Management	Yes	This OP is triggered for the agriculture sector. The balanced and reduced use of pesticides will be part of project activities. Pest and pesticide management issues relevant to the project have been addressed in the ESMF. The sectoral ESMP will include the preparation of a specific Integrated Pest Management Plan (IPMP)
OP 4.10 Indigenous Peoples	No	This OP is not triggered as there are no known indigenous people in the project area
OP 4.11 Physical and Cultural Resources	No	This OP is not triggered as project interventions will not be carried out in or near notified archaeological, physical or cultural heritage sites and monuments of Balochistan listed in the ESMF baseline. However, chance find remains a possibility which will be addressed in this ESMF
OP 4.12 Involuntary Resettlement	Yes	This OP is triggered as project interventions may require land from public or private land holders. Voluntary land donation will be prioritised. A Voluntary Land Donation Framework and Resettlement Policy Framework has been prepared as part of this ESMF
OP 4.36 Forestry	Yes	This OP is triggered. The project may support interventions in the forestry sector. Rangelands are also classified as forest area by the Balochistan Forest Department. However, project activities will be small scale community based enterprise development interventions that are highly unlikely to result in the significant conversion or degradation critical forest areas. To address this OP, the ESMF will provide a mitigation approach for interventions related to forestry
OP 4.37 Safety of Dams	No	This OP is not triggered since the proposed project does not involve construction of dams.
Projects on International Waterways (OP 7.50)	No	This OP is not triggered since the proposed project interventions are not located on international waterways
Projects in Disputed Areas (OP 7.60)	No	This OP is not triggered since the proposed project interventions are not located on any disputed and conflicting areas

2.26.1 OP 4.01 Environmental Assessment

The World Bank requires environmental assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus

to improve decision making. The OP defines the EA process and various types of the EA instruments. Component 2 of BLEP proposes enterprise development in five sectors including Livestock, Agriculture, Mines and Minerals, Handicrafts and Industry, Ecotourism and Forestry that may potentially cause negative environmental and social impacts. Most of these impacts are likely to be small scale, localized, and reversible in nature. This project is classified as “Category B” with partial assessment per the WB safeguards category. Since the exact nature and locations of the proposed business enterprises are not identified and the project is not likely to finance large scale infrastructure development, an ESMF has been prepared in accordance with OP 4.01

The OP 4.01 also defines ESMF as “An instrument that examines the issues and impacts associated when a project consists of a program and/or series of sub-projects, and the impacts cannot be determined until the program or sub-project details have been identified. The ESMF sets out the principles, rules, guidelines and procedures to assess the environmental and social impacts. It contains measures and plans to reduce, mitigate and/or offset adverse impacts and enhance positive impacts, provisions for estimating and budgeting the costs of such measures, and information on the agency or agencies responsible for addressing project impacts.

Since the activities under the project would be small-scale interventions such as loans, trainings and some small-scale construction, the level of environmental and social impacts is likely to be low to moderate. This ESMF presents checklists designed to identify these potential impacts, and direct communities and project teams to practical ways of avoiding or mitigating them. If project screening used by implementing agencies finds that more detailed planning work is required, Environmental and Social Management Plans (ESMPs) may be prepared for each sector.

The proposed project may consist of activities which can potentially have environmental and social consequences, hence the **policy is triggered** and this ESMF instrument has been developed.

2.26.2 OP 4.04 Natural Habitats

The conservation of natural habitats, like other measures that protect and enhance the environment, is essential for long-term sustainable development. The Bank therefore supports the protection, maintenance, and rehabilitation of natural habitats and their functions. The degradation of a critical natural habitat is defined as the modification of a natural habitat in a manner that substantially reduces the habitat’s ability to maintain viable populations of its native species. There is the presence of fragile ecosystems such as protected forests in the project districts. Moreover, the project may support enterprises related to eco-tourism and forestry. There is the chance that beneficiaries may want to conduct project supported livelihood activities within or near sensitive habitats. This, ESMF identifies the ecologically sensitive zones and protected areas present in the project districts. These zones will be assessed in each district prior to execution through sectoral ESMPs.

This OP **is triggered** to support the protection, maintenance and rehabilitation of natural habitats and their functions.

2.26.3 OP 4.09 Pest Management

The objective of this OP is to support a strategy that promotes the use of biological or environmental control methods and reduces reliance on synthetic chemical pesticides. As the project aims to improve and enhance agricultural activity, there is a possibility that use of chemical fertilizers and pesticides will increase.

This OP **is triggered** for the agriculture sector. The balanced and reduced use of pesticides will be part of project activities. Pest and pesticide management issues relevant to the project have been addressed in the ESMF. The sectoral ESMP will include the preparation of a specific Integrated Pest Management Plan (IPMP).

2.26.4 OP 4.10 Indigenous Peoples

The OP defines the process to be followed if the project affects indigenous people. If any indigenous groups are identified by the Social Assessment, an Indigenous Peoples Planning Framework (IPPF) will be prepared, cleared by the Bank and implemented.

This OP **is not triggered** as there are no known indigenous people in the project area

2.26.5 OP 4.11 Physical and Cultural Resources

This policy safeguards archaeological, physical or cultural heritage sites and assists in their preservation, and avoids their elimination.

This OP **is not triggered** as project interventions will not be carried out in or near notified archaeological, physical or cultural heritage sites and monuments of Balochistan listed in the ESMF baseline. However, chance find remains a possibility which will be addressed in this ESMF

2.26.6 OP 4.12 Involuntary Resettlement

OP 4.12 – Involuntary Resettlement covers direct economic and social impacts that results from land acquisition for project development, relocation or loss of shelter, loss of assets or access to assets, and loss of income sources or means of livelihood. The Policy applies to all affected persons, regardless of titles/ownership and the severity of impacts – direct or indirect. The policy requires particular attention to be given to the needs of vulnerable groups especially those below the poverty line, the landless, the elderly, women and children, indigenous groups, ethnic minorities, orphans, and other disadvantaged persons. Voluntary Land Donation will be prioritized for any possible land requirements using the Voluntary Land Donation Framework provided in this ESMF. The Resettlement Policy Framework (RPF) will address any possible land acquisition.

The overall objectives of the Policy are:

Involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project designs.

Where it is not feasible to avoid resettlement, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable the persons displaced by the project to share in project benefits.

Displaced persons should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them.

This OP **is triggered** as project interventions may require land from public or private land holders. Voluntary land donation will be prioritised. A Voluntary Land Donation Framework and Resettlement Policy Framework has been prepared as part of this ESMF.

2.26.7 OP 4.36 Forestry

The objective of this policy is to assist borrowers to harness the potential of forests to reduce poverty in a sustainable manner, integrate forests effectively into sustainable economic development, and protect the vital local and global environmental services and values of forests. Where forest restoration and plantation development are necessary to meet these objectives, the Bank assists borrowers with forest restoration activities that maintain or enhance biodiversity and ecosystem functionality. The Bank also assists borrowers with the establishment and sustainable management of environmentally appropriate, socially beneficial, and economically viable forest plantations to help meet growing demands for forest goods and services. While the project is not likely to support any activities that will lead to a significant degradation or conversion of forests, the project will comply with this policy and ensure that the forest resources of the selected project districts remain preserved while addressing poverty during the preparation of sectoral ESMPs.

This OP **is triggered**. The project may support interventions in the forestry sector. Rangelands are also classified as forest area by the Balochistan Forest Department. However, project activities will be small scale community based enterprise development interventions that are highly unlikely to result in the significant conversion or degradation critical forest areas. To address this OP, the ESMF will provide a mitigation approach for interventions related to forestry

2.26.8 Safety of Dams (OP 4.37)

The Policy seeks to ensure that appropriate measures are taken and sufficient resources provided for the safety of dams the WB finances.

This OP **is not triggered** since the proposed project does not involve construction of dams.

2.26.9 Projects on International Waterways (OP 7.50)

This OP defines the procedure to be followed for projects the WB finances that are located on any water body that forms a boundary between, or flows through two or more states.

This OP **is not triggered** since the proposed project interventions are not located on international waterways.

2.26.10 Projects in Disputed Areas (OP 7.60)

This OP defines the procedure to be followed for projects the WB finances that are located on any disputed and conflict areas.

This OP **is not triggered** since the proposed project interventions are not located on any disputed and conflicting areas

2.27 IFC / World Bank Guidelines

The principal World Bank publications that contain environmental and social guidelines are listed below.

- Environment, Health, and Safety (EHS) Guidelines prepared by International Finance Corporation and World Bank in 2007
- Pollution Prevention and Abatement Handbook 1998: Towards Cleaner Production
- Environmental Assessment Sourcebook, Volume I: Policies, Procedures, and Cross-Sectoral Issues.
- Social Analysis Sourcebook.

In addition to EHS guidelines, IFC/World Bank sector specific EHS guidelines will also be used for potential business enterprises that will be supported under each sector. Proposed sub-project interventions and available IFC/World Bank Industry Sector specific guidelines are included in **Table 2.3**.

The Environmental, Health, and Safety (EHS) Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP). When one or more members of the World Bank Group are involved in a project, these EHS Guidelines are applied as required by their respective policies and standards. These General EHS Guidelines will be used together with the relevant Industry Sector EHS Guidelines which provide guidance to users on EHS issues in specific industry sectors. General EHS guidelines will be applicable all the project activities along with industry specific guidelines given below as and when required. The Project will follow the applicable guidelines specific for each sector during the entire lifetime of the project. The details of EHS guidelines and associated standards are placed in **Annexure 4**.

Table 2.3: IFC/ World Bank Available Sector Specific EHS Guidelines

#	Sector	IFC/ World Bank Sector Specific Applicable EHS Guidelines ²⁴
1	Agriculture	General EHS Guidelines
		EHS Guidelines for General Crop Production
		EHS Guidelines for Food and Beverage Processing
		EHS Guidelines for Vegetable Oil Production and Processing
		EHS Guidelines for Perennial Crop Production
2	Livestock	General EHS Guidelines
		EHS Guidelines for Dairy Processing
		EHS Guidelines for Poultry Processing
		EHS Guidelines for Poultry Production
		EHS Guidelines for Mammalian Livestock Production
		EHS Guidelines for Meat Processing
3	Mines and Minerals	General EHS Guidelines
4	Handicrafts and Industries	General EHS Guidelines
		EHS Guidelines for Sawmilling and Wood-based Products
		EHS Guidelines for Tanning and Leather Finishing
5	Ecotourism and Forestry	General EHS Guidelines
		EHS Guidelines for Forest Harvesting Operations
		EHS Guidelines for Tourism and Hospitality Development

Note: Sector specific guidelines will be used in combination with the general EHS Guidelines. Any additional EHS guidelines required by the project will be identified at the stage of business enterprise development

2.28 International Conventions/Agreements

The following international conventions to which Pakistan is a signatory are relevant to project interventions:

Table 2.4: International Conventions

Category	Convention/convention	Came into force
Chemicals and hazardous wastes conventions	Stockholm Convention on Persistent Organic Pollutants	April 2008
	Rotterdam Convention on the Prior Informed Consent procedures for Certain Hazardous Chemicals and Pesticides in International Trade.	July 2005
	Basel Convention on the control of Trans-boundary Movement of Hazardous Wastes and their Disposal.	July 1994
Atmosphere conventions/protocols	United Nations Framework Convention on Climate Change (UNFCCC)	June 1994
	Kyoto Protocol to UNFCCC	Jan 2005

²⁴ https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines

Category	Convention/convention	Came into force
	Vienna Convention for the protection of the Ozone Layer.	Dec1992
	Montreal Protocol on Substances that Deplete the Ozone Layer.	Dec 1992
Land / environmental cooperation conventions	United Nations Convention to Combat Desertification (UNCCD) in those Countries Experiencing Serious Drought and / or Desertification, Particularly in Africa.	Feb 1997
Cultural and natural heritage	Convention Concerning the Protection of World Cultural and Natural Heritage (World Heritage Convention)	July 1976
Biodiversity related conventions/protocols	Convention on Biological Diversity (CBD).	July 1994
	Cartagena Protocol on Bio-safety to the Convention on Biological Diversity.	March 2009
	Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention)	Nov 1976
	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).	April 1976
	Convention on the Conservation of Migratory Species of Wild Animals (CMS)	Dec 1987
Refugees	Solutions Strategy for Afghan Refugees to Support Voluntary Repatriation, Sustainable Reintegration and Assistance to Host Countries (SSAR), UNHCR	May 2012
	Comprehensive Refugee Response Framework, UNHCR	2017

2.29 National Legislations Relevant to World Bank Safeguards Policies

Table 2.5 presents national legislations relevant to World Bank safeguard policies.

Table 2.5: National Legislations Relevant to World Bank Safeguard Policies

Requirement	Applicable World Bank Policy	Relevant Pakistan legislation/policy framework
Environmental Assessment	OP 4.01	Balochistan Conservation Strategy (93-98) National Environmental Policy (2005) Balochistan Protection Act, 2012 Guidelines for Stakeholder Consultations
Forestry	OP 4.36	Forest Act, 1927 Guidelines for Sensitive and critical areas, 1997
Natural Habitat	OP 4.04	Balochistan Wildlife Protection, Preservation, Conservation and Management Act, 2014
Pest Management	OP 4.09	National Environmental Quality Standards

Requirement	Applicable World Bank Policy	Relevant Pakistan legislation/policy framework
Cultural Property	OP 4.11	Antiquity Act, 1975 Environmental Protection Act Guidelines for sensitive And critical areas, 1997 Balochistan Culture Heritage Preservation Act, 2010
Involuntary Resettlement	OP 4.12	Land Acquisition Act of 1984
Sectoral Guidelines	Environmental Health and Safety Guidelines	Hazardous Occupation Rules, 1963 (No. 1-6 L-II/64) Hazardous Substances Rules, 2003.

3 Project Description

This chapter provides a background to the project and an overview of key components of the project.

3.1 Project Development Objective

The objective of the Balochistan Livelihood and Entrepreneurship Project is to promote employment opportunities and sustainability of enterprises in select bordering districts of Balochistan affected by refugee manifestation.

3.2 Project Overview

In response to the priorities of the Government of Pakistan on poverty reduction, the World Bank in close consultation with Government of Balochistan (GoB) and relevant stakeholders have designed the Balochistan Livelihoods and Entrepreneurship Project (BLEP) focusing on improving livelihoods of rural communities by promoting employment opportunities and sustainability of enterprises in project Districts. The project will be implemented in eight districts in the north of Balochistan, including Killa Abdullah, Killa Saifullah, Chagai, Sherani, Pishin, Mastung, Zhob and Nushki and will benefit rural households to promote livelihoods through enterprise development and job creation. These include five of the six districts affected by prolonged refugee presence for almost 40 years. Poverty rates in these districts are high from the outset and the presence of refugees has placed an unsustainable strain on resources. The map of Balochistan is included as **Figure 3.1**. It will predominantly target communities based in areas affected by a protracted refugee situation. It will contribute to the improvement of livelihoods and enterprise development within Balochistan through a combination of skill enhancement, asset creation, facilities development, and institutional development activities.



Figure 3.1: Map of Balochistan indicating Project Districts

The baseline study, dialogue and consultations with Government of Balochistan (GoB), relevant United Nation (UN) Agencies, Rural Support Programmes (RSPs) and other enterprise development and promotion agencies/organization established six sectors as the highest priority areas for investment. Therefore, BLEP has been targeted to benefit the communities having reliance on enterprises related to the sectors including but not limited to Agriculture, Livestock, Forestry, Mines & Minerals, Tourism and Industries in selected districts. In addition, the Project will have specific benefits for people living in the geographical locations through improved facilities developed under the project. The consultation has further identified critical needs in these sectors along with estimate resource needed to address the priorities. An estimated benefit to 1700 households is expected directly during 5 years of implementation. The project has following key components.

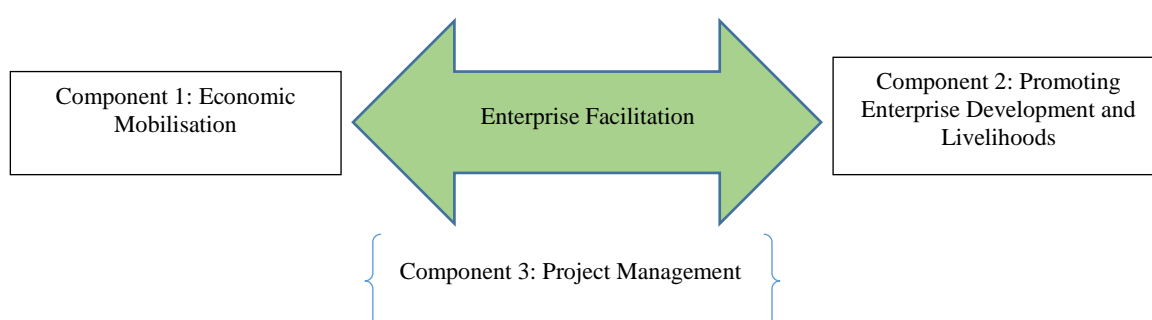


Figure 3.2: Project Overview

3.3 Component 1: Mobilisation of Economic Groups-USD 9.46 Million

The objective of this component is to support both the refugees and host communities in rural and peri-urban areas of selected districts in Balochistan to collectively access technical and financial resources while converting location disadvantage into location advantage, thereby addressing issues related to low population density and high cost of delivery in an inclusive manner. The rationale of this component is two-fold:

- support rural communities in taking advantage of the ‘collective’ in an inclusive manner to mobilise resources at the local level; and,
- building capacity of existing and potential entrepreneurs to better manage and utilize resources for productive purposes in a transparent manner. This component has two sub-components, as outlined below.

3.3.1 Sub-Component 1.1: Community Facilitation (US\$ 8.96 million)

The project will leverage existing community based platforms (CBPs) to identify beneficiaries to stimulate economic growth. Balochistan has a rich history of community mobilization; over the last two decades, rural support programmes, UN Agencies and NGOs that are operational in the province have supported the creation of CBPs. These CBPs are mostly established with the objective of poverty alleviation and are predominately social in nature. These groups also have a strong tradition of savings at the local level, which are currently not being utilized for investment or productive

purposes. The main advantage of using existing community based platforms is that they provide economies of scale in terms of identifying beneficiaries. In the target districts, these platforms have significant number of members, reaching up to 1,200 households per Union Council in some cases. These members have established their savings and the project seeks to leverage this financial capital towards productive/investment expenditures.

This component seeks to leverage these community based platforms to identify three sets of project beneficiaries (including men and women) that can be engaged in economic/productive activities for the creation of private/individual goods. The first group of beneficiaries will comprise of entrepreneurs, organized as Enterprise Clusters (ECs), selected through the facilitation of the CBPs, who are engaged in common economic interests (not necessarily the same businesses). These groups will be supported by the project post development of comprehensive Enterprise Development Plans (EDPs), covering financial and non-financial constraints for business growth. The second types of beneficiaries that will be identified through the project are individual entrepreneurs, who require financial capital and/or non-financial support to grow their individual business. These individuals will also be required to prepare EDPs to determine financial and/or support to be provided by the project. Finally, the project will support the livelihoods of those individuals with micro/subsistence level of incomes. These beneficiaries are expected to prepare a Livelihoods and Investment Plan (LIPs), which will identify some immediate needs that will require support for improving their livelihoods. It is anticipated that a significant number of LIPs will be prepared by women, particularly given their involvement in the handicrafts sector and food processing.

Where existing community-based platforms do not exist, or are found to be inactive, the project will support formation and revitalization of Community Institutions (CIs). The newly formed/revitalized groups will be assessed against institutional maturity criteria, (which will be developed during project implementation) and subsequently become eligible for project support. Wherever possible, the project will support establishment of revolving funds at the community level, which can be used by communities for onward lending to eligible entrepreneurs. CBPs will be eligible for these funds, after being assessed against institutional maturity criteria and the size will be linked to their savings.

Local and Technical Facilitators: One of the key factors for economic mobilisation will be development of Local Facilitators (LFs). LFs are individuals (male and female to ensure adequate coverage of and support to female beneficiaries) from the community who are both active and committed to the development of their area. They will be hired on a short-term contract by the Project to organize beneficiary groups in the project area. The roles and responsibilities will include

- formation of new groups and revitalization/reactivation of existing groups;
- attending meetings in order to help beneficiaries and the project in monitoring performance;
- monthly reporting to PMU; and,
- training group members in basic group management skills.

- In addition to LFs the project will support the development of a cadre of male and female Technical Resource Persons (TRPs) /subject specialists for
- group mobilization;
- enterprise development;
- financial management; and,
- saving and loan/internal lending

The TRPs can be from the local communities, project districts or others and will serve as a bridge between the relevant line departments and beneficiaries, wherever required. The TRPs will also be the main person to facilitate beneficiaries and LFs for developing LIPs and EDPs. The exact number of TRPs to be trained and commissioned for services will be determined during project implementation. Through this component office bearers of groups and local facilitators will be trained in leadership, book-keeping, dispute resolution and financial management. The funds mobilized by the ECs and individual beneficiaries could be from community savings and therefore, owned at the community level. Consequently, it is essential that these are managed in a transparent and efficient manner. To address this issue, the project will ensure that proper financial management and required book keeping be carried out by CBPs. These will be reviewed/audited by the local facilitators on a regular basis. The project will support the development of a mobile application to track membership, generation of savings and loans to ensure transparency.

The range of monetized services provided by the LFs and TRPs (service providers) will be agreed upon between the project team and the service providers and they will be remunerated based on deliverables, which will be monitored through a three-tier system. Together, the service providers will become an 'extended arm' of the PMIU and will represent the project at the community level. By ensuring the provision of services at the community level, they will help address the issue of high cost of service delivery. These service providers will be given the required training and guidance to perform their tasks by the project and are expected to continue the provision of their services after project completion.

3.3.2 Sub-Component 1.2: Citizens' Engagement (US\$ 0.5 million)

A context-based Citizens' Engagement Strategy will be developed from the outset to outline mechanisms for engaging host communities and refugees at all levels and at all stages of the project implementation, keeping in view the ethnic and socio-political diversity within and across the selected districts of Balochistan. The strategy will have three main objectives:

Seek to change perceptions about the role of the state as a 'provider' of employment opportunities and employer of last resort towards facilitating job creation and income generation through an enabling environment and regulatory framework.

Provide recommendations on ways to alter the attitude of local communities towards managing household income, away from consumption expenditures and towards savings for investment purposes, thereby facilitating the use of local resources towards productive expenditures.

Seek to foster inclusion across project implementation to ensure greater participation of all 'structurally' marginalized groups including women, widows, refugees, disabled etc.

The strategy will not only serve as a grievance redress mechanism for the project, it will also be a channel to solicit community feedback on how to improve project design and implementation modalities to be become more responsive. This strategy will also provide a menu of specific options for:

- inclusion of refugees in livelihoods generating activities, especially in the context of their legal status that prevents them from owning assets;
- targeting women;
- sensitizing local communities on climate smart practices; and,
- inclusion of persons with disabilities.

3.4 Component 2: Promoting Enterprise Development and Livelihoods (US\$ 32.26 million)

Rationale: Support local entrepreneurs and individuals to enhance profitability and income. These activities will be implemented in areas affected by a protracted refugee situation.

In the context of prevailing socio-economic conditions in the targeted districts, interventions proposed for enterprise facilitation in this component are guided by two principles. First, support to enterprises should be extended with the objective of enhancing profitability, which implies facilitating improved productivity, higher sales and reduced costs of production. This requires product diversification to promote competition, access to new markets and adoption of climate smart technologies to ensure sustainability and mitigate the impact of climate change. Also, there is a need to recognize that skill enhancement per se will not lead to the establishment or growth of enterprises; skills trainings have to be relevant to specific sectors and contextualized, thereby leading to greater efficiency of doing business. Second, while there is potential to support rural populations in establishing new businesses, it should be recognized that not all enterprises supported through the project will be successful; the aim of interventions described below is to enhance bargaining power of entrepreneurs with middlemen, the creation of networks for technical assistance, marketing, procurement of raw materials etc. Given the legal status of refugees in Pakistan and their inability to own assets legally, it is envisaged that the activities proposed in the first two sub-components below will be targeted to host communities while technical and vocational training will be targeted to both host communities and refugees. At the community level, it is expected that refugees, who will be trained through the project, can be employed by the enterprises that are being supported by the project in the same locality. This link will be facilitated by the Local facilitators and technical resource persons at the community level.

3.4.1 Sub-Component 2.1: Enterprise Facilitation (US\$ 26 million)

This component will support ECs and individual beneficiaries to develop and implement EDPs, which will outline challenges in a particular sector as well as challenges that affect particular businesses and provide solutions for issues such as production techniques, services, technology, marketing, management, finance, regulations and sustainability. EDPs will be developed for groups of entrepreneurs (male, female and where possible, refugees) having common economic interests and will cover the spectrum of business

development within a sector including supply of raw material, resource management, marketing, adoption of technology and access to finance. The plans will also highlight

- key constraints that inhibit enterprise development and growth at the community level, including technical skills; and,
- productive infrastructure that is critical in supporting the group at the community level.

Leveraging the support of TRPs mobilized at the community level, this component will also support entrepreneurs with the provision of non-financial business development services (BDS) such as enterprise training, support in writing business plans, viability and quality of business ideas, identifying markets, understanding entrepreneurship and identifying sources of financial capital. These issues are particularly compounded for women who are often not taken seriously by the market and financial institutions and their engagement in the private sector is often hindered by cultural constraints. In Balochistan, a key issue that inhibits development of local businesses is limited technical knowledge to increase productivity therefore provision of BDS will address this issue. BDS can also support entrepreneurs in addressing issues related to market entry, addressing the burden of regulatory environment and capacity building for financial management and accounting. These will be vetted by consultants/project staff and the project will seek to provide identified BDS requirements. Activities initiated through this component will focus on all members of community-based platforms including host communities and refugees.

The EDPs will identify business development facilities aimed at promoting businesses and addressing issues related to logistics. The business development facilities will be financed through the project. It is expected these facilities will promote adaptation and mitigation, which is essential in the rural context of Balochistan, where climate change has contributed significantly towards loss of livelihoods. Approximately 30 Business Development Facilities (BDFs) will be created through this component, each costing on average US\$ 220,000. ECs will use the EDPs to also identify the investments needed to support profitability and market access of business ventures, and can include the establishment of storage facilities, water resource management, facilitation of transport logistics, among others.

The possible developments in the select sectors include: Agriculture & Livestock (extension services, improved productivity, meat packing etc.), Industries & Handicrafts, Mines & Minerals (training, use of safe and efficient practices etc.), Ecotourism and Forestry (homestays, small restaurants, kiosks etc.).

3.4.2 Sub-Component 2.2: Livelihoods Promotion (US\$ 1.16 million)

This sub-component will support the development and implementation of LIPs, which will provide an outline for immediate necessary support to individuals (male, female and where possible, refugees) engaged in subsistence level activities, for improving their livelihoods to enhance their income via skills enhancement, adoption of improved business practices and asset creation. In addition, this sub-component will facilitate capacity building of the beneficiaries with the aim of graduating them towards gainful economic activities. Both the EDPs and LIPs will include a detailed financing plan,

identifying the share of beneficiary contribution and the types of expenditures that will be financed as well as financing gaps, which will be addressed through the project. This is essential because the aim of the grants provided to communities for the implementation of EDPs and LIPs is to leverage financial capital at the community level for productive and investment purposes.

3.4.3 Sub-Component 2.3: Technical and Vocational Skills Development (US\$ 5.1 million)

This sub-component will develop a cadre of skilled workers, trained in market-relevant trades. Technical and vocational training will be imparted to workers as well as entrepreneurs in a number of trades, which are aligned to the local context but also relevant for other markets such as the Middle East, which is a major employer of skilled and semi-skilled workers from Pakistan. These training courses will be mainly organized in collaboration with National Vocational and Technical Education Commission (NAVTEC), which has developed curricula for over 300 trades. In the event that NAVTEC is unable to deliver training for a particular trade, the private sector (private sector providers, Public-Private Partnership (PPP) and not-for-profit providers) will be engaged for training provision.

Given that daily wage labour is the main source of income for refugee populations and can contribute towards their upward mobility within Pakistan and even after repatriation, activities undertaken through this component will particularly target refugees to improve their employability. Refugee families are limited in their ability to access education and the potential to find a formal job after completing education is low. Consequently, multiple members from one household, especially male members engage in daily wage labour to augment overall household income. This further emphasizes the need for a strong skills programme targeted towards refugees, which are aligned, to the extent possible with the enterprise development and livelihoods interventions described above. Moreover, skills enhancement of the refugees will also improve their chances for productive activities when they return to Afghanistan.

Skilled refugees are well integrated at the community level. A study completed by ILO and UNHCR in March 2017 explores livelihoods for refugees in Balochistan and finds that in hiring daily wage labour, host communities and prospective employers do not distinguish between refugees and non-refugees rather base their hiring decisions upon skill set. Whereas host communities are engaged in formal jobs, agriculture, livestock and mining, the refugees in the same geographically areas are engaged as daily wage labour in these sectors. In addition, the study finds that before migration, most refugees were engaged in agriculture and livestock while after migration, through skills enhancement programmes, they have been able to engage in sectors such as trading, apiculture, masonry, electric works and domestic workers.

The project can support refugees in the adoption of climate-smart agriculture practices such as aquaponics and hydroponics through skills development. A recent study completed by the World Bank also shows that innovative agricultural practices such as hydroponics and aquaponics are ideal for refugees to improve nutritional outcomes and enhance livelihoods. Such approaches are also ideal in the context of Balochistan because they can imply up to 95 percent savings in the use of water and the technology/infrastructure required for such practices can be installed anywhere and is

easily movable. Such activities can also promote greater involvement of female refugees in productive activities. Participants of skills training programmes will be identified by community institutions in a consultative manner to ensure equity within the community, and, relevance of skills provided. Moreover, to ensure greater involvement of women, mechanisms (such as hiring of mobile trainers) will be established to ensure training at the doorstep of female beneficiaries whose mobility may be restricted.

3.5 Component 3: Project Management - USD 8.23 Million

Rationale: This component is aimed at addressing the challenge of weak public sector capacity for delivery of services and inculcates an efficient approach towards service delivery. The interventions proposed in this section are aimed at building capacity within the Government of Balochistan to develop a corporate and more 'private-sector' approach towards service delivery, which is less susceptible political interference.

This component will support the Planning and Development Department (P&DD) within Government of Balochistan to finance project management and related activities including:

- staffing and training of Project Management Unit (PMU), capacity building in the areas of financial management, procurement and technical skills, equipment, operating costs and external and internal audits;
- establishment of Management Information System (MIS) and effective evaluation system encompassing a baseline survey, rapid evaluations during the lifetime of the project and end line assessment of achievements; and,
- technical assistance as required including provision for Third Party Monitoring.

4 Environmental and Social Baseline of the Project Areas

This Chapter will cover an overview baseline of physical, biological, socioeconomic and cultural aspects (cultural heritage; archaeology; and other objects of special interest, e.g. graveyards, monuments located in the project area).

4.1 Project Area

Balochistan is the largest province of Pakistan, spreads over an area of 347,190 square kilometres, forming 43.6 per cent of the total area of Pakistan.²⁵ Balochistan lies between 24° 53' and 32° 05' north latitudes and 60° 52' and 72° 18' east longitudes. It is bounded on the north by Afghanistan and FATA, on the north-east by FATA and Punjab province, on the east by Sindh province, on the south by Arabian Sea and on the west by Iran.²⁶ Balochistan is divided into 30 districts and administratively headed by a Chief Minister who is elected every five years. The literacy rate is 26.6% with that of males being 36.5% and females at 15.0% respectively. The project area includes eight bordering districts of Balochistan covering an area of 90,190 square kilometres including Killa Abdullah, Killa Saifullah, Chagai, Sherani, Pishin, Mastung, Zhob and Nushki.

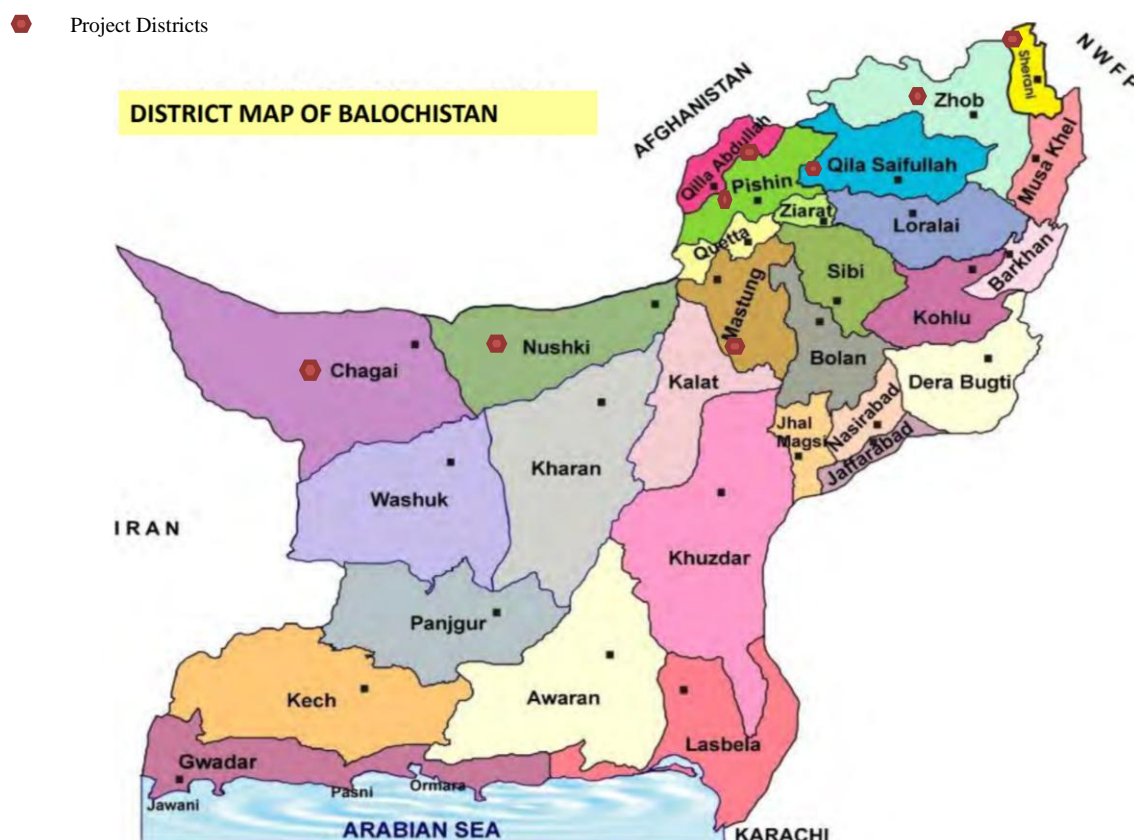


Figure 4.1: District Map of Balochistan

²⁵ http://www.balochistan.gov.pk/index.php?option=com_content&view=article&id=37&Itemid=783. Assessed on April 18 2018.

²⁶ 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

4.1.1 Chagai District

Chagai is the largest district in Balochistan and has an area of 45,444 square kilometres, Chagai District lies between 60°49'23"- 65°28'35" East longitudes and 29°49'32"- 27°51'51" North latitudes and consists of two Tehsils and 10 Union Councils.²⁷ The total population of Chagai according to the 2017 Population Census is 226,008. Chagai District is bounded by Afghanistan on the north, Nushki, Quetta, Mastung and Kalat districts on the east, Kharan district on the south-east and Iran on the south-west.²⁸

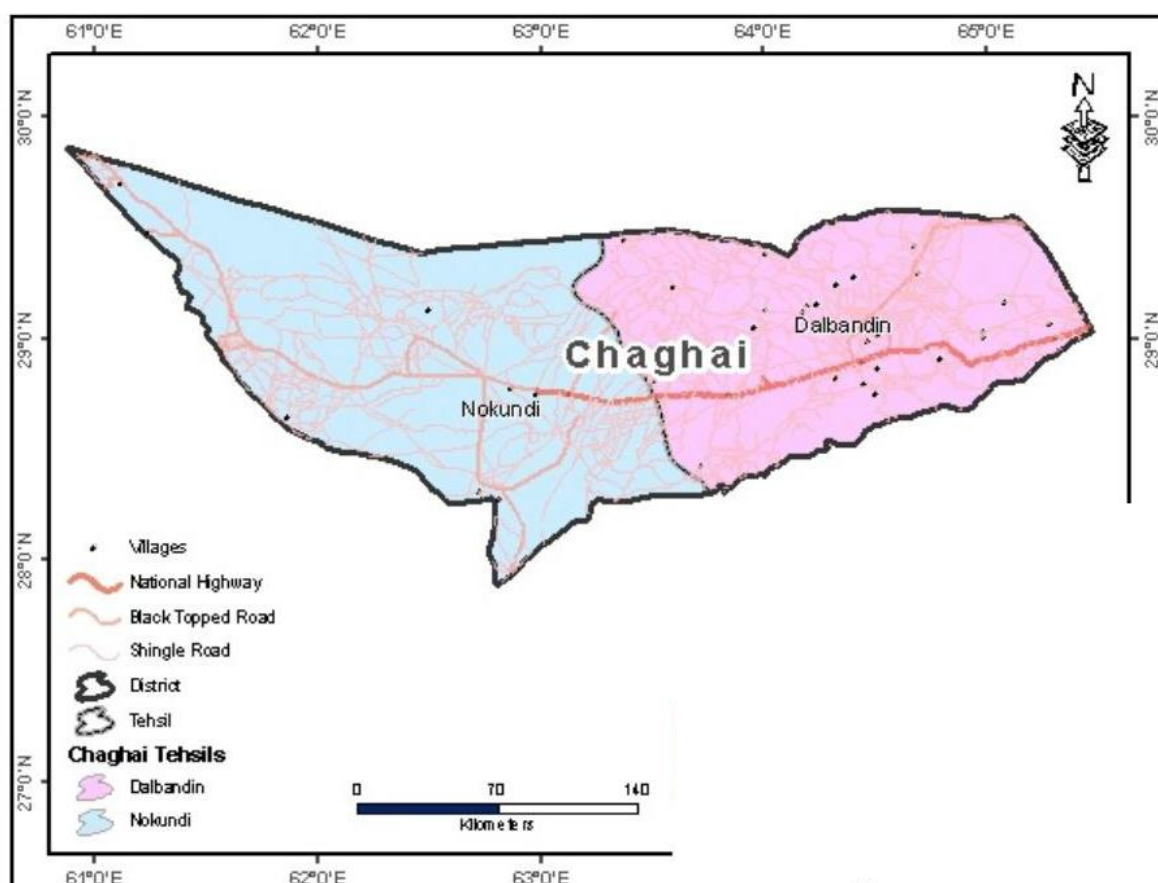


Figure 4.2: Map of Chagai

4.1.2 Killa Abdullah District

Area-wise district Killa Abdullah ranks as the 6th smallest district of Balochistan and has an area of 3,293 square kilometres. Located between 66°14'23"-67°15'43" East longitudes and 30°05'7"-31°18'46" North latitudes, it consists of four Tehsils and 25 Union Councils.²⁹ The total population of Killa Abdullah according to the 2017 Population Census is 757,578. It is bounded on the north and west by Afghanistan, Pishin district on the east and Quetta district on the south.³⁰

27 Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

28 1998 District Census Report of Chagai, Sep 1999, Population Census Organization, Statistics Division, GoP.

29 Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

30 1998 District Census Report of Kill Abdullah, Sep 2000, Population Census Organization, Statistics Division, GoP.

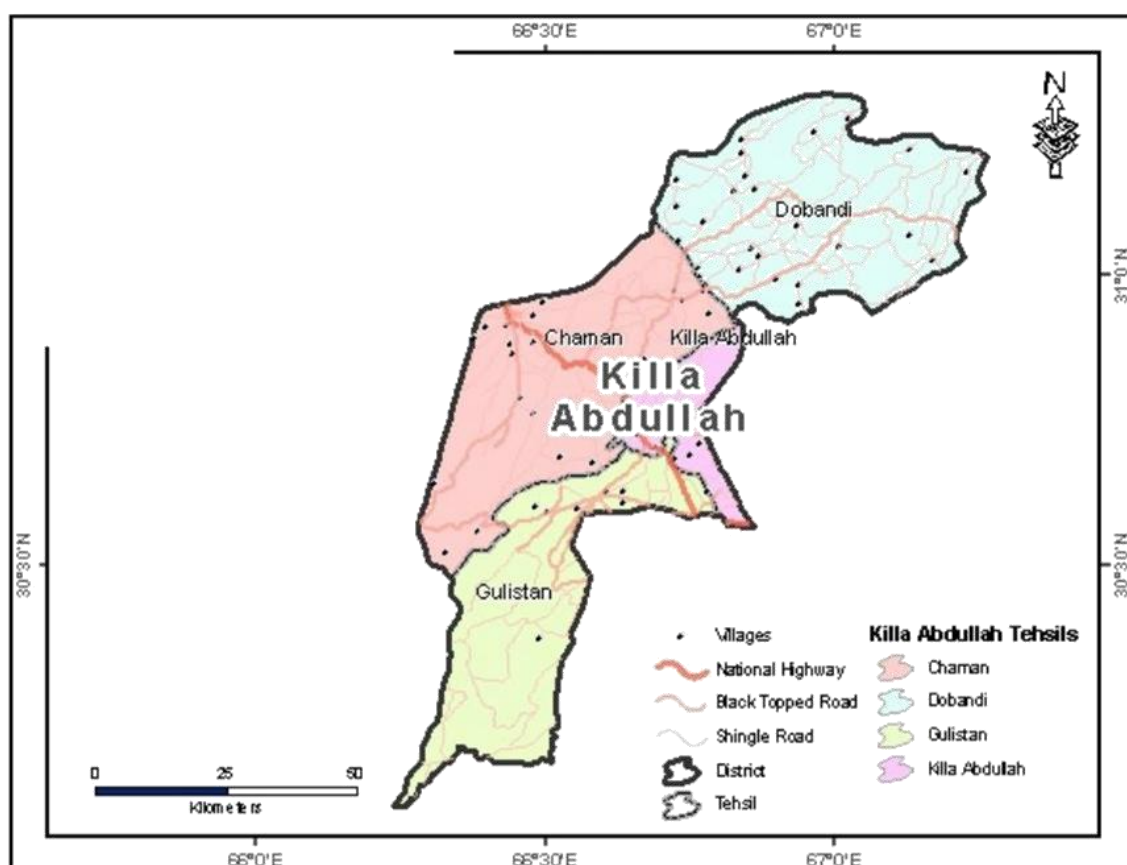


Figure 4.3: Map of Killa Abdullah

4.1.3 Killa Saifullah District

Area-wise district Killa Saifullah ranks 15 (ranking order: smallest to the largest) in Balochistan and has an area of 6,831 square kilometres. Located between 67°17'37"-69°22'54" East longitudes and 30°30'35"-31°37'10" North latitudes, the district has three Tehsils and 15 Union Councils.³¹ The total population of Killa Saifullah according to the 2017 Population Census is 342,814. It is bounded by Zhob and Sherani district on the north and east, Lorelai district on the south and Pishin district and, Afghanistan on the west.³²

³¹ Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³² 1998 District Census Report of Killa Saifullah, Aug 2000, Population Census Organization, Statistics Division, GoP

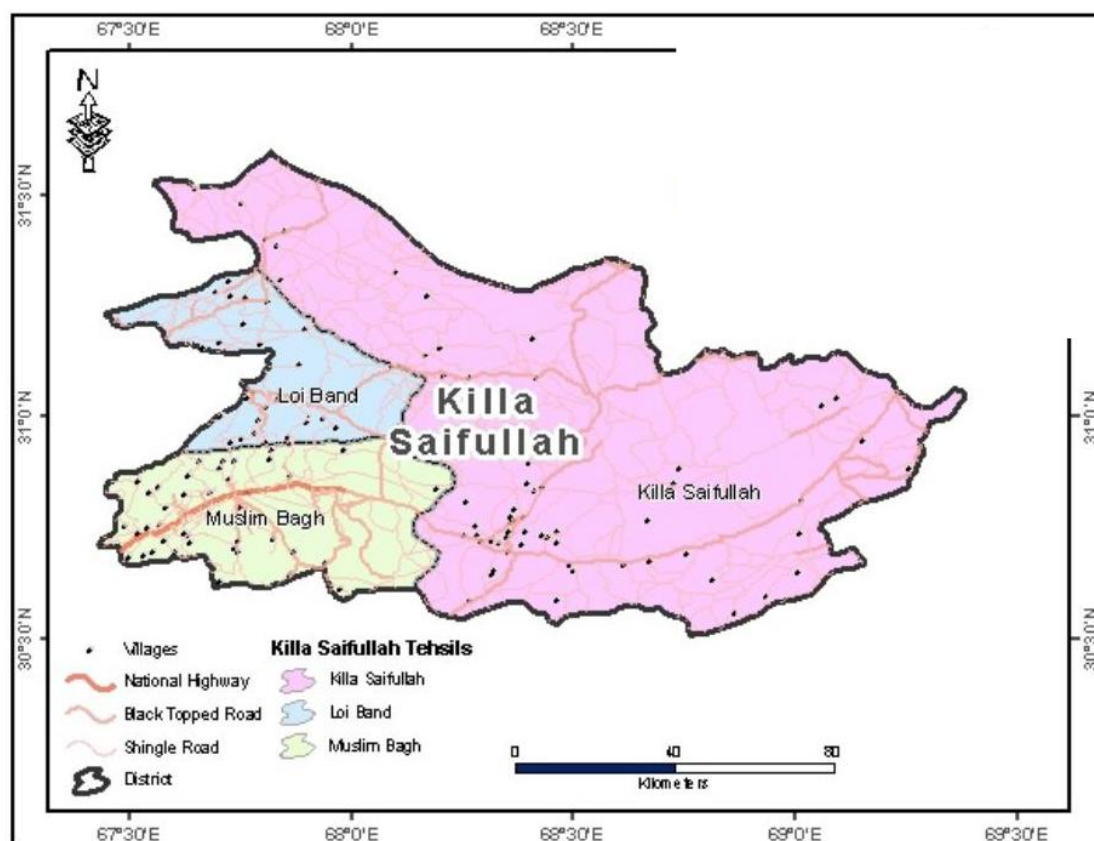


Figure 4.4: Map of Killa Saifullah

4.1.4 Mastung District

Area-wise district Mastung ranks 13 (order: smallest to the largest) in Balochistan and has an area of 5,896 square kilometres. The district lies between 66°11'34"-67°25'59" East longitudes and 29°20'13"- 30°15'8" North latitudes and consisting of three Tehsils and 13 Union Councils.³³ The total population of Mastung according to the 2017 Population Census is 266,461. The district is bounded on the north by Quetta district, on the east by Sibi and Bolan districts, on the south by Kalat district and on the west by Nushki district.³⁴

³³ Mastung - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁴ 1998 District Census Report of Mastung, Jun 2000, Population Census Organization, Statistics Division, GoP

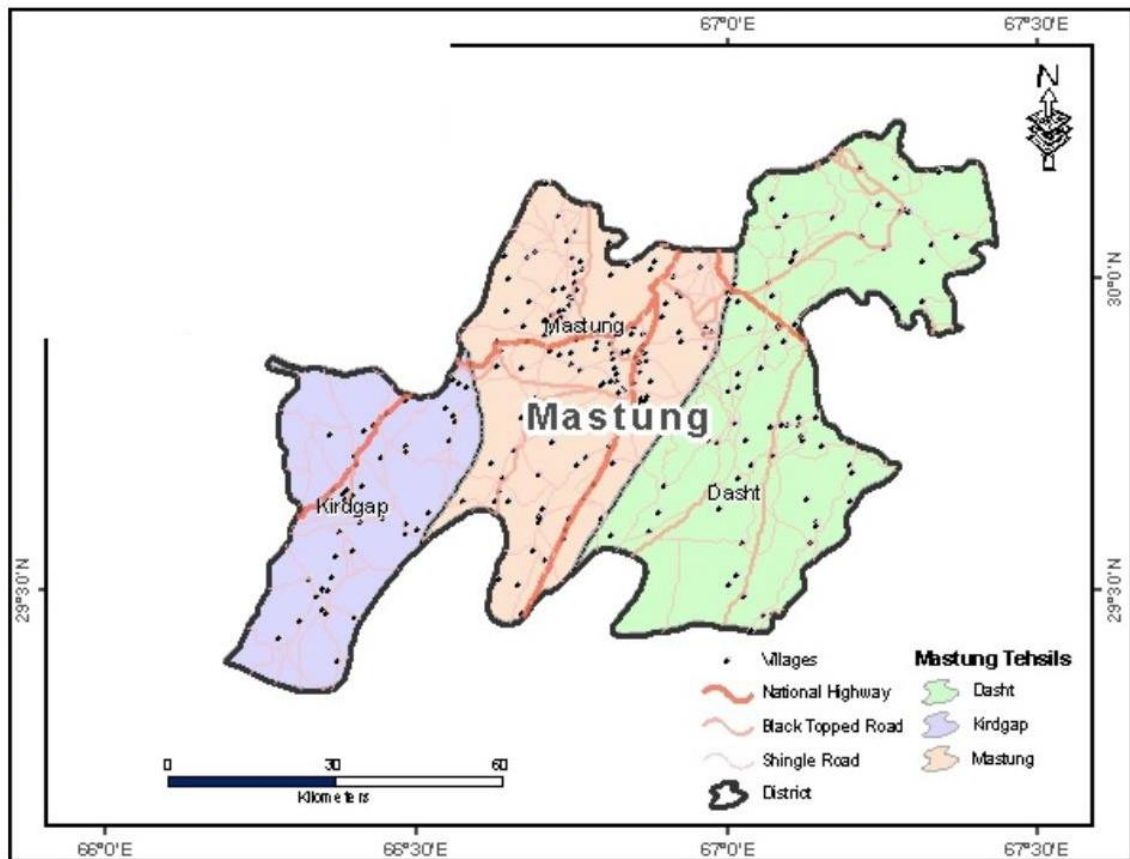


Figure 4.5: Map of Mastung

4.1.5 Nushki District

Nushki was carved out of Chagai - one of the oldest districts of Balochistan. Area-wise district Nushki is smallest district in Balochistan and has an area of 5,797 square kilometres. Nushki District lies between 65°07'42"- 66°18'45" East longitudes and 29°01'51"-29°52'37"North latitudes and consists of one Tehsil and 10 Union Councils.³⁵ The total population of Nushki according to the 2017 Population Census is 178,796. The district is bounded on the north by Quetta district, on the east by Mastung districts, on the south by Kharan district and on the west by Chagai district.

³⁵ Nushki - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

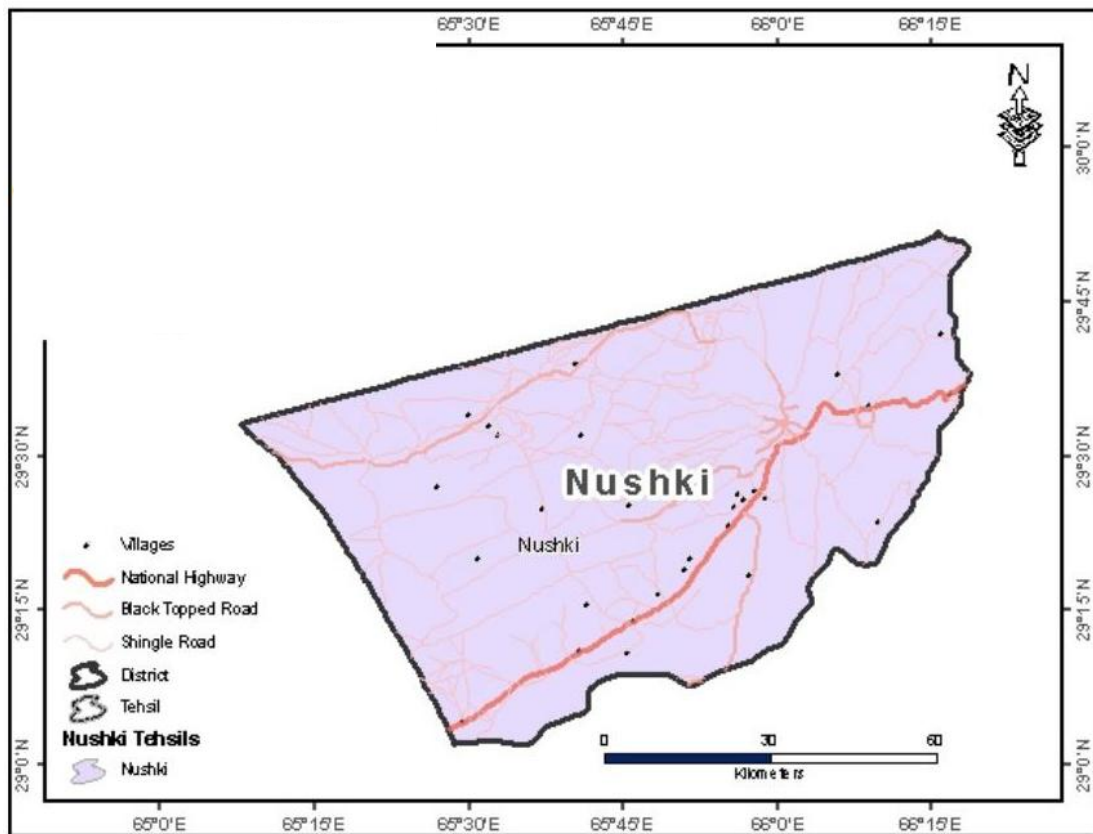


Figure 4.6: Map of Nushki

4.1.6 Pishin District

Area-wise district Pishin ranks 18 in Balochistan and has an area of 7,819 square kilometres, Pishin District lies between 66 46'01"-67 49'19" East longitudes and 30 44'02"-31 14'02" North latitudes consisting of four Tehsils and 38 Union Councils.³⁶ The total population of Pishin according to the 2017 Population Census is 736,481. It is bounded on the north by Afghanistan and Killa Saifullah district, on the east by Killa Saifullah and Loralai districts, on the south by Ziarat and Quetta districts, and on the west by Killa Abdullah district.³⁷

³⁶ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁷ 1998 District Census Report of Pishin, Aug 2000, Population Census Organization, Statistics Division, GoP

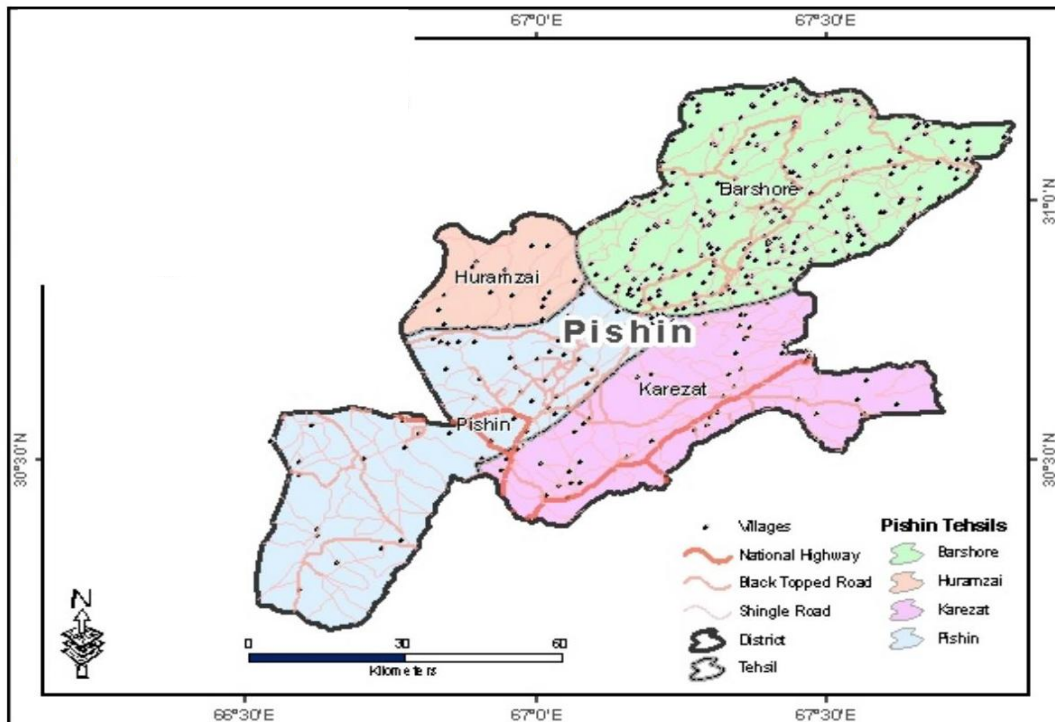


Figure 4.7: Map of Pishin

4.1.7 Sherani District

Sherani is carved out of Zhob and was declared as a district in 2006. Area-wise, district Sherani is the fifth smallest district in Balochistan and has an area of 2,710 square kilometres. Sherani District lies between 69°31'53"- 70°02'55" East longitudes and 31°16'44"- 32°04'15" North latitudes consisting of one Tehsil and seven Union Councils.³⁸ The total population of Sherani according to the 2017 Population Census is 153,116. It is bounded on the north by Afghanistan, on the east by Zhob district, on the south by Killa Saifullah district and on the west by Pishin and Killa Abdullah districts.

³⁸ Sherani - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

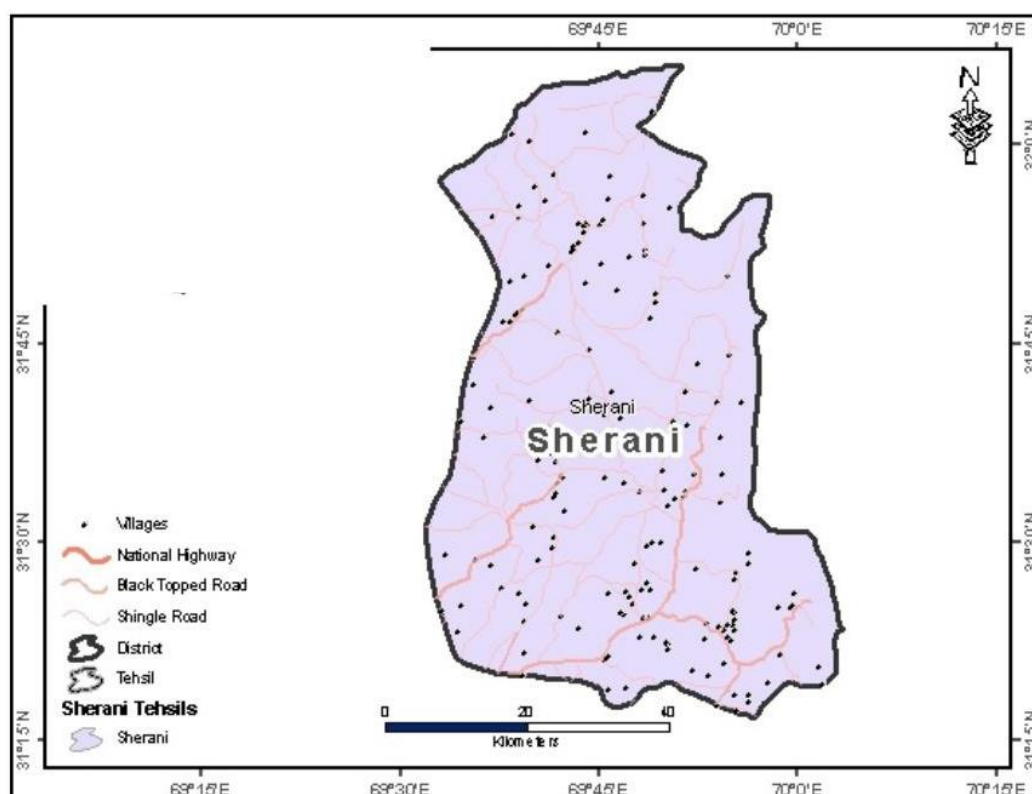


Figure 4.8: Map of Sherani

4.1.8 Zhob District

Zhob has an area of 12,400 square kilometres. Located between 67°48'41"- 69°44'43" East longitudes and 30°26'54"-31°57'8" North latitudes, it consists of two Tehsils and 24 Union Councils. ³⁹ The total population of Zhob according to the 2017 Population Census is 310,554. It is bounded on the north by Afghanistan and South Waziristan, on the east by the tribal area adjoining Dera Ismail Khan and Musakhel District, on the south and south-west by Loralai and Killa Saifullah Districts. ⁴⁰

³⁹ Zhob - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

⁴⁰ 1998 District Census Report of Zhob, Jul 2000, Population Census Organization, Statistics Division, GoP

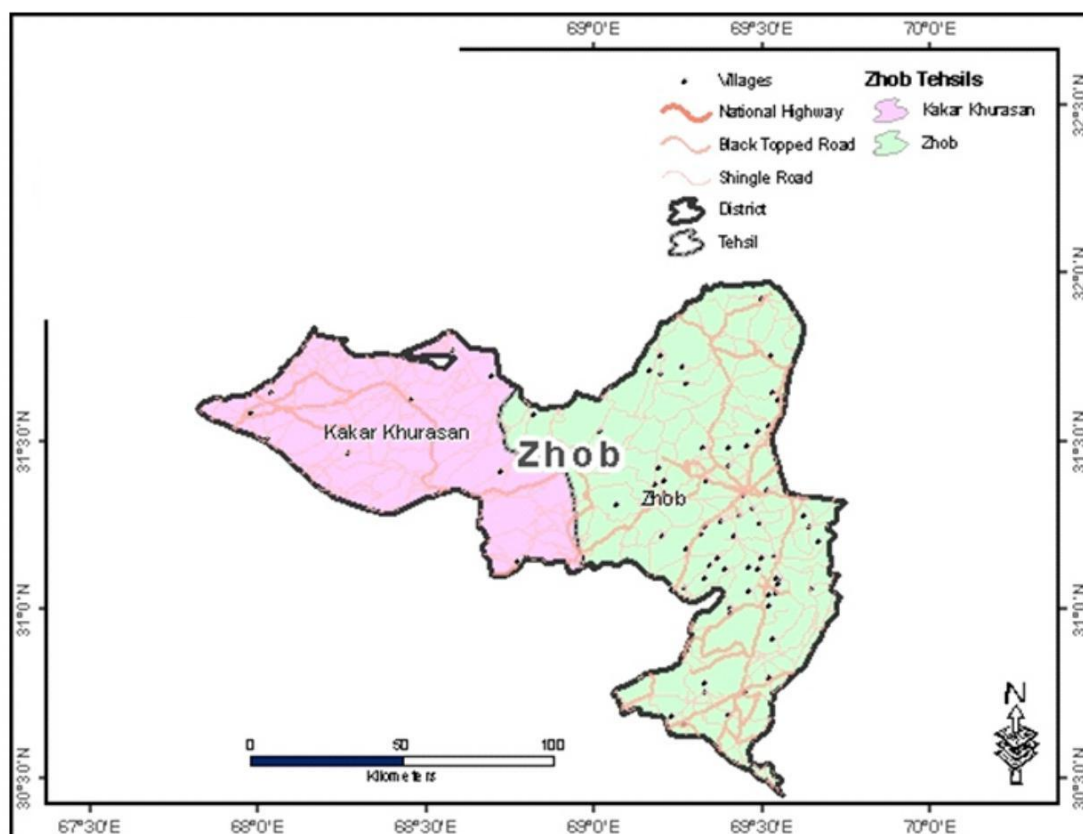


Figure 4.9: Map of Zhob

4.2 Physical Environment

4.2.1 Topography and Soil

The Balochistan plateau with an average altitude of about 1968 feet above sea level extends westward, with many ridges running across it from north-east to south-west. It includes the Makran, Kharan and Chagai ranges in the west and Sulaiman, Pub and Kirthar ranges in the east. In between the central Brahui range attains prominence. The Toba Kakar and Chagai ranges in the north separates the Balochistan plateau from Afghanistan and the coastal Makran range skirts the south.⁴¹ In the north-east of the plateau, Zhob-Loralai basin form a lobe surrounded on all sides by mountains. In the east and south lies the Sulaiman range which joins the central Brahui range near Quetta. The small Quetta basin is surrounded by Zarghun, Takatu, Khilafat, Chiltan and Murdar Ghar ranges. In the north and north-west, the lobe is bordered by the Toba Kakar range. The western extension of which is known as Khwaja Amran range.⁴² The general land form of north-western Balochistan comprises a series of low-lying plateau, some of which are separated from one another by mountain ranges. This region is a true desert with inland drainage and dry lakes locally known as Hamuns. Hamun-i-Mashkel and Hamun-i-Lora are the two large depressions, which turn into lakes whenever it rains. An extinct volcano known as Koh-e-Sultan is situated at about 500 kilometres west of Quetta. Southern Balochistan includes the Sarawan area in the north and a vast

⁴¹ 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

⁴² 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

wilderness of ranges in the south. The backbone of the mountain system of Balochistan is the central Brahui range, which runs in north-east to south-west direction for a distance of about 360 kilometres between Zhob and Mula rivers.⁴³

4.2.1.1 Chagai

Topography of the district includes distinctive highlands, low-lands, and desert. The highlands or the mountainous area comprises of Koh-i-Sultan, Chagai Hills, Sarlath range, Ras Koh and Kachau, and Mirjawa. These mountain ranges have a general east-west trend. The Koh-i-Sultan with a height of 1000 to 2300 meters and the Chagai hills with a height of 2000 to 2400 meters dominate the central north district. The Sarlath range is located in the north eastern corner of the district whose height varies from 1100 to 1600 meters. The hill ranges of Kachau and Mir-Jawa are situated along the south-western boundary of the district. Their height varies between 900 to 2300 meters. The Ras Koh lies in the south east along the border with Kharan district. It is higher than other mountains of the district. The highest peak is "Ras" Koh" which attains a height of about 3000 meters. The low-land part of the district is its plain area which is of two types. The area between Nushki and Chagai consists chiefly of a vast level plain of alluvial soil interspersed with tracts of sand and intersected by a low range of stony hills. The other portion of plain stretches from Hamun-e-Lora towards the southwest; between Chagai and Ras Koh hills. It is known as the "Oak". The area beyond Chagai is a sandy desert and stony or gravel land. The crescent shape moving sand dunes are found between Chah Sanda and Tratoh and between Kundi and Mashki Chah. The longitudinal/lateral type of sand dunes are found on the north of Koh-i-Sultan towards the border of the district with Afghanistan, forming part of desert region of Afghanistan.⁴⁴

4.2.1.2 Killa Abdullah District

The northern half or the district is dominated by the mountains while the south-western part or the southern half is hilly. The south-eastern part or the district is a plain area bordered by the Sarlath and Mashlakh ranges. The hill ranges are uniform in character consisting of long central ridges with frequent spurs separated by innumerable gorges and torrent beds. The largest mass of mountain is Toba Kakar stretching along the northern boundary and tapering off on the south into the Khwaja Amran range and afterwards into the Sarlath range. The town of Killa Abdullah is situated on transcending mountain ridge at the mouth of the famous Khojak tunnel. The general elevation of the area is about 1500 to 2700 meters above sea level. The valley floor is covered with unconsolidated alluvial sediments mostly composed of clay, silt and silty clay. All these sediments are deposited in the valley by the seasonal streams and hill torrents. The erosion rate is high which prevents the vegetation from growing.

⁴⁵

4.2.1.3 Killa Saifullah District

The greater part of the district is mountainous intersected by the Zhob valley. Hills mainly belong to Toba Kakar range and lie in the north and north-west of the district.

⁴³ 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

⁴⁴ Chagai – 1998 Census report

⁴⁵ Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

Principal ranges are Toghar, Azak, Baliaraghar, Spinghar, Shorghar, Churnnaghar, Kand, Surghund, Marzaghan, Malkand, Sraghar, Sharan and Sakir. The general elevation of the district is 2000 to 3000 meters above sea level. Killa Saifullah is at an elevation of 1,550 meter above sea level (MSL). The highest point is near Kan Mehtarzai which is 3339 meters above sea level.⁴⁶ The Zhob valley is an immense stretch of alluvial plain extending from Kan Mehtarzai pass up to Gomal River at the north-eastern boundary of Zhob district. Several small valleys run from either side of the great Zhob valley into the surrounding hills. A considerable part of the soil in these valleys consists of virgin land. Pasture lands are almost everywhere in the district. The boundary between Quetta valley and Zhob valley is the dividing line between the continental watershed and the Central Asian watershed at Kan Mehtarzai Pass. The rivers in Quetta valley drain into Central Asian watershed.⁴⁷

4.2.1.4 Mastung District

The general topography of the district is mountainous, consisting of a series of parallel ranges running in a north to south direction with ground elevation varying from 934 to 3,414 meters above sea level. There are several valleys in between these ranges. Some of these valleys are wide enough and are also important agriculturally. The mountains of the Central Brahui range cover major part of Mastung district. In the extreme north-east, close to the boundary of Quetta and Bolan districts lie the mountain of Murdar Ghar, Sor Ghar and Kuk Ghar. The highest peak in Murdar Ghar is 3265 meters while that of Kuk Ghar is 3250 meters. Surrounded by these mountains is the valley of Zarakhu which is drained by Zarakhu and other streams. Further south are the hills of Nagau range. The highest point in these hills is above 2500 meters. Further west along the southern boundary of Dasht sub-division are hills of Koh-i-Siah. The highest point in these hills is 3117 meters. The next important mountains are those of Zahri Ghat, running from north-east to south-west and dividing Mastung district into two parts. The highest point is 2681 meters, which is known as Koh-i-Zindan. North-west of Zahri Ghar lie the southern extension of the Chiltan hills. The highest point in this range is 3314 meters. Further north-west, along the border of Mastung with Quetta district, are the hills of Mashlakh range. In the south-west of Mastung valley, lies the hills of Unalet range with highest point in this range is 2422 meters. The principal valleys are Kirdgap, Shirin Aab, Mastung, Kanak, Bhalla Dasht and Gwedan. The soil is mainly Limestone and Clay. The soils are moderately deep, strongly calcareous, gravely clay loam. There is no evidence of salinity problems and the soil is considered suitable for agriculture.⁴⁸

4.2.1.5 Nushki District

Eastern and southern parts of the district comprise of hilly areas while rest of the district area is a plain. The terrain elevation varies between 807 -2,064 meters above Mean Sea Level. From Nushki, the flat Balochistan desert stretches to north and westwards toward the Helmand River.⁴⁹ Nushki district is located in the extreme north of Balochistan province and it lies on the belt, which is in the south of Pakistan-Afghanistan border, from the Sarlath Hills on the east to Koh-i-Malik Siah in the west. The east-west length of the district is 115 km and north-south is 70 km. The district is

⁴⁶ Killa Saifullah 1998 District Census Report

⁴⁷ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

⁴⁸ Mastung – 1998 District Census Report

⁴⁹ Nushki - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

bound in the north by the desert region of Afghanistan (which lies south of the Helmand River), on the east by the Sarlath hilly range and Kalat district, in the south by Kharan district and in the west by Iran. There are innumerable channels and hill torrents which originate from the mountains and flow during rains with less water, however, reaches the lake basins (hamuns).⁵⁰

4.2.1.6 Pishin District

The north-eastern part of Pishin district is covered by Toba Kakar range intersected by long nilrro valleys. The hills are fairly uniform in character consisting of long central ridges from which frequent spurs descend varying in elevation from 1800 to 2800 meters above sea level. The south-western part of the district is a plain area known as Pishin valley. It consists of flat plain with alluvial soil in the centre and pebbly slopes of varying length on either side to the surrounding hills.⁵¹

4.2.1.7 Sherani District

Sherani District is mountainous in characteristics and comprises a mix of lofty hills, valleys and water channels. The terrain elevation varies from 678 - 3,356 meters above Mean Sea Level.⁵² Topography of the district is covered with mountains and hills intersected by the broad valley of Sherani and its tributaries. The Sinh Ghar, Tor Ghar and Sur Ghar ranges are also situated in the eastern side of the district. The two mountainous regions are of different character. The centre of the district is named as "Stano Raaghah".⁵³

4.2.1.8 Zhob District

The district is surrounded with mountains and hills intersected by the broad valley of Zhob and its tributaries. Average Elevation of the district is 1500 to 3000 meters above sea level. The Toba Kakar Range covers western half of the district extending from the Afghanistan boundary up to Zhob River. The Suleman Range is locally called as "Kasi Ghar", lies on the eastern boundary of the district; the famous Takht-e- Sulaiman or Solomon's Throne is the highest peak of this range with ground elevation about 3,441 meters above sea level. The Sindh Ghar, Tor Ghar and Sur Ghar Ranges are also situated in the eastern side of the district. The two mountainous regions are of different character. The greater part of the district, beyond the left bank of the Zhob, consists almost entirely of an extensive series of calcareous sandstones and shales. The hilly region situated beyond the right bank of the Zhob River, form a narrow fringe along the southern and eastern end of the district boundary. The great part of the district, beyond the left bank of Zhob River, consists almost entirely beyond the district boundary. On the south of Zhob valley, a succession of parallel ridges is running from north-east to south-west divides the drainage of Zhob from that of the Bori Valley in Loralai District.

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4.2.2 Climate

⁵⁰ Nushki - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

⁵¹ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

⁵² Sherani - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

⁵³ Sherani District Childhood development Plan 2011

⁵⁴ Zhob - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

The climate of Balochistan is generally arid and the province can be divided in to four climatic zones:⁵⁵

- Hyper-arid (0-100 mm/year) - Chagai, Kharan, Makran coastal areas and south-east of Lasbela;
- Arid (150 mm/year) - North east of Zhob, Loralai, Sibi, Kachhi, Lasbela plains, and Pab-Mor ranges;
- Semi-arid (200-250 mm/year) - Sulaiman mountain range, Toba Kakari area, Marri Bugti areas and Pab Kirthar mountain ranges ; and
- Dry (250-400 mm/year) - Northern Sulaiman and Brahui ranges.

The temperature regime in Balochistan is determined to a great extent by the altitude. The cool temperate climate occurs above 2,000 meters altitudes. The areas between (1,300-2,000 m) have a temperate climate. The temperate region has one or more month per year with monthly mean temperature below 5°C. Mean annual temperatures are from 10-18°C. Frost and snow are common in winter. The continental low altitude belt and low lands have sub-tropical temperatures. This temperature regime has one or more months per annum with monthly means below 19°C but all monthly means above 5°C. Mean annual temperatures are between 18°C and 24°C. Frost and snow are rare.

Tropical temperatures prevail in the low mountain belt and low land facing the Arabian Sea. Winters in this region are mild; the mean maximum temperature of the coldest months is about 13°C. The mean annual temperature ranges between 29° C and 37°C.⁵⁶ The climatic conditions of Balochistan are as varied as the topography. In the plains and lower highlands, summers are very hot and winters mild. While in the upper highlands, winters are cold and summer temperatures relatively low.⁵⁷ Scorching hot winds and dust storms are quite common in the plains. The north-westerly wind, bitterly cold in winter but very hot in summer, blow across the western parts of the province, while still further west of Chagai the hot "Simoon" and the "120-days wind" (Bad-i-sad-o-hist roz) from Iran sweeps across the run-scorched terrain. The mean maximum temperature during the month of June is about 42°C, at Dal band in while at Sibi it is 46°C.⁵⁸ In winter, dry and cold wind locally known a "Kandhari hawa" blows from north in Quetta-Kalat region. This region is also covered with snow during winter season. The mean minimum temperature during the month of January is about -3°C at Quetta and 1°C at Zhob.⁵⁹ As the Balochistan province lies outside the influence of monsoons, rainfall is scanty and uncertain. Hardly any rain bearing clouds reaches the province during monsoon season. Only north-eastern fringes receive some precipitation, the highlands receive some rainfall and snow during winter season. Annual precipitation at Quetta is about 260 millimetres and at Barkhan is 398 millimetres.⁶⁰

4.2.2.1 Chagai District

⁵⁵ 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

⁵⁶ 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

⁵⁷ 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

⁵⁸ 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

⁵⁹ 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

⁶⁰ 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

The climate of Chagai District is extremely hot in summer and mild in the winter. The rainfall is irregular and scanty due to the district falls outside the sphere of monsoon currents. Rainy season is mostly in the month of January. However, a little rainfall is also recorded in the months of February, July and December (**Table 4.1**).⁶¹

Table 4.1: Rainfall (mm) and Temperature (°C) Chagai

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean	Total
Rainfall	70	2	0	0	0	n/a	0	1.7	0	0	0	9	7.5	82.7
Max Temp	13	20	32	35	42	46	45	41	39	36	27	22	33	-
MinTemp	0	-1	10	16	22	27	27	23	n/a	14	6	4	13	-

n/a: Data not available

4.2.2.2 Killa Abdullah District

The climate of Killa Abdullah District is generally dry and temperate. The summer is pleasant, whereas, the winters remain cold. The district lies outside the sphere of monsoon currents, so rainfall is irregular and scanty. At times, there are strong and cold winds hitting the area occasionally, occur in late spring, badly damaging the fruit orchards. Due to the irregular rainfall pattern, farmers of rain fed areas cannot properly plan their crops. However, roads can be used throughout the year due to the dry climate (**Table 4.2**).⁶²

Table 4.2: Rainfall (mm) and Temperature (°C) Killa Abdullah

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean	Total
Rainfall	58.8	46.3	68.5	38.8	5.4	0.3	19.4	23.9	6.8	2.7	3.5	33.8	25.6	308.2
Max Temp	11	13	18	24	31	35	36	34	32	25	21	14	25	-
MinTemp	-2	0	4	9	14	18	21	19	13	5	2	-1	8	-

4.2.2.3 Killa Saifullah District

The climate of Killa Saifullah, generally elevated at 1,500-2,200 meters above sea level, is semi-arid (steppe) kalt (cold). It can be placed in “warm summer and cool winter” temperature region. The summer is warm with mean temperatures ranging from 21°C to 32°C. June is the hottest month when mean maximum temperatures exceed 32°C but do not rise above 38°C, however, the mean temperature, even in the hottest month, remains below 32°C. The winter is cool and longer than summer. It lasts for about 7 months (October-April). In winter the mean temperature is below 10°C and in the coolest month (January) the mean monthly temperature drops below 10°C. Frost is common and the low temperature is caused by high elevation. Kan Mehterzai is at a height of 2,170 meters above sea level and remains snow-clad in January and February when mercury remains below freezing point during the cold spells. Nights are chilly and cold katabatic winds can confine the inhabitants to their homes (**Table 4.3**).⁶³

Table 4.3: Rainfall (mm) and Temperature (°C) Killa Saifullah

⁶¹ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

⁶² Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

⁶³ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean	Total
Rainfall	1	24.6	51.3	68.5	17.5	0	57.5	31	7.6	8	0	12.1	23.3	279
Max Temp	14	17	20	25	33	38	36	37	35	39	26	16	27	-
MinTemp	2	2	5	11	17	22	23	23	18	12	3	-2	11	-

4.2.2.4 Mastung District

The climate of District Mastung is dry hot summers and mild to chilling winters. The variation between day and night temperatures is wide in almost all parts of the district. Rainfall is inadequate in the area while snowfall is experienced in the valleys of Mastung and Dasht during winters. The Lack Pass Mountains are also covered with snow (Table 4.4).⁶⁴

Table 4.4: Rainfall (mm) and Temperature (°C) Mastung

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean	Total
Rainfall	55	48	37	15	6	3	3.1	14	2	0	3	19	19.4	205
Max Temp	9	12	16	22	27	31	32	31	28	23	17	13	22	-
MinTemp	-4	-2	2	6	10	13	16	15	9	4	-1	-4	6	-

4.2.2.5 Nushki District

The climate of Nushki District is extreme hot in summer and mild to severe cold in winters. The difference between day and night temperatures is considerable and the climatic conditions vary from area to area. Since, the district falls outside the sphere of monsoon currents; subsequently, the rainfall is irregular and scanty. Data for Nushki is not available for rainfall and temperature.⁶⁵

4.2.2.6 Pishin District

The climate of Pishin can be categorized as delightful summers, dry and bitterly cold winters. Pishin lies outside the sphere of monsoon currents. It encounters storms in winter season. Rainy season is mostly in the months of December, January, February, March and April (Table 4.5).⁶⁶

Table 4.5: Rainfall (mm) and Temperature (°C) Pishin

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean	Total
Rainfall	58.8	46.3	68.5	38.8	5.4	0.3	19.4	23.9	6.8	2.7	3.5	33.8	25.7	308
Max Temp	11	13	18	24	31	35	36	34	32	25	21	14	25	-
MinTemp	-2	0.1	4	9	14	18	21	19	13	5	2	-1	8	-

⁶⁴ Mastung - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

⁶⁵ Nushki - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

⁶⁶ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

4.2.2.7 Sherani District

The climatic data of District Sherani has been used from neighbouring District Zhob since no meteorological data on the climate of Sherani has been available. The climate of District Zhob is pleasant in summers and extreme cold in winters. In autumn season the weather becomes very dry. Rainy season is mostly in the months of June, July and August. It is accompanied by thunder storms from July to September as a result of diversion of monsoon winds westward from Punjab. The hilly areas at higher altitude receive heavy snow fall and snow storms during winters; however, dust storms are normal both in summer and winter (**Table 4.6**).⁶⁷

Table 4.6: Rainfall (mm) and Temperature (°C) Sherani

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean	Total
Rainfall	21	8	6	21.6	5.3	74.8	122	19	15	0	0	12	25.4	305
Max Temp	10	15	26	28	35	37	36	35	33	30	23	18	27	-
MinTemp	-5	-2	-6	-9	15	18	18	17	13	9	3	2	6	-

4.2.2.8 Zhob District

The climate of District Zhob is pleasant in summers and extreme cold in winters. In autumn season, the weather becomes very dry. Rainy season is mostly in the months of June, July and August accompanied by thunder storms from July to September as a result of diversion of monsoon winds westward from Punjab. The hilly areas at higher altitude receive heavy snow fall and snow storms during winters; however, dust storms blow in summer and winter (**Table 4.7**).⁶⁸

⁶⁷ Sherani - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

⁶⁸ Zhob - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

Table 4.7: Rainfall (mm) and Temperature (°C) Zhob

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean	Total
Rainfall	21	8	6	21.6	5.3	74.8	122	19	15	0	0	12	25.4	305
Max Temp	10	15	26	28	35	37	36	35	33	30	23	18	27	-
MinTemp	-5	-2	-6	-9	15	18	18	17	13	9	3	2	6	-

4.2.3 Surface Water Resources

All rivers and streams in Balochistan are part of three major drainage systems. Coastal drainage system is characterized by small, ephemeral streams and hill torrents. Rivers and streams that do not possess any significant perennial flow constitute inland system that dominates the central and north-western area of the province. Nari, Kaha and Gaj rivers are part of Indus drainage system located in the north-eastern margins of the province. The flow in rivers is typified by spring runoff and occasional flash floods. The rivers beds are dry and look like small streams. Stream gradients are high and the rate of run off is very rapid. The Zhob River Basin drains towards the northeast into the Gomol River which ultimately joins the Indus River. Streams along the border of Punjab and Sindh provinces flow toward the east and southeast into the Indus River. Central and western Balochistan drains towards the south and the southwest into the Arabian Sea. Some areas located in districts Chagai, Kharan, and Panjgur drain into playa lakes, locally called "Hamun" such as Humun-e-Lora and Hamun-e-Mashkel etc.⁶⁹ The important rivers in Balochistan are Zhob, Nari, Bolan, Pishin, Lora, Mula, Hub, Porali, Hingol, Rakshan and Dasht.⁷⁰ Balochistan is water starved and land rich area of Pakistan. Surface water mainly comes from precipitation in the form of surface runoff and its share of water from the Indus River. Surface water resources are very limited, except Naseer Abad and Jaffer Abad districts, which are fed by the pat Feeder, the Desert and Kirthar Canals emanating from Guddu and Sukkur Barrages on the Indus River. Remaining part of the province depends on rainfalls, tube-wells, Kareeze, flows, flood flows, hill torrent and diversions from non-perennials streams, which bring substantial runoff during the rainy seasons⁷¹.

4.2.3.1 Chagai /Nuski District

Nuski was previously part of Chagai and has been given status of a district recently, therefore, data of Chagai is indicative for Nushki. The drainage of the district is carried off by innumerable hill torrents known as Nawars or seasonal nullahs. With the exception of a few they contain water only after rains. In the eastern end of the district two noteworthy streams namely Kaisar and Lora, enter the district from the north. The former flows as perennial stream towards the south, while the latter flows in a south-western direction and then towards the west draining itself into lake basin known as Hamun-i-Lora. The other hill torrents in Chagai and Dalbandin include Bulu, Morjen, Girdi and Gaze. In the central part of the district i.e., area down-the eastern Chagai and western Koh-i-Sultan ranges, many such torrents flow down towards the south however, a few of them are able to reach the Hamun-i-Mashkel; the great lake basin on

⁶⁹ http://www.balochistan.gov.pk/index.php?option=com_content&view=article&id=37&Itemid=78. Assessed on Apr 20, 2018

⁷⁰ http://www.balochistan.gov.pk/index.php?option=com_content&view=article&id=37&Itemid=78. Assessed on Apr 20, 2018

⁷¹ Water Resources Management Research Issues in the Highlands of Balochistan, Report No. R92, Pakistan National Program, IWMI (July 1999)

the border with Kharan district. In the western part of the district besides the seasonal streams two rivers are of principal importance. One is Tahlab River, which flows along the southwest and southern boundary with Iran. In rainy season it has enough water to manage its channel to Hamun Mashkel. The other is Mirjawa River which originates in Iran and enters Chagai from southwest near Qila Sufed. It flows along the southern boundary with Iran for some distance.⁷²

4.2.3.2 Killa Abdullah District

There are no perennial streams or rivers in the district. However, some seasonal rivers and streams are found in the area. The Kurram River originates from the Toba Kakar range in the northern part of the district and flows from south-west to north-east. The other river is the Psein which flows from eastward and makes the boundary of the district with Afghanistan. A large number of hill torrents emerge from the Toba Kakar range and join the Psein River. The drainage of southern part of the district is from north-east to south-west. Many hill torrents join the Pishin Lora (river) which flows towards south-west and enters into Afghanistan. Other important streams are Shora Rud, Hanna, Khojak and Aranil Manda.⁷³

4.2.3.3 Killa Saifullah District

The main drainage is carried off from west to east by the Zhob River and its tributaries. The main tributaries are Kundar, Wali, Murgha Toi, Kamchughai, Rod Faqirzai and Marzaghan beside numerous hill torrents.⁷⁴

4.2.3.4 Mastung District

The important river of the district is Shirin Aab which flows, north to south, in the western half of the district. Another important river is Parri which flows near the south eastern boundary of the district. Other minor rivers and streams are Kangoi Jhal, Chunka Dhor, Bhalla Dhor and Zarakhu Nallah.⁷⁵

4.2.3.5 Pishin District

The drainage of the district in the upper part is towards the north and north-east while into lower part to the south-west. The Pishin Lora (river) flows in the south-western part of the district from north-east to south-west. The Surkhab River enters from eastern side and flows westward joining Pishin Lora River. The Barshore Lora flows towards west and also enters in Pishin Lora River. The Kurram River rises in the Toba Kakar range and enters into the district on the north-western corner and then flows towards the north into Pashin River which forms the boundary with Afghanistan. The Khush Dil Khan lake is in the north of Pishin city. A feeder cut from the Barshore River forms the chief source of supply of water to the Khush Dil Khan reservoir.⁷⁶

4.2.3.6 Sherani District

⁷² 1998 District Census Report of Chagai, Sep 1999, Population Census Organization, Statistics Division, GoP.

⁷³ 1998 District Census Report of Kill Abdullah, Sep 2000, Population Census Organization, Statistics Division, GoP.

⁷⁴ 1998 District Census Report of Killa Saifullah, Aug 2000, Population Census Organization, Statistics Division, GoP.

⁷⁵ 1998 District Census Report of Mastung, Jun 2000, Population Census Organization, Statistics Division, GoP.

⁷⁶ 1998 District Census Report of Pishin, Aug 2000, Population Census Organization, Statistics Division, GoP.

Sherani has also been give the status of the district recently therefore data is not available. It was part of the Zhob District.

4.2.3.7 Zhob District

The two principal drainage channels of the di strict are the Zhob and the Kundar rivers, both flows into the Gomal River. The general direction of the rivers is from south-west to north-east. The Zhob River rises at Tsari Mehtarzai pass, the watershed between Zhob and Pishin valley. From its source to its confluence with the Gomal it flows for a distance of about 400 kilometres. The broad plain of the Zhob River is occupied by the alluvial formation. The Kundar River rises from the central and highest point of the Toba Kakar range, a few kilometres north-east of the Sakir. It constitutes boundary between Pakistan and Afghanistan territory for a considerable length. The other subsidiary rivers or streams are the Baskan, Chukhan, Sri Toi, Sawar, Surab.⁷⁷

4.2.4 Ground Water Resources

Ground water resources divide into three hydrological regions in Balochistan: the Nari Basin, the Kharan closed Basin and the Makran Coast, which constitute approximately 73 small or large rivers and streams. Project districts fall in sub-basin Hamun-e-Lora, Hamun-e-Mashkel, Kadanai River, Pishin River and Zhob River. According to an estimate the total water potential of the province are 22.116 million acre feet (MAF) originating from the following sources:⁷⁸

- | | |
|------------------------------------|------------------------------------|
| A. Indus Water as per Indus Accord | B. Non-Indus Basin Water Potential |
| a. Perennial Flow = 3.87 MAF | a. Flood Runoff = 12.756MAF |
| b. Flood flow = 4.620 MAF | b. Ground Water = 0.87 MAF |

The ground water potential of the province has estimated in terms of flow⁷⁹ at 1,116 cusecs (cubic feet per second), while 687 cusecs were already utilised, which leaves 429 cusecs for future development. Ground water is the essential renewable natural resource in most part of Balochistan. Decline of water table of the province is due to over 2-3 m per year⁸⁰. At this stage in the semi-arid Province of Balochistan groundwater use exceeds recharge with 22% – see **Table 4.8** in which 5 sub-basins groundwater use is overused. The Pishin Lora – of which Kuchlagh is part – accounts for the largest imbalance with consumption a factor 4 higher than recharge. Almost all use is for agriculture.

⁷⁷ 1998 District Census Report of Zhob, Jul 2000, Population Census Organization, Statistics Division, GoP

⁷⁸ <http://siteresources.worldbank.org/PAKISTANEXTN/Resources/293051-1114424648263/Session-VII-Nadir.pdf>

⁷⁹ <http://waterinfo.net.pk/cms/?q=node/77>

⁸⁰ IRRIGATION DEPARTMENT GOVERNMENT OF BALOCHISTAN



Figure 4.10 Ground Water Basins of Balochistan

Table 4.8: Annual water balance sub-basins of Project Districts (billion m³) ⁸¹

Province	Water source	Recharge/flow		Total use		Balance
Balochistan	Groundwater (% of total)	2.210	(17)	2.659	(54)	-0.459
	Surface water	10.793		2.221		8.572
Sub-basins						
	Surface water	0.546		0.064		0.482
Hamun-e-Lora	Groundwater (% of total)	0.040	(17)	0.141	(83)	-0.101
	Surface water	0.189		0.028		0.161
Hamun-e-Mashkel	Groundwater (% of total)	0.300	(13)	0.027	(8)	0.273
	Surface water	2.078		0.312		1.766
	Surface water	1.902		0.634		1.268
Kadanai River Basin	Groundwater (% of total)	0.030	(28)	0.115	(92)	-0.085
	Surface water	0.077		0.01		0.067
	Surface water	0.817		0.126		0.691
Pishin River Basin	Groundwater (% of total)	0.170	(36)	0.566	(77)	-0.396
	Surface water	0.302		0.169		0.133
	Surface water	0.320		0.034		0.286
Zhob River Basin	Groundwater (% of total)	0.160	(37)	0.270	(71)	-0.110

⁸¹ Halcrow (2007)

With the changing climatic conditions and the drought prevailing over the past several years has created acute water shortage and endangered the sustainability of this precious resource. Drinking water is scarce in the target districts and people have to travel 1.5 km on average to get drinking water. With the exception of Killa Abdullah district, women are mainly responsible for fetching water in all target districts. All districts were reported to be significantly affected by water scarcity⁸².

The focus of the groundwater exploitation in the province had been the three hydrological basins being densely populated and having greater potential for development. These are Pishin Lora Basin (PLB), Nari River Basin (NRB), and Zhob River Basin (ZRB) out of which two fall in project districts. Due to unplanned tube-wells installation and subsequent indiscriminate pumping of water for the last two and a half decades, the area is now facing problem of depleting groundwater table at the rate of more than four to five meters annually in many of its aquifers and hence tube-wells drying is a common phenomenon.

Overall the water table of the project districts is from 1300 to 1400 feet⁸³. However, the groundwater data acquired for the project districts is highly variable. Water table fluctuates between 130 and 470 feet in Killa Abdullah 100 and 436 feet in Killa Saifullah, 114 and 515 feet in Mastung, 65 and 360 feet in Nushki-Chagai and between 46 and 210 feet in Zhob. The greatest drop was observed in Mastung, where the difference between maximum and minimum water table was found to be 401 feet whereas the minimum drop was observed in Zhob district where the difference between maximum and minimum water table was found to be 164 feet. The groundwater level data of Nushki, Pishin and Sherani districts could not be obtained. Nushki was separated from Chagai and made a district in 2004, whereas Sherani was separated from Zhob and made a district in 2006. Therefore groundwater level data of Chagai-Nushki districts and Zhob-Sherani districts is presented with a summary of the minimum, maximum, and average groundwater table of each district in **Figure 4.11**⁸⁴. Balochistan has experiencing drought in history. Rain is the main source of water for irrigation and drinking in major areas. In some areas, tube well water is used and the water level is rapidly decreasing. Karezes, water reservoirs and lakes of the area have also dried.⁸⁵ The main source of drinking water is groundwater, with the majority of households served by electric or diesel generated tube wells/piped schemes. A minimal amount of water available to all hand pumps where water table is within 50 feet that goes down to 500 feet tube wells. Large number of people in rural areas depend on water from ponds and other un-hygienic sources.

⁸² Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & FATA

⁸³ Stakeholder Consultation Session for BLEP June 2018

⁸⁴ Directorate of Ground Water Resources, Irrigation Department Balochistan

⁸⁵ Islamic Relief drought assessment report district - Chagai Balochistan 2-6 May 2000

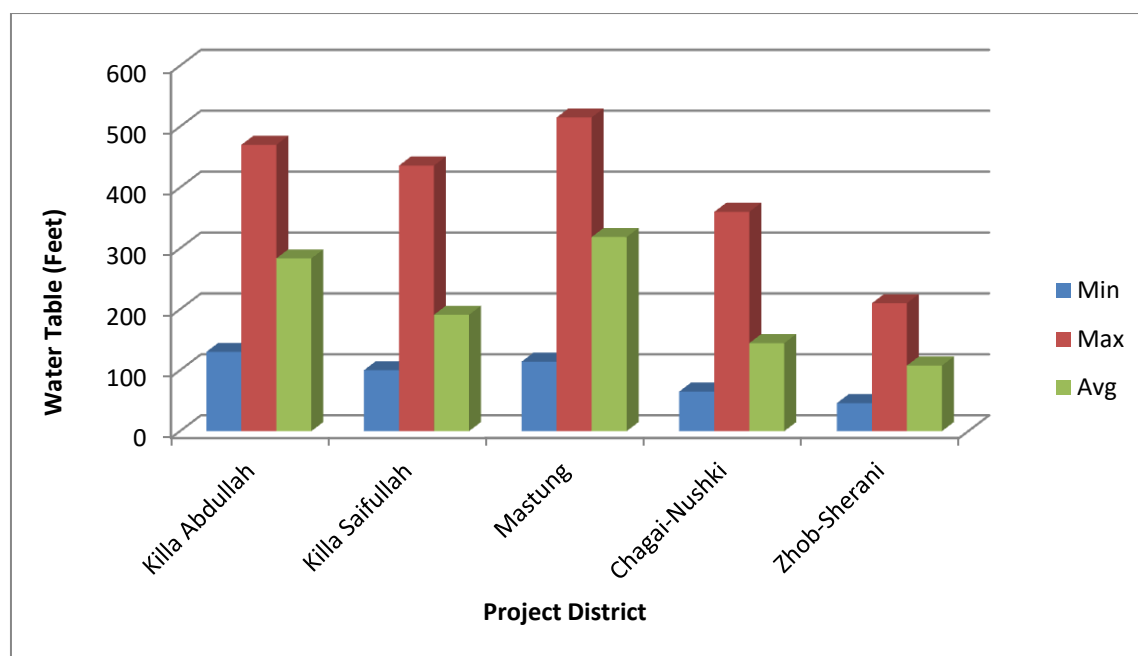


Figure 4.11: Summary of the groundwater table data for Project Districts

4.2.5 Ground Water Quality

As per information gathered in 1998 Housing Census, the facility of piped water both inside and outside the houses is available to 36.41% of the housing units in the district. The hand pumps, wells and ponds are other common sources of drinking water both in urban and rural areas inside or outside the houses.⁸⁶ The UN agencies with financial assistance of Government of Japan and European Union have been significantly working on providing clean drinking water by installing solar water pumps and hand pumps in the UCs of Chagai, Ziarat Balanosh, Chilghazi and some other areas under Refugee Affected and Hosting Areas (RAHA) programme for last few years.⁸⁷ According to MICS Balochistan 2004, 75% of the population had access to improved drinking water source.^{88,89} Water quality analysis of four major cities of Balochistan i.e. Quetta, Khuzdar, Loralai and Ziarat were carried out by National Water Quality Monitoring Program (NWQMP) in which total 66 water sources were monitored.⁹⁰ The results are indicative of water quality of Balochistan. In Khuzdar and Loralai, 91 percent of water samples were found unsafe due to bacteriological contamination. In Quetta, 76 percent samples were unsafe, mainly due to bacteriological contaminants, excessive iron, fluoride and nitrate content. Only eight sources out of 34 were supplying safe drinking water in Quetta. The worst water quality situation was recorded in Ziarat, where all the 10 selected sources were contaminated.⁹¹ It is assumed that the use of agro chemicals, both fertilizers and pesticides also requires attention especially in the ground water irrigated vegetables and fruit cultivation. Persistent pesticides with human and

⁸⁶ 1998 District Census Report of Chagai, Sep 1999, Population Census Organization, Statistics Division, GoP.

⁸⁷ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

⁸⁸ Balochistan MISC, 2004.

⁸⁹ Improved sources" include piped water, public standpipe or tap, hand pump, donkey pump/turbine or protected dug well.

⁹⁰ PCRWR

⁹¹ Pakistan Council of Research in Water Resources, NWQMP, Fifth Monitoring Report (2007)

environmental health hazards are probably used in the orchards, which could find back into the aquifers, used for drinking purposes. Therefore, monitoring of ground water quality is important for sub projects districts.

4.2.5.1 District Chagai

Recently conducted study by the World Bank supported Balochistan Education Project at sample schools in the district indicates that the water table is at 300 to 600 feet in district Chagai. The results of groundwater analysis signified high concentrations of Turbidity, TDS, Sodium, Hardness, Chloride and Sulphate in the groundwater collected from four sites (**Table 4.9**). The Physical parameters such as colour, odour and taste were also recorded to be unpleasant at all four sites except site 1 and site 4 where the odour and taste is non objectionable. Further testing for Microbial parameters was conducted to determine biological contamination in collected samples. Microbial parameter at all four locations is positive indicating bacterial contamination in the water which makes it unsafe for human consumption. Higher concentration of sodium and TDS in the water is representative of salinity.

Table 4.9: Ground Water Quality of Chagai

Parameters	Site 1 Primary School Killi M. Ibrahim Sargesha	Site 2 Primary School Khuda Murad Colony	Site 3 Primary School Killi Noorullah Kani	Site 4 Primary School Abdul Kareem (Loos)	Average	Standard
Sampling Depth (Ft)	300 to 600	300 to 600	300 to 600	300 to 600		
Turbidity (NTU)	11.1	8.2	8.8	5.7	8.5	5 (WHO)
TDS(mg/l)	915	4289	2374	856	2108.5	1000 (WHO)
Bicarbonate(mg/l)	180	120	400	190	222.5	NGVS
Alkalinity (mg/l)	3.6	2.4	8.0	3.8	4.45	NGVS
Carbonate (mg/l)	0	0	0	0	0	NGVS
Potassium (mg/l)	7	15	13	5	10	12 (EC)
Sodium (mg/l)	204	960	498	190	463	200 (WHO)
Calcium (mg/l)	60	220	124	88	123	NGVS
Magnesium (mg/l)	38.9	209.0	143.4	19.4	102.6	150 (WHO)
Hardness (mg/l)	310	1410	900	300	730	500 (WHO)
Chloride (mg/l)	202	1598	647	221	667	250 (WHO)
Sulphate (mg/l)	284	1204	699	213	600	250 (WHO)
Nitrate-N(mg/l)	2.3	2.2	2.2	1.3	2	10 (WHO)
Fluoride	0.87	1.09	0.93	1.21	1.025	1.5 (WHO)
pH	7.94	7.59	7.64	7.59	7.69	6.5-8.6
Conductivity (µS/cm)	1435	7090	3705	1421	3412.7	NGVS
Colour	Objectionable	Objectionable	Objectionable	Objectionable		Colourless
Odour	Unobjectionable	Objectionable	Objectionable	Unobjectionable		Odourless
Taste	Unobjectionable	Objectionable	Objectionable	Unobjectionable		Tasteless

Parameters	Site 1 Primary School Killi M. Ibrahim Sargsha	Site 2 Primary School Khuda Murad Colony	Site 3 Primary School Killi Noorullah Kani	Site 4 Primary School Abdul Kareem (Loos)	Average	Standard
Contamination	Positive	Positive	Positive	Positive		Negative

4.2.5.2 District Killa Abdullah

As per information gathered in the 1998 Census, the facility of drinking water inside the house is available to 66.79% of the housing units, while 33.21% of the housing units use outside source as drinking water. The facility inside the house is significantly higher in the urban areas as compared to the rural areas, whereas the facility outside the house is higher in rural areas as compared to the urban areas. The water to the households is supplied through pipes, hand pumps and wells.⁹² The water supply is available only in urban areas under the water regulatory, and is maintained by 21 staff members. The inspection and control of private sources of water supply could not be known. According to MICS Balochistan 2004, 44% of the population in district had access to improved water source.⁹³ Recently conducted study by the World Bank supported Balochistan Education Project indicates that the water table is at 500 to 800 feet. The results of groundwater analysis conducted in a sample of schools under the Balochistan Education Project signified slightly high concentrations of Turbidity and Sulphate in the groundwater collected from four sites (**Table 4.10**). The Physical parameters such as colour, odour and taste were also recorded and find them pleasant except at site 1 and site 2 where the colour is unpleasant. Further testing for Microbial parameters was conducted to determine biological contamination in collected samples. Microbial parameter at all four locations is positive indicate bacterial contamination in the water which makes it unsafe for human consumption.

Table 4.10: Ground Water Quality of Killa Abdullah

Parameters	Site 1 Primary School Killi Haji M. Gul Dhayan	Site 2 Primary School Killi Dost M.Ada Khol	Site 3 Primary School Khawaja Noor	Site 4 Primary School Haji Murda Karez Purana	Average	Standard
Sampling Depth	500 to 800	500 to 800	500 to 800	500 to 800		
Turbidity (NTU)	9.2	9.0	9.1	1.4	7	5 (WHO)
TDS(mg/l)	959	990	448	520	729	1000 (WHO)
Bicarbonate(mg/l)	300	240	260	300	275	NGVS
Alkalinity (mg/l)	6.0	4.8	5.2	6.0	5.5	NGVS
Carbonate (mg/l)	0	0	0	0	0	NGVS
Potassium (mg/l)	2	2	3	2	2.25	12 (EC)
Sodium (mg/l)	180	184	114	79	139	200 (WHO)
Calcium (mg/l)	48	44	36	36	41	NGVS
Magnesium (mg/l)	80.2	85.1	53	53	68	150 (WHO)
Hardness (mg/l)	450	460	310	310	382	500 (WHO)
Chloride (mg/l)	188	202	35	30	114	250 (WHO)

⁹² 1998 District Census Report of Killa Abdullah Sep 2000, Population Census Organization, Statistics Division, GoP.

⁹³ Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

Parameters	Site 1 Primary School Killi Haji M. Gul Dhayan	Site 2 Primary School Killi Dost M.Ada Khol	Site 3 Primary School Khawaja Noor	Site 4 Primary School Haji Murda Karez Purana	Average	Standard
Sulphate (mg/l)	273	309	283	150	254	250 (WHO)
Nitrate-N(mg/l)	1.7	4.6	1.6	1.5	2	10 (WHO)
Fluoride	0.60	0.61	0.02	0.22	0.36	1.5(WHO)
pH	7.9	8.06	8.0	8.0	8.0	6.5-8.6
Conductivity (µS/cm)	1549	1714	700	813	1194	NGVS
Colour	Objectionable	Objectionable	Unobjectionable	Unobjectionable		Colourless
Odour	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable		Odourless
Taste	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable		Tasteless
Contamination	Positive	Positive	Positive	Positive		Negative

4.2.5.3 District Killa Saifullah

As per information gathered in the 1998 Census, the facility for drinking water inside the house is available to 23.04% of the housing units, while 76.96% of the housing units use outside source as drinking water. The facility inside the house is significantly higher in the urban areas as compared to the rural areas, where the majority of the households are depending on the source of drinking water outside the house. The water to the households is supplied through pipes, hand pumps and wells.⁹⁴ According to MICS Balochistan 2004, 45% of the population had access to improved drinking water source.⁹⁵ Recently conducted study by the World Bank supported Balochistan Education Project indicates that the water table is at 150 to 400 feet in district Killa Saifullah. The results of groundwater analysis conducted in a sample of schools under the Balochistan Education Project signified high concentrations of Turbidity in the groundwater collected from five sites (**Table 4.11**). The Physical parameters such as colour, odour and taste were also recorded and find them pleasant at all five sites. Further testing for Microbial parameters was conducted to determine biological contamination in collected samples. Microbial parameter at all five locations is positive indicate bacterial contamination in the water which makes it unsafe for human consumption.

Table 4.11: Ground Water Quality of Killa Saifullah

Parameters	Site 1 Primary School Baqi Karezgai	Site 2 Primary School Nazar Muhammad	Site 3 Primary School Sara Ghara	Site 4 Primary School New Ada Zhara Rasheed Daman	Site 5 Primary School Killi Petawzai	Average	Standard
Sampling depth (Ft)	150 to 400	150 to 400	150 to 400	150 to 400			
Turbidity (NTU)	8.4	8.3	8.5	7.2	8.6	8.2	5 (WHO)
TDS(mg/l)	411	282	333	435	819	456	1000 (WHO)
Bicarbonate	180	165	210	270	270	219	NGVS

⁹⁴ 1998 District Census Report of Killa Saifullah Aug 2000, Population Census Organization, Statistics Division, GoP.

⁹⁵ Balochistan MISC, 2004.

Alkalinity (mg/l)	3.6	3.3	4.2	5.4	5.4	4	NGVS
Carbonate (mg/l)	0	0	0	0	0	0	NGVS
Potassium (mg/l)	1	1	1	2	4	2	12 (EC)
Sodium (mg/l)	57	23	26	34	64	41	200 (WHO)
Calcium (mg/l)	32	24	44	48	92	48	NGVS
Magnesium (mg/l)	43.7	41.3	29	46	66	45	150 (WHO)
Hardness (mg/l)	260	230	230	310	500	306	500 (WHO)
Chloride (mg/l)	77	50	20	25	55	45	250 (WHO)
Sulphate (mg/l)	90	38	50	95	330	121	250 (WHO)
Nitrate-N(mg/l)	0.7	1.5	1.4	1.3	1.4	1	10 (WHO)
Fluoride	0.43	0.41	0.1	0.11	0.65	0.34	1.5 (WHO)
pH	7.22	7.08	7.8	7.3	7.3	7.3	6.5-8.6
Conductivity (µS/cm)	700	508	520	680	1219	725	NGVS
Colour	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable			Colourless
Odour	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable			Odourless
Taste	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable			Tasteless
Contamination	Positive	Positive	Positive	Positive	Positive		Negative

4.2.5.4 District Mastung

As per information gathered in the 1998 Census, the facility of drinking water inside the house is available to 42.82% of the housing units, while 57.18% of the housing units use outside source as drinking water. The facility inside the house is significantly higher in the urban areas as compared to the rural areas, where the majority of the households are depending on the source of drinking water outside the house. The water to the households is supplied through pipes, hand pumps and wells.⁹⁶ According to MICS 2004, 47% of the population has access to improved water source.⁹⁷ Recently conducted study by the World Bank supported Balochistan Education Project indicates that the water table is at 300 to 700 feet in district Mastung. The results of groundwater analysis conducted in a sample of schools under the Balochistan Education Project signified minor concentrations of Turbidity in the groundwater collected from four sites (**Table 4.12**). The Physical parameters such as colour, odour and taste were also recorded and found them pleasant at all four sites except at site 2 where the colour is unpleasant. Further testing for Microbial parameters was conducted to determine biological contamination in collected samples. Microbial parameter at all four locations is positive indicate bacterial contamination in the water which makes it unsafe for human consumption.

Table 4.12: Ground Water Quality of Mastung

Parameters	Site 1	Site 2	Site 3	Site 4	Average	Standard
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⁹⁶ 1998 District Census Report of Mastung Jun 2000, Population Census Organization, Statistics Division, GoP.

⁹⁷ Balochistan MISC, 2004.

	Nawabzada Haqmal Raisani	Killi Sheikh Hussaini Haji M. Alim	Killi Bangulzai	Killi Abdul Karim Qalandrani		
Sampling Depth (Ft)	300 to 700	300 to 700	300 to 700	300 to 700	-	-
Turbidity (NTU)	4.1	10.7	0.9	4.9	5.1	5 (WHO)
TDS(mg/l)	269	294	346	355	316	1000 (WHO)
Bicarbonate(mg/l)	160	140	160	180	160	NGVS
Alkalinity (mg/l)	3.2	2.8	3.2	3.6	3.2	NGVS
Carbonate (mg/l)	0	0	0	0	0	NGVS
Potassium (mg/l)	0	1	1	1	0.75	12 (EC)
Sodium (mg/l)	22	32	26	37	29	200 (WHO)
Calcium (mg/l)	40	28	36	36	35	NGVS
Magnesium (mg/l)	24	32	51	41	37	150 (WHO)
Hardness (mg/l)	200	200	290	260	237	500 (WHO)
Chloride (mg/l)	12	12.3	34	15	18	250 (WHO)
Sulphate (mg/l)	62	110	140	130	110	250 (WHO)
Nitrate-N(mg/l)	1.8	1.1	1.2	1.5	1.4	10 (WHO)
Fluoride	0.47	1.32	0.43	0.32	0.63	1.5 (WHO)
pH	7.8	7.8	7.3	7.7	7.7	6.5-8.6
Conductivity (μ S/cm)	420	460	540	524	486	NGVS
Colour	Unobjectionable	Objectionable	Unobjectionable	Unobjectionable		Colourless
Odour	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable		Odourless
Taste	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable		Tasteless
Contamination	Positive	Positive	Positive	Positive		Negative

4.2.5.5 District Nushki

The water supply record is not available at the district level. Recently conducted study in a sample of schools under the World Bank supported Balochistan Education Project indicates that the water table is at 500 to 700 feet in district Nushki. The results of groundwater analysis signified high concentrations of Turbidity and Sulphate in the groundwater collected from four sites. The Physical parameters such as colour, odour and taste were also recorded and find them pleasant at all four sites except at site 1, site 2 and site 3 where the colour is unpleasant. Further testing for Microbial parameters was conducted to determine biological contamination in collected samples. Microbial parameter at all four locations is positive indicating bacterial contamination in the water which makes it unsafe for human consumption.

Table 4.13: Ground Water Quality of Nushki

Parameters	Site 1 Primary School Killi Abdul Samad	Site 2 Primary School Killi Sakhi Rehman Mal	Site 3 Primary School Killi Baghak Mandi	Site 4 Primary School Killi Haji M. Thana Mall	Average	Standard
Water Depth(ft.)	500 to 700	500 to 700	500 to 700	500 to 700		
Turbidity (NTU)	8.9	9.6	9.3	4.2	8	5 (WHO)
TDS (mg/l)	532	1105	1326	536	874	1000 (WHO)
Bicarbonate(mg/l)	179	140	290	140	187	NGVS

Alkalinity (mg/l)	3.6	2.8	5.8	2.8	4	NGVS
Carbonate (mg/l)	0	0	0	0	0	NGVS
Potassium (mg/l)	3	7	2	1	3	12 (EC)
Sodium (mg/l)	131	224	180	116	163	200 (WHO)
Calcium (mg/l)	36	60	48	40	46	NGVS
Magnesium (mg/l)	21.9	55.9	155.5	26.7	65	150 (WHO)
Hardness (mg/l)	180	300	760	210	362	500 (WHO)
Chloride (mg/l)	129	225	216	117	172	250 (WHO)
Sulphate (mg/l)	96	443	546	146	308	250 (WHO)
Nitrate-N(mg/l)	1.7	1.5	1.0	1.3	1.3	10 (WHO)
Fluoride	0.79	0.85	0.86	0.97	0.86	1.5 (WHO)
pH	8.1	8.0	8.0	8.4	8	6.5-8.6
Conductivity (µS/cm)	855	1706	2250	854	1416	NGVS
Colour	Objectionable	Objectionable	Objectionable	Unobjectionable		Colourless
Odour	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable		Odourless
Taste	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable		Tasteless
Contamination	Positive	Positive	Positive	Positive		Negative

4.2.5.6 District Pishin

The main source of drinking water in Pishin is groundwater, with the majority of households served by electric or diesel generated tube wells/piped schemes. A minimal amount of water available through hand pumps and tube wells. Large number of people in rural areas depends on water from ponds and other un-hygienic sources.⁹⁸ Recently conducted study in a sample of schools by the World Bank supported Balochistan Education Project indicates that the water table is at 500 to 800 feet. The results of the water analysis indicate slightly higher levels of turbidity, hardness and sulphate in the water samples from four sites (**Table 4.14**). The total dissolved solids in the water are also high. Physical parameters were not up to the standards of colour odour and taste. Microbial parameter is positive indicate bacterial contamination in the water which makes it unsafe for human consumption.

Table 4.14: Ground Water Quality of Pishin

Parameters	Site 1 Govt. Girls Primary School Mulyan Nali	Site 2 Killi Baz M. Gawal-1	Site 3 Daman Kamalrai	Site 4 Killi Haji Attaullah Tekdar Chaman Road	Average	Standard
Sampling depth(ft.)	500 to 800	500 to 800	500 to 800	500 to 800		
Turbidity (NTU)	9.3	10.2	0.4	8.5	7	5 (WHO)
TDS(mg/l)	1216	518	579	2048	1090	1000 (WHO)
Bicarbonate(mg/l)	140	200	200	280	205	NGVS
Alkalinity (mg/l)	2.8	4	4	5.6	4	NGVS
Carbonate (mg/l)	0	0	0	0	0	NGVS
Potassium (mg/l)	4	0	2	8	4	12 (EC)
Sodium (mg/l)	240	42	58	380	180	200 (WHO)
Calcium (mg/l)	48	44	40	80	53	NGVS
Magnesium (mg/l)	78	66	53	190	97	150 (WHO)
Hardness (mg/l)	440	380	320	980	530	500 (WHO)
Chloride (mg/l)	330	50	20	360	190	250 (WHO)
Sulphate (mg/l)	410	210	210	1140	493	250 (WHO)
Nitrate-N(mg/l)	0.9	1.9	1.1	1.6	1	10 (WHO)
Fluoride	0.11	0.05	0.84	0	0	1.5(WHO)
pH	8.15	8.27	7.48	7.51	8	6.5-8.6
Conductivity (µS/cm)	1900	810	905	3200	1704	NGVS
Colour	objectionable	objectionable	unobjectionable	objectionable		colourless
Odour	Unobjectionable	unobjectionable	unobjectionable	Objectionable		odourless
Taste	Unobjectionable	unobjectionable	unobjectionable	Objectionable		tasteless
Contamination	Positive	Positive	Positive	Positive		Negative

⁹⁸ Pishin District Government (2011). Pishin - Integrated District Development Vision. IUCN Pakistan, Quetta, Pakistan. xii+100 pp.

4.2.5.7 District Sherani

The water supply record is not available at the district level. Recently conducted study in a sample of schools by the World Bank supported by Balochistan Education Project indicates water table at 100 to 250 feet depth in district Sherani. The results of groundwater analysis obtained from this depth signifies high concentrations of Turbidity in the groundwater collected from four sites (**see Table 4.15**). The Physical parameters such as colour, odour and taste were also recorded and find them pleasant at all four sites except at site 2 and site 4 where the colour is unpleasant. Further testing for Microbial parameters was conducted to determine biological contamination in collected samples. Microbial parameter at all four locations is positive indicate bacterial contamination in the water which makes it unsafe for human consumption.

Table 4.15: Ground Water Quality of Sherani

Parameters	Site 1 Primary School Mehmoodabad Walo Akram	Site 2 Primary School Khan Alam Kapip	Site 3 Primary School Nghezha Lwarra	Site 4 Primary School Zarina Meena Khan Meer	Average	Standard
Sampling Depth(ft.)	100 to 250	100 to 250	100 to 250	100 to 250		
Turbidity (NTU)	6.4	9.5	8.2	8.3	8	5 (WHO)
TDS(mg/l)	294	316	563	404	394	1000 (WHO)
Bicarbonate(mg/l)	160	150	200	120	157	NGVS
Alkalinity (mg/l)	3.2	3.0	4	2.4	3.1	NGVS
Carbonate (mg/l)	0	0	0	0	0	NGVS
Potassium (mg/l)	1	2	5	1	2	12 (EC)
Sodium (mg/l)	28	48	52	66	48	200 (WHO)
Calcium (mg/l)	44	64	68	48	56	NGVS
Magnesium (mg/l)	22	10	24	7	16	150 (WHO)
Hardness (mg/l)	200	200	270	150	205	500 (WHO)
Chloride (mg/l)	32	54	61	32	45	250 (WHO)
Sulphate (mg/l)	50	709	96	116	243	250 (WHO)
Nitrate-N(mg/l)	1.4	2.1	1.9	2.1	1.8	10 (WHO)
Fluoride	0.36	0.96	0.48	0.24	0.5	1.5 (WHO)
pH	7.9	7.9	8.1	8.1	8	6.5-8.6
Conductivity (µS/cm)	460	496	880	631	617	NGVS
Colour	Unobjectionable	Objectionable	Unobjectionable	Objectionable		Colourless
Odour	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable		Odourless
Taste	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable		Tasteless
Contamination	Positive	Positive	Positive	Positive		Negative

4.2.5.8 District Zhob

As per information gathered in 1998 Housing Census, the facility of drinking water inside the house is available to 39.24% of the housing units, while 60.76% of the housing units use outside source as drinking water. The facility inside the house is significantly higher in the urban areas as compared to the rural areas, where the

majority of the households are depending on the source of drinking water outside the house.⁹⁹ There is one outlet facility of regulate water supply equipped with one water tanker and two staff members.¹⁰⁰ According to MICS Balochistan 2004, 46% population had access to improved water source.¹⁰¹ Recently conducted study in a sample of schools by the World Bank supported Balochistan Education Project indicates that the water table in district Zhob is at 150 to 200 feet. The results of groundwater analysis signified high concentrations of turbidity collected from four sites (**Table 4.16**). The Physical parameters such as colour, odour and taste were also recorded and find them pleasant at all four sites except at site 1, site 2 and site 3 where the colour is unpleasant. Further testing for Microbial parameters was conducted to determine biological contamination in collected samples. Microbial parameter at all four locations is positive indicate bacterial contamination in the water which makes it unsafe for human consumption.

Table 4.16: Ground Water Quality of Zhob

Parameters	Site 1 Primary School Killi Gurjezai	Site 2 Primary School Killi Skhaya	Site 3 Killi Orghar	Site 4 Killi Plan	Average	Standard
Sampling Depth	150 to 200	150 to 200	150 to 200	150 to 200		
Turbidity (NTU)	7.8	13	13.3	7.5	10	5 (WHO)
TDS (mg/l)	543	232	308	728	453	1000 (WHO)
Bicarbonate(mg/l)	210	110	110	310	185	NGVS
Alkalinity (mg/l)	4.2	2.2	2.2	6.2	3.7	NGVS
Carbonate (mg/l)	0	0	0	0	0	NGVS
Potassium (mg/l)	1	1	1	3	1.5	12 (EC)
Sodium (mg/l)	100	26	40	68	58	200 (WHO)
Calcium (mg/l)	48	32	36	178	73	NGVS
Magnesium (mg/l)	34	18	24	11	22	150 (WHO)
Hardness (mg/l)	260	156	190	490	274	500 (WHO)
Chloride (mg/l)	81	36	59	112	72	250 (WHO)
Sulphate (mg/l)	153	51	80	125	102	250 (WHO)
Nitrate-N(mg/l)	0.2	0.4	0.4	0.3	0.3	10 (WHO)
Fluoride	0.9	0	0.8	0.27	0.5	1.5 (WHO)
pH	7.08	7.18	8.4	6.9	7.3	6.5-8.6
Conductivity (µS/cm)	880	390	508	1138	729	NGVS
Colour	Objectionable	Objectionable	Objectionable	Unobjectionable		Colourless
Odour	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable		Odourless
Taste	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable		Tasteless
Contamination	Positive	Positive	Positive	Positive		Negative

4.2.6 Natural Hazard Vulnerability

Balochistan has been traditionally vulnerable to natural disasters on account of its unique geo-climatic conditions. Earthquakes, floods, droughts, cyclones, and landslides have been recurrent phenomena. Cyclone Yemyen, Ziarat Earthquake and Floods 2010 sufficiently highlighted Balochistan's vulnerability to sea based cyclones, earthquakes, flash & riverine floods caused by heavy precipitation. Southern part of Balochistan has faced floods, tsunami and cyclones in past primarily near the coastline which is not included in project districts. The project districts are prone to earthquake and drought

⁹⁹ 1998 District Census Report of Zhob, Jul 2000, Population Census Organization, Statistics Division, GoP.

¹⁰⁰ Zhob - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

¹⁰¹ Balochistan MISC, 2004.

considering natural hazards. The province has faced the longest drought from 1997 to 2007 depleting the water resources of the country. District Kalat, Chagai Nukundi and Zhob were severely affected. A seismic map demonstrating seismic zones of Balochistan is given in **Figure 4.12**.¹⁰² Most recently, an earthquake of magnitude 4.8 Richter scale was recorded in Kalat and Quetta on 26th May 2012 while the field assessment was underway for this study According to this map, most parts of the Balochistan province lie in the Earthquake Zones Classification of the Uniform Building Code (UBC – 1997).¹⁰³ Severe damage Zone 4- includes project district Pishin, Nushki and Killa Abdullah. Chagai lies in minor to moderate damage Zone-2 while Killa Abdullah, Mastung, Loralai and Zhob lie in Zone 3 - moderate damage. The geological and seismological features of this zone are almost similar to those of Zone 2.⁷⁶

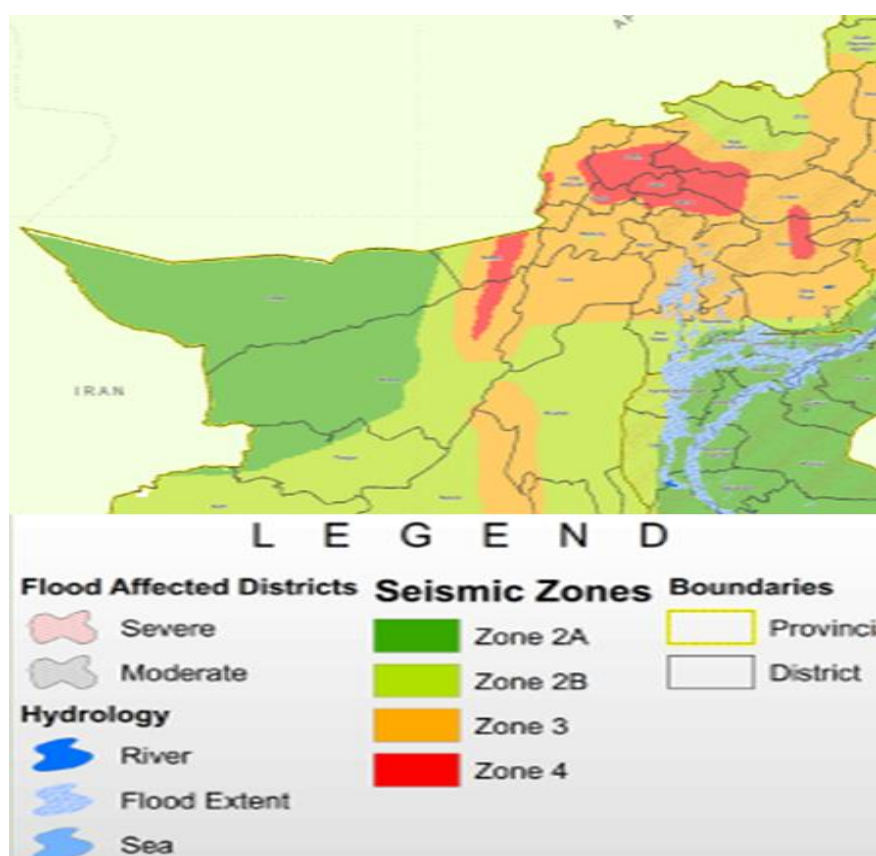


Figure 4.12: Seismic Zones of Pakistan

4.2.7 Ambient Air Quality

There is dearth of air quality data in project districts therefore the air quality baseline will be conducted at implementation stage to assess the pollution concentrations in ambient air according to EQS Balochistan. However, generally observed air pollution situation in other cities such as Pishin, and Zhob was comparatively less than the capital city of Quetta. Pak EPA carried out monitoring of ambient air quality in Quetta in May 2011 and reported daily mean value for SO₂, NO, NO₂, CO and O₃ satisfied the standards value of WHO limits, while PM_{2.5} values mostly exceeded standard. Air pollution in

¹⁰² National Disaster Management Authority

¹⁰³ <http://allaboutgeology.blogspot.com/2011/04/seismicity-with-reference-to-pakistan.html>

other project districts has not been measured and reported. Therefore, monitoring of air quality is important in for sub-project districts to evaluate the baseline conditions. Although, neither industrial pollution nor agro-chemical pollution have been reported in Balochistan but several sources of particulate matter and GHG to are suspected¹⁰⁴.

4.3 Ecological Environment

Balochistan covers an area of 88.2 million ha (GoP, 2000)¹⁰⁵ and hosts a wide range of ecosystems / habitat types and associated biological diversity due to its unique geographical and climatic conditions. There are snow covered peaks, lush green as well as barren mountains, forests, irrigated plains, riverine tracts, sand dunes and deserts and coastal areas. With its dramatic geological history, broad latitudinal spread and immense altitudinal range, Balochistan spans a remarkable number of the world's ecological regions⁸⁴. Balochistan represents faunal elements from three Zoogeographical regions of the world including Oriental, Palaearctic and Ethiopian¹⁰⁶.

4.3.1 Biodiversity /Ecological Zones of Project Districts

Balochistan province of Pakistan is noted for its unique ecological profile with extremely dry desert climate in south western region, huge, ancient Junipers marking the largest remaining Juniper forest in the world, a number of active mud volcanoes, long coastal area in the south and a number of endemic floral and faunal species. Unique topography and confluence of three out of the seven zoogeographical regions in the world, Oriental Region, Palearctic Region and Ethiopian Region¹⁰⁷ make this province very important as a diverse type of habitats and eco-zones and globally important fauna and flora can be observed here. Ecological range zones of Balochistan are characterized by hyper arid to semiarid climate dominated by winter precipitation with residual influence of summer monsoon in the eastern part of the province. General aridity throughout Balochistan with long dry spells prevents the growth of tall trees and close canopy forming forests. Drought resistant dwarf shrubs form steppic vegetation that can withstand extremes of temperature, cover most of the land. In those regions where aridity is low and interrupted by summer rains in lower Balochistan, open forests are found which are composed of *Prosopis cineraria*, *Acacia jacquemontii* and *Tamarix* species form fairly dense forests in some places in dry streambeds or plain along the foot of coastal hills periodically flooded during rains. There are several species endemic to very small areas and their population size is not very large either. These species are adapted to the prevailing climatic conditions and any change in temperature and aridity cause fluctuation in the population of these species. Highland Balochistan is generally defined as those areas above 1000 m altitude with many wide flat valley or undulating plains and steep rugged mountains. The valley floor lies between 1000 and 2200 m altitude and the mountain peaks reach 3600 m. Most of Balochistan south of 30° N has been classified as hot desert, where the rainfall varies from 50-150 mm and the principal land-use is grazing with some agriculture. Whereas the high-altitude areas of northern and eastern (highland) Balochistan with an altitude of 1000 m to over 3000 m are climatically classified as semi-arid continental Mediterranean. Based on edaphic,

¹⁰⁴ Environmental Profile Balochistan, LARUS-IT, Enschede: Netherland, 1992

¹⁰⁵ Government of Pakistan. 2000. Biodiversity Action Plan for Pakistan; A Framework for conserving our natural wealth, pp 79.

¹⁰⁶ Khan, M.S. 2006. Amphibians and reptiles of Pakistan. Krieger Publishing Company, Malabar, Florida..

¹⁰⁷ Khan, M.S. 2006. Amphibians and reptiles of Pakistan. Krieger Publishing Company, Malabar, Florida. pp 311

climatic and floral variations, the ranges of Balochistan can be further divided into various range ecological zones, project districts fall in following ecozones¹⁰⁸.

4.3.1.1 Dry Temperate Forest Eco-Zone

The northern part of the study area covering the districts Sherani, Zhob, Killa Saifullah, Killa Abdullah, Pishin, and Ziarat represents partly the Dry Temperate Forest Eco-zone with elevation range from 7000 to 10,000 feet above sea level and having Juniper Forests with huge and ancient Juniper trees (*Juniperus macropoda*) and Chilghoza (*Pinus gerardiana*) trees. The Chilghoza Forests in the Suleman Mountain Range, with rocky outcrops and shallow mountain soils, are an important component of this eco-zone. Similarly, due to the presence of the largest remaining Juniper forest in the world, this eco-zone is now considered as a global heritage characterized by a unique flora and fauna. Several plant species found in juniper tract are endemic to Balochistan or extend their distribution to neighbouring areas of Afghanistan and Iran. These species with restricted range of distribution increase the importance of these mountains. These mountains are centre of endemism in the region. Some of these endemic species associated with juniper forests include *Berchemia pakistanica*, *Amygdalus brahuica*, *Cotoneaster afghanica*, *Cotoneaster rechingeri*, *Cerasus rechingeri*, *Spiraea brahuica*, *Aitchisonia rosea*, *Gaillonia afghanica* and *Gaillonia macrantha*. Unfortunately, this global heritage is under a serious threat due to continuous practices of fuel wood cutting, over grazing by livestock and hence habitat fragmentation resulting in decreased populations of certain wildlife species in this eco-zone. This type of eco-zone in northern Balochistan covers the areas like Suleman Mountain Range, Toba Kakar range, Ziarat, Kaliphat, Zarghun, Takhatu, Chiltan and Hazar Ganji. Hot and dry summers and cold winters mark the climate of the area. Mean maximum daytime temperatures range from 37°C in June to 13°C in January. Rainfall is maximum during winter with an average 320 mm per year which also varies with altitude. The vegetation of this area depends mainly upon the winter showers and snow fall. Besides the Juniper and chilghoza trees, shrubs like *Berberis*, *Prunus*, *Lonicera*, *Rosa*, *Fraxinus* and *Artemisia* whereas; herbs like *Thymus*, *Eremurus*, *Iris*, *Tulipa*, *Stipa*, *Pennisetum*, *Dicanthium* and *Clematis* are found here¹⁰⁹.

Prominent faunal species include; viper, wolf snake, Afghan tortoise, Rock agama, Toad Agama, Spider gecko, Monitor lizard, Grass skinks etc. among reptiles; Golden eagle, Se se partridge, Chukar partridge, Wood pigeon, Eagle owl, Saker falcon, Warblers, Babblers, Thrushes, Shrikes, Wagtails etc. among birds and Afghan hedgehog, Common leopard, Striped hyena, Caracal or Desert lynx, Wolf, Markhor, Urial, Afghan pika, Cape hare, Hamsters, jirds, shrews, rats, moles etc. among mammals. This eco-zone also hosts a Globally Threatened (Vulnerable) mammalian species; Asiatic Black Bear (*Ursus thibetanus*) whose population is decreasing continuously¹¹⁰.

4.3.1.2 Chagai and Kharan Desert Eco-Zone

¹⁰⁸ Rubina, A. and Mirza, S. N. 2000. Arid Steppes of Balochistan, Pakistan, Secheresse, 17(1-2):203-9

¹⁰⁹ Mirza, Z. B., 2011. Ecosystems of Pakistan: Vol. 1; Ecozones of Pakistan. Urdu Science Board, 299 Upper Mall, Lahore, Pakistan. 247 pp.

¹¹⁰ The IUCN Red List of Threatened Species. Version 2017-3. (www.iucnredlist.org). Downloaded on 08 May 2018.

The areas covering the Nushki and Chagai districts represent the Desert Eco-zone. Topographically, the area can be distinguished into four kinds of habitats; mountains/hills, gravel plains, sandy plains and seasonal streambeds. Chagai Desert is traversed by small and widely spaced mountain ranges in an open expand of basin. Small stones and sand dunes generally cover this basin. Climate of the Chagai Desert ranges from extreme hot in the summer to severe cold in winter. The difference between day and night temperatures is also considerable and follows the typical desert pattern. Topsoil erosion by winds is a prevailing phenomenon. Vegetation cover is very scarce and the area becomes drier towards west. Low rainfall, long dry spells and windstorms make the ecosystem highly fragile. The mountain ranges include; Ras Koh range, Chagai Hills and a chain of low hills marked by a few craters of extinct volcanoes e.g., Kohi-Dalil, Damo Din and Koh-i-Sultan¹¹¹. Since the area falls outside monsoon belt, rainfall is irregular and scanty. Sometimes, drought season prevails for years and sometimes rains cause floods in the area. Since in this eco-zone, the rain water cannot reach the sea, it forms small and large sized lakes locally called Hamun or Hamoon. The Hamun is named after the stream that feeds it like Hamun-e-Mashkel. The main wetlands of this eco-zone include; Tahlab, Hamun Lora, Hamun Mashkel, Baddo stream and Rude-Mashkel. The rain water brings various salts and dumps in such temporary lakes where due to high salt concentration no fish fauna can survive. However, a type of shrimp called Fairy Shrimp flourishes in this salty environment and provide food to a number of migratory birds during winter season. These lakes having saline water of varying degree also provide habitat to some salt loving plant species like *Haloxylon persicum* and *Alhaji maurorum*. This eco-zone represents Sahara-o-Sindian type of vegetation which can tolerate salty environment. Loss of top soil due to wind and water erosion and depletion of soil seed bank have resulted in the replacement of palatable grass component by comparatively less palatable woody vegetation of *Artemisia sp.* and *Haloxylon sp.* Typical examples of plant species in this eco-zone include; *Haloxylon persicum*, *Alhaji maurorum*, *Desmostachya bipinnata*, *Tamaryx stricta*, *Cressa cretica*, *Dicanthium* and *Calligonum polygonoides*¹¹².

Prominent faunal species include; horned viper, wolf snake, Sand boas, desert racers, Rock agama, ground agama, spiny-tailed lizard, monitor lizard, geckos, skinks etc. among reptiles; Steppe eagle, Golden eagle, bearded vulture, common kite, Sparrow hawk, long-legged buzzard, Common kestrel, See se partridge, Sand grouse, black francolin, Grey francolin, Rock pigeon, Spotted owlet, Larks, Bulbul, Wheatears, Shrikes, Wagtails etc. among birds and Afghan hedgehog, Pipistrellus bat, Caracal or Desert lynx, Wolf, Jackal, Desert fox, Chinkara Gazelle, Cape hare, Porcupine, jirds, shrews, rats, Jerboas, moles etc. among mammals. This eco-zone also hosts a unique small mammal; Balochistan Pygmy Jerboa (*Salpingotus michaelis*). This species is endemic to Pakistan and according to IUCN (2018), it is Data Deficient having unknown population trend⁸⁰.

4.3.2 Threatened Ecosystems

According to Biodiversity Action Plan for Pakistan⁸⁰, at least 10 ecosystems of particular value for their species richness and / or unique communities of flora and fauna are

¹¹¹ Rafique, M., Nawaz, M. A. and Asif, M. 2010. Mammalian Fauna of the Chagai Desert and Adjoining Areas, Proc. Pakistan Acad. Sci. 47(1):19-24.2010

¹¹² Mirza, Z. B., 2011. *Ecosystems of Pakistan: Vol. 1; Ecozones of Pakistan*. Urdu Science Board, 299 Upper Mall, Lahore, Pakistan. 247 pp.

threatened with habitat loss and degradation (**Table: 4.17**). Given their biodiversity importance and high level of threat, these ecosystems are considered to be of critical concern for conservation. Out of these 10 important and threatened ecosystems, six exist in Balochistan whereas; five of them exist in the study area i.e. eight selected districts in Balochistan.

Table 4.17: Threatened Ecosystems of Project Districts¹¹³

#	Ecosystem	Characteristics	Significance	Threats
1.	Chaghai Desert	A desert of great antiquity	Many endemic and unique species	Proposed mining, Hunting parties from the Gulf, wildlife poaching and trading
2.	Chilghoza Forest (Suleman Range)	Rocky outcrops with shallow mountain soils	Important wildlife habitat for several species at risk	Fuel wood cutting, over grazing, Illegal hunting
3.	Balochistan Sub-tropical Forests	Mid-altitude forests with sparse canopy but rich associated flora	Very few areas now remain important wildlife habitats	Fuel wood cutting, over grazing
4.	Rivers of the districts	Not connected with the Indus River system	Unique aquatic fauna and flora with high levels of endemism	Water diversion / drainage, Overfishing

4.4 Fauna

4.4.1 Mammals

More than 190 mammalian species are reported from Pakistan (Roberts, 2005). A number of mammalian species are found in Balochistan including small mammals, medium sized mammals and large mammals. Two out of the six endemic mammalian species of Pakistan are found in the study area in Balochistan including Balochistan Black Bear (*Ursus thibetanus*) and Balochistan Pygmy Jerboa (*Salpingotus michaelis*). A list of mammalian species recorded from Balochistan is given in **Annexure 5¹¹⁴**.

4.4.2 Reptiles

Reptiles are represented in Pakistan by crocodilians (crocodiles), chelonians (turtles and tortoises), lacertilians (lizards) and serpents (snakes) and total 112 reptilian species are reported from Pakistan with more than 60 species from Balochistan. Amphibians and reptiles collectively called Herps are very important animals among the vertebrates and important components of any living system. They may act as excellent biological indicators of any ecosystem. Their position in the ecological niche is so vulnerable that the survival and collapse of the whole energy cycle depends upon the presence and absence of the amphibians and reptiles. A list of 55 reptilian species found in the selected eight districts of Balochistan is given in **Annexure 5¹¹⁵**.

¹¹³ Biodiversity Action Plan GoP, 2000

¹¹⁴ Roberts, T. J. 2005 Field Guide to the Large and Medium Sized Mammals of Pakistan. Oxford University Press, Karachi.

¹¹⁵ Khan, M.S. 2006. Amphibians and reptiles of Pakistan. Krieger Publishing Company, Malabar, Florida.

4.4.3 Amphibians

Amphibians are represented in Pakistan by anurans i.e. frogs and toads and total 24 species of amphibians are reported in Pakistan. Total six amphibian species are found in the selected districts in Balochistan - **Annexure 5**⁸¹.

4.4.4 Birds

More than 670 bird species are reported from Pakistan¹¹⁶. A number of avian species are found in Balochistan including resident birds, summer breeders, winter visitors and passage migrants or irregular year-round visitors. The characteristic game birds are chikor (*Caccabis chucar*) and sisi (*ammoperdix bonhomie*). Large flocks of sand-grouse pass through the province in the winter, and wet lands are frequented by many varieties of wild-fowl. Most of the birds of Balochistan are migratory.¹¹⁷ Of those permanently resident, the most characteristic are the raven, frequent everywhere; the lammergeyer, for which no place is too wild; and the golden eagle. Among the visitors the most common are different species of saxicola, headed by the pied chat, and several kinds of shrikes which appear in spring in large numbers. (**Annexure 5**)⁸³.

4.4.5 Endangered Species

The number of endemic species and those considered as threatened with extinction are provided in IUCN red list. The IUCN Red List of threatened species lists 45 species of internationally threatened animals occurring in Pakistan. The selected eight districts of Balochistan represent total 294 faunal wildlife species including six amphibians, 55 reptiles, 198 birds and 35 mammals. Out of the total 294 wildlife species, 11 species are threatened with Egyptian Vulture being endangered while rests of the 10 species being Vulnerable and all having decreasing population trend (**Table 4.18**). The threatened species include six birds and five mammals. None of the amphibian and reptilian species is threatened in the selected eight districts in Balochistan.¹¹⁸

There are a number of species of birds and animal protected under Balochistan Wildlife Act of 1974 included as Schedule-III: animals which shall not be hunted, killed or captured included in **Table 4.19**. Game animals in the province have been on decline because of unsustainable hunting, food and furs. Universal netting and capitulating of birds has led to sharp decline of some species or even some of these became extinct. Habitat destruction due to land use changes is another cause of decline in wildlife. Amongst migratory birds the Hobart Bustard, Cranes and falcons have suffered to great extent¹¹⁹. Some of the animals found in Balochistan such as Leopard, Wolf, Balochistan Black Bear, Chiltan Markhor and Straight Horned Markhor are listed in the International Red Data Book of IUCN.

¹¹⁶ Grimmett, R., Roberts, T. and Inskipp, T. 2008. Birds of Pakistan. Christopher Helm Publishers Ltd, 38 Soho Square, London W1D 3HB. 256 pp.

¹¹⁷ Mirza. Z. B. 2007. A Field Guide to Birds of Pakistan, WWF Pakistan, PO Box 5180, Ferozepur Road, Lahore, Pakistan. 366

¹¹⁸ The IUCN Red List of Threatened Species. Version 2017-3. (www.iucnredlist.org). Downloaded on 08 June 2018.

¹¹⁹ Environmental Profile Balochistan, LARUS-IT, Enschede: Netherland, 1992

Table 4.18: Endangered Faunal Species of Balochistan⁸⁸

#	Zoological Name	Common Name	Class	IUCN Status 2018	Population Trend
1	European Turtle Dove	<i>Streptopelia turtur</i>	Aves	Vulnerable	Decreasing
2	Egyptian Vulture	<i>Neophron percnopterus</i>	Aves	Endangered	Decreasing
3	Southern Grey Shrike	<i>Lanius meridionalis</i>	Aves	Vulnerable	Decreasing
4	Houbara bustard	<i>Chlamydotis undulata</i>	Aves	Vulnerable	Decreasing
5	Marbled Duck/ Teal	<i>Marmaronetta angustirostris</i>	Aves	Vulnerable	Decreasing
6	Common Pochard	<i>Aythya ferina</i>	Aves	Vulnerable	Decreasing
7	Common Leopard	<i>Panthera pardus</i>	Mammalia	Vulnerable	Decreasing
8	Marbled Polecat	<i>Vormela peregusna</i>	Mammalia	Vulnerable	Decreasing
9	Gad / Urial	<i>Ovis vignei</i>	Mammalia	Vulnerable	Decreasing
10	Persian or Goitred Gazelle	<i>Gazella subgutturosa</i>	Mammalia	Vulnerable	Decreasing
11	Chiltan Wild Goat	<i>Capra aegagrus</i>	Mammalia	Vulnerable	Decreasing

4.4.6 Protected Areas

There are 27 protected areas in Balochistan including 3 national parks, 14 wildlife sanctuaries, 8 game reserves, 1 biosphere reserves and 1 marine protected area¹²⁰. It constitutes an area of 34,719,000 hectares of terrestrial and 40,147 hectares of marine protected areas. In addition, there are 5 private game reserves in Balochistan. Total of 6.2 percent area of the Balochistan is under the protection by forest and wildlife department. The details of protected areas of project site are included in **Table 4.19**. There are 9 protected sites in project districts which include one national park, 3 wildlife sanctuaries, 5 game reserves and 1 private game reserve covers an area of 582,601. The project interventions are not likely to be carried out in protected areas of Balochistan however management plan will be prepared if there is an indirect impact on the protected area.

Table 4.19: Protected Areas of Project Districts

#	Protected Areas (category & name)	Area (ha)	Status	District
National Parks				
1	Hazarganji Chiltan National Park	27,400	Notified	Quetta & Mastung
Wildlife Sanctuaries				
2	Maslakh	46,575	Notified	Pishin
3	Ragha-e- Rakhshan	125,425	Notified	Kharan
4	Gut	165,992	Notified	Chagai
Game Reserves				

¹²⁰ The detailed list of game reserves and wildlife sanctuaries is available at World Database on Protected Areas

#	Protected Areas (category & name)	Area (ha)	Status	District
5	Bund Khushdil Khan	1,296	Notified	Pishin
6	Zangi Nawar	1,069	Notified	Chagai
7	Zawar Kan	1,060	Notified	Pishin
8	Kambran	211,433	Notified	Chagai
9	Duz-Dara and Koh-e-Surkho	2,351	Notified	Mastung
Private Game Reserves				
10	Torghar	Not known	N/A	Kila Saifullah
	Total Area	582,601		

4.4.7 Endemic Species

Ten out of the 198 wildlife species reported from Balochistan are endemic including one amphibian, eight reptiles and one mammal. These 10 endemic species are therefore, important from conservation point of view. The project intervention shall not disturb their habitats. A list of Endemic wildlife species found in selected eight districts in Balochistan is given below¹²¹.

Table 4.20: Endemic Wildlife Species of Project Districts

#	Zoological Name	Common Name	Class	Type locality	Distribution
1	<i>Bufo viridis zugmayeri</i>	Baloch Green Toad	Amphibia	Pishin	Pishin, Quetta, Killa Saifullah, Mastung, Nushki, Chagai
2	<i>Laudakia caucasia</i>	Caucasian Rock Agama	Reptilia	Tiflis, Baku, Caucasus	Northern Baluchistan (Sherani, Zhob) and Southern Waziristan
3	<i>Laudakia melanura nasiri</i>		Reptilia	Tanishpa (District Killa Saifullah)	Killa Saifullah, Toba Kakar Range
4	<i>Phrynocephalus euptilopus</i>	Spotted Toad Agama	Reptilia	Darband, northern Baluchistan	Sherani, Zhob, Killa Saifullah
5	<i>Trapelus ruderatus baluchianus</i>	Spotted Ground Agama	Reptilia	Quetta	Pishin, Quetta, Mastung, Sibbi
6	<i>Indogekko rhodocaudus</i>	Red-tail Sandstone gecko	Reptilia	Tanishpa (District Killa Saifullah)	Kila Saifullah, Zhob
7	<i>Rhinogekko femoralis</i>	Point-tail Spider gecko	Reptilia	Kharan	Kharan, Chagai
8	<i>Tropicolotes depressus</i>	Mountain Dwarf gecko	Reptilia	Kach, Quetta	North Quetta and Pishin
9	<i>Coluber karelini mintonorum</i>	Banded Desert Racer	Reptilia	Zangi Nawar	Zangi Nawar, Nushki, Chagai
10	<i>Salpingotus michaelis</i>	Balochistan Pygmy Jerboa	Mammalia	Chagai	Nushki, Chagai

4.4.8 Protected Wetlands

¹²¹ Khan, M.S. 2006. Amphibians and reptiles of Pakistan. Krieger Publishing Company, Malabar, Florida. pp 311
Government of Pakistan. 2000. Biodiversity Action Plan for Pakistan; A Framework for conserving our natural wealth, pp 79.

Five wetlands in Balochistan are under protection through Ramsar Convention and none of them are present in the project districts. However, there are a number of important wetlands present in the project districts. Existing wetlands in the districts include Hamun-e-Lora that provides refuge to migratory birds after heavy rains and flash flood. Zangi Nawar is an important wetland in Nushki, which when flooded with rain water covers a huge area but when water evaporates it turns into a complex of small water bodies. It was once a Ramsar site but due to decrease in flood water and drought, it lost its status. It is famous for important migratory birds like Marbled Teal (*Marmaronetta angustirostris*). More than 60,000 birds counted there in the mid-1980s¹²². However, it dries during drought years such as 1987, 1999 and 2000.

There are a number of important surface water resources in the project districts as explained in earlier sections. Band Khush Dil Khan is an important stopover for migratory birds and a potential wildlife sanctuary. Due to recurrent droughts it has now squeezed to a limited water reservoir, and hence excluded from the list of Ramsar Sites. Most of its area has been encroached by the local inhabitants for development of apple orchards. The Sherani Lahar (semi-perennial river), throughout its length, is an important wetland for resident and winter visiting species. The major birds found are cranes, pelicans, kingfishers, Osprey, etc. Sabakzai Dam, Zhob River, Wasta Dam, and Chakhon are important wetlands in the district. Among these Sabakzai Dam has been constructed recently. No study has been conducted yet for its potential as wetland and its resident and migratory /visiting species but it is anticipated that this lake will become an important wetland in the years to come. Wasta Dam is an important stop of migratory cranes.

4.5 Flora

Being producers, the plant species form the foundation of an ecosystem. Plants provide the basic needs of all the other living organisms including food, shelter and cover. Beyond the irrigated valleys the inhospitable stony soil is covered by a scraggy overlay of stunted scrub. Flora native to the region includes *capparis aphylla*, *periploca aphylla*, *boucerosia*, *tacoma undulate*, *acanthodium*, *spicatum*, *prosopis spicigera*, *withania coagulans*, *zizyphus jujuba*, *slavadora oleoides*, three kinds of *acacia*, *leptadenia spartium*, *taverniera nummularia*, *physorhynchus brahuicus*, *alhagi camelorum* etc. In low-lying parts where water is available *tamarix articulata* and *tamarix gallica* are found. The herbaceous vegetation is very scanty, consisting of such plants as *aerua javanica*, *pluchea lanceolata*, *fagonia arabica*, *mibulus alatus*, and *cassia obovata*. Two species *haloxylon suadea* and *vermiculata* and *salsola foetida* are abundant on saline soil. *Panicum antidotale* is the most important grass, but *eleusine flagellifera* and a species of *eragrostis* are also abundant¹²³.

In the upper highlands the flora is of varied origin. The long flat valleys for the greater part of the year have a monotonous covering of *Artemisia* and *haloxylon griffithii*, diversified, where there are streams with tamarisks and species of *salsola*, *arenaria*, *halocharis*. On the surrounding hills, up to an elevation of 7,000 feet above sea-level are to be found species of *acantholimon*, *acanthophyllum*, *salvia*, *amygdalus*, *spiraea*, *gentian*, *eremostachys* and *campanula*. Pistachio trees, associated with ash, wild olive, and

¹²² Balochistan Conservation Strategy (May 19, 2000)

¹²³ Flora of Pakistan, Volume 219

daphne are also common. At higher elevations junipers *macropoda* and *prunus eburnea* are abundant. Other plants common at these altitudes are *lonicera*, *caragana ambigua*, *berberis*, *cotoneaster nummularia*, *rosa beggeriana*, etc and two varieties of *pennisetum*. A number of medicinal plants are also found in Balochistan.

4.5.1 Vegetation¹²⁴

4.5.1.1 Chagai District

Main vegetation types in the area generally represent xerophytic plant community. The tree species include *Pistacia terebiuthus*, *Tamarix macrocarpa*, *Tamarix articulata* (Ghaz), *Perip locaaphylla*, *Prunu seburnea* (Mazmung), *Haloxylon ammodendron* (Taghaz). The dominant shrubs in the region include *Stocksia brahuica* (Kotor), *Zygophyllum atripliciodes*, *Tamarix gallica* (Kiri), *Astragalus hycanus*, *Calligonum comosom*, *Peganam harmala*, *Ferula asafoetida* (Hing); it is both male (kularhing) and female (paunihing), *Nareu modorum* (Jaur), *Artemisia spp*; *tenerium stocksianum* (Kalpora), and *Nanoro psritichiana* (Mazri or dwarf palm). The shrub species generally inhabit this region at the base hills and extend over the plains. The saline area also consists of some plants like *Salsola kali*, *Rhazyastrieta*, *Alhajica melorum*, *Salsola foetida*, *Haloxylon salicornicum* and *H. Grifthii*. The ground cover is constituted mainly by (*Stipahi malacia*), (*Dichanthium annulatum*), (*Chryso pogonaucheri*) and (*Cymbopogon spp.*). Out of the above mentioned flora, a valuable medicinal plant *Ferula foetida* (Hing) is found in foothills and collected by local people.

4.5.1.2 Killa Abdullah District

Data is not available.

4.5.1.3 Killa Saifullah District

The major tree species found in the district are Obusht (*Juniperus excelsa polycarpus*), Wild Ash (*Fraxinus xanthoxyloides*) and Shina (*Pistacia khinjjak*), which occupy favorable sites. The main shrubs are Janglee Badaam/Wild Almond (*Prunus eberne*), Sparae (*Cotoneaster spp.*), Tharkha (*Artemisia maritime*), *Crataegus spp.*, Kala Zira (*Carum bulbocastanum*), Oman (*Ephedra nebrodensis* and *Ephedra intermedia*), Makhi (*Caragana ambigua*), Khakshir (*Sisymbrium sophia*), Zralg (*Berberis lyceum*), and Surae (*Rosa lacerans*). The ground cover is constituted mainly of (*Stipa himalacia*), (*Dichanthium annulatum*), (*Chrysopogon aucheri*) and (*Cymbopogon spp.*).

4.5.1.4 Mastung District

The major tree species found in the district are Obusht (*Juniperus excelsa polycarpus*), Wild Ash (*Fraxinus xanthoxyloides*) and Shina (*Pistacia khinjjak*), which occupy favorable sites. The main shrubs are Janglee Badaam or Wild Almond (*Prunus ebernea*), Sparae (*Cotoneaster spp.*), Tharkha (*Artemisia maritime*), *Crataegus spp.*, Kala Zira (*Carum bulbocastanum*), Oman *Ephedra nebrodensis* and *Ephedra intermedia*, Makhi (*Caragana ambigua*), Khakshir (*Sisymbrium sophia*), Zralg, (*Berberis lyceum*), and Surae

¹²⁴ District Development Profiles, July 2011, Planning & Development Department, GoB, UNICEF Chagai, Killa Abdullah, Killa Saifullah, Mastung, Nushki, Pishin, Sherani and Zhob

(*Rosa* spp.) The ground cover is constituted mainly by (*Stipa himalacia*), (*Dichanthium annulatum*), (*Chrysopogon aucheri*) and (*Cymbopogon* spp.) Out of the above mentioned flora, Kala Zira (*Carum bulbocastanum*) is used as spice and fetches high value in the market. In addition, Oman (*Ephedra nebrodensis*) and Khakshir (*Sisymbrium sophia*) are found in large quantity and have medicinal value. A large amount of these herbs is marketed. Extracts of these plants are largely used by villagers as well, for treatment of cough and asthma. They believe there is no side effect of the drug and moreover it is easily available either free or at a nominal price.

4.5.1.5 Nushki District

Main vegetation type in the area is generally xerophytic plant community except those found in Khaisar and Ahmedwal hills. The tree species include *Pistacia terebinthus*, *Tamarix macrocarpa*, *Pteropodium aucheri*, *Tamarix articulata* (Ghaz), *Periploca aphylla*, *Prunus eburnea* (Mazmung), *Haloxylon ammodendron* (Taghaz) and *H. Griffithii*. The dominant shrubs in the region include *Stockia brahuica* (Kotor), *Zygophyllum atriplicoides*, *Tamarix gallica* (Kiri), *Astragalus hycanus*, *Calligonum comosom*, *Peganam harmala*, *Ferula asafoetida* (Hing); both male (*kularhing*) and female (*pauni hing*), *Nareum odorum* (Jaur), *Lyceum barbarum*, *Artemisia intermedia*, *tenerium stocksianum* (Kalpora), *Sophora mollis*, *Sophora griffithii*, and *Astragalus hyrcanus*. The shrub species generally inhabit this region at the base hills and extend over the plains. The saline area also consist of some plants like *Salsola kali*, *Rhazya stricta*, *Alhaji camelorum*, *Salsola foetida* and *Haloxylon salicornicum*. The ground cover is constituted mainly by *Stipa himalacia*, *Dichanthium annulatum*, *Chrysopogon aucheri* and *Cymbopogon* spp.

4.5.1.6 Pishin District

The major tree species found in the district are Obusht (*Juniperus excelsa polycarpus*), Wild Ash (*Fraxinus xanthoxyloides*) and Shina (*Pistacia khinjik*), which occupy favorable sites. The main shrubs are Janglee Badaam (*Prunus* spp), Sparae (*Cotoneaster* spp.), Tharkha (*Artemisia maritime*), *Crataegus* spp., Kala Zira (*Carum bulbocastanum*), Oman (*Ephedra nebrodensis* and *Ephedra intermedia*), Makhi (*Caragana ambigua*), Khakshir (*Sisymbrium sophia*), Zralg (*Berberis lyceum*), and Surae (*Rosa* spp.). The ground cover is constituted mainly by (*Stipa himalacia*), (*Dichanthium annulatum*), (*Chrysopogon aucheri*) and (*Cymbopogon* spp.) Out of the above mentioned flora, Kala Zira (*Carum bulbocastanum*) is used as spice and fetches high value in the market. In addition, Oman (*Ephedra nebrodensis*) and Khakshir (*Sisymbrium sophia*) are found in large quantity and have medicinal value. A large amount of these herbs are marketed. Extracts of these plants are largely used, by villagers as well, for treatment of cough and asthma.

4.5.1.7 Sherani District

In Dry Temperate Forests of Chilghoza Pine, the main species are Chilghoza (*Pinus gerardiana*), Blue pine (*Pinus wallichiana*), Olive (*Olea ferrugenea*), Shina (*Pistacia khinjik*), Uzhgai (*Pistachia cabulica*), Gurgura (*Reptonia buxifolia*), Shang/ Wild Ash (*Fraxinus xanthoxyloides*), Wild almond (*Prunus eburnean*), etc. In Sub tropical broad leaved evergreen scrub forests the main tree species are: natural Olive (*Olea ferrugenea*), Phulai (*Acacia modesta*). Besides these tree species, a number of associates shrubs and herbs are also present in these forests, which may include, Barara (*Periploca*

aphylla), *Anang* (*Prunus creasus*), *Arghuch* (*Scorzonera mollis*), *Datura* (*Datura fastuosa*), *Gandarae* (*Narium odorum*), *Gangu* (*Othonnopsis intermedia*), *Ghuzera* (*Sophora grifithii*), *Injaora* (*Allium sphaerocephalum*), *Khamazurgae* (*Withania cougulans*), *Khatol* (*Malcolmia africana*), *Malaghunae* (*Daphne oleoides*), *Mazari* (*Nannorrhops ritchiana*) also known as dwarf palm, and *Sanatha* (*Dodonea viscosa*); but *Sanatha* is usually found on degraded sites. The ground cover is constituted mainly by *Stipa pennata*, *Pennisetum orientalis*, *Chrysopogon aucheri*, *Barau* (*Sorghum halepense*), *Barwaza* (*Heteropogon contortus*), *Bushkae* (*Sepidium draba*), and *Cymbopogon* species.

4.5.1.8 Zhob District

The major forest type is Sub Tropical Broad Leaved Evergreen Scrub forests. These forests occupy the altitudes between 2500 to 5500 feet elevation. The main species are Olive (*Olea ferrugenea*), Shina (*Pistacia khinjik*), Uzhgai (*Pistachia cabulica*), Gurgura (*Reptonia buxifolia*), Shang/ Wild Ash (*Fraxinus xanthoxyloides*) and Wild almond (*Prunus eburnea*). Besides these tree species, a number of shrubs and herbs are also present in these forests, which may include, *Barara* (*Periploca aphylla*), *Anang* (*Prunus creasus*), *Arghuch* (*Scorzonera mollis*), *Datura* (*Datura fastuosa*), *Gandarae* (*Narium odorum*), *Gangu* (*Othonnopsis intermedia*), *Ghuzera* (*Sophora grifithii*), *Injaora* (*Allium sphaerocephalum*), *Maurai* (*Zizyphora clinopolioides*), *Nal* (*Phragmites communis*), *Khamazurgae* (*Withania cougulans*), *Khatol* (*Malcolmia africana*), *Makhi* (*Caragana ambigua*), *Shezgae* (*Eremurus aucheriana*), *shkanpara* (*Plantago ovata*), *Shorae* (*Haloxylon grifithii*), *Tarkha* (*Artimesia merittima*), *Urgalama* (*Rhazya stricta*), *Zawala* (*Achillea santolina*), *Pamangi* (*Bouce rosia aucheriana*), *Ragholae* (*Peucedanum* sp.), *Rakhpatti* (*Panicum colonum*), *Sanda* (*Tillipa stellata*), *Sandreza* (*Lactuca* sp.), *Malaghunae* (*Daphne oleoides*), *Mazari* (*Nannorrhops ritchiana*) also known as dwarf palm, and *Sanatha* (*Dodonea viscosa*); but *Sanatha* is usually found on degraded sites. The ground cover is constituted mainly by *Stipa pennata*, *Pennisetum orientalis*, *Chrysopogon aucheri*, *Barau* (*Sorghum halepense*), *Barwaza* (*Heteropogon contortus*), *Margha* (*Poa bulbosa*), *Bushkae* (*Sepidium draba*), *Lukha* (*Typha angustifolia*), and *Sargarae* (*Cymbopogon jwarancusa*).

4.5.2 Rangelands¹²⁵

4.5.2.1 Chagai District

The type of rangeland present in the district is classified as Western Balochistan Ranges. It represents the poor rangeland type. In general terms these rangelands fall in degraded and depleted category. It may be noted that rangeland potential is based on livestock production which is a function of vegetation cover and presence of native and palatable species including both herbs and shrubs.

4.5.2.2 Killa Abdullah District

Data Not Available

4.5.2.3 Killa Saifullah District

¹²⁵ District Development Profiles, July 2011, Planning & Development Department, GoB, UNICEF. Chagai, Killa Abdullah, Killa Saifullah, Masstung, Nushki, Pishin, Sherani and Zhob

The type of rangeland present in the district is classified as Central Balochistan Ranges. It has species like: Gung (*Vitex agnus-castus*), Ghureza (*Sophora lopcuroides*), Tharkha (*Artemisia maritime*), Zawal (*Achillea santolina*), Zoz (*Alhagi camalorum*), Spanda (*Peganum harmala*), Washta (*Stipa pennata*), Weezh (*Pennisetum orientale*), Sargarai (*Cymbopogon jawarancusa*), Margha (*Pennisetum annulatum*) etc. The productivity is fair with average productive capacity of 160 kg /Hectare. The rangelands have degraded due to overgrazing and fuel wood collection and the only remnants are less palatable and poisonous plants like Ghuzera (*Sophora grifithii*). The degradation is aggravated by the traditional nomadic migrants.

4.5.2.4 Mastung District

The type of rangeland present in the district is classified as Central Balochistan Ranges. It has species like: Gung (*Vitex agnus-castus*), Ghureza (*Sophora lopcuroides*), Tharkha (*Artemisia maritime*), Zawal (*Achillea santolina*), Zoz (*Alhagi camalorum*), Spanda (*Peganum harmala*), Washta (*Stipa pennata*), Weezh (*Pennisetum orientale*), Sargarai (*Cymbopogon jawarancusa*), Margha (*Pennisetum annulatum*) etc. The productivity is moderate with average productive capacity of 160 kg /Hectares. The rangelands have degraded due to fuel wood collection and due to overgrazing, the only remnants are less palatable and poisonous plants like Ghuzera (*Sophora grifithii*). The degradation is aggravated by the traditional nomadic migrants.

4.5.2.5 Nushki District

The type of rangeland present in the district is classified as Western Balochistan Ranges. It represents a poor rangeland type. In general terms these rangelands fall in degraded and depleted category. It may be noted that rangeland potential is based on livestock production which is the function of vegetation cover and presence of native and palatable species including both herbs and shrubs.

4.5.2.6 Pishin District

The type of rangeland present in the district is classified as Central Balochistan Ranges. It has species like: Gung (*Vitex agnus-castus*), Ghureza (*Sophora lopcuroides*), Tharkha (*Artemisia maritime*), Zawal (*Achillea santolina*), Zoz (*Alhagi camalorum*), Spanda (*Peganum harmala*), Washta (*Stipa pennata*), Weezh (*Pennisetum orientale*), Sargarai (*Cymbopogon jawarancusa*), Margha (*Pennisetum annulatum*) etc. The productivity is adequate with average productive capacity of 160 kg /hectare. The rangelands have been degraded due to overgrazing and fuel wood collection, and the only remnants are less palatable and poisonous plants like Ghuzera (*Sophora grifithii*). The degradation is aggravated by the traditional nomadic migrants.

4.5.2.7 Sherani District

The rangeland type in the district is classified as Suleiman Mountain Ranges. It has species like: *Stipa pennata*, *Pennisetum orientalis*, *Chrysopogon aucheri*, and *Cymbopogon sp.* etc. The productivity is good with average productive capacity of 250 kg /hectare. The rangelands in the district belong to communities living around them. Due to communal ownership, usually these are accessible to all members of the community and also to nomads passing through the area on their traditional routes of migration to new areas. On the management side, no one assumes the responsibility for undertaking any

activity aimed either at restoration of depleted areas or for improvement to increase the forage production and other tangible and intangible benefits. There is no limit on the number, type, season and period/duration of grazing. This free access to range resource by everyone and absence of responsibility on management side has led to what could be termed as the “Tragedy of Commons”.

4.5.2.8 Zhob District

The type of rangeland present in the district is classified as Suleiman Mountain Ranges. It has species like: *Stipa pennata*, *Pennisetum orientalis*, *Chrysopogon aucheri*, and *Cymbopogon sp.* etc. The productivity is good with average productive capacity of 250 kg /hectare.

4.5.3 Forest

The type of forests that exist in Pakistan with relative share are moist and dry temperate: coniferous 40%, scrub 28%, tropical thorn 3.5%, manmade irrigated 5%, riverine 7%, mangrove 8% and farm forests 11%. Balochistan is partially dry with 1.7 percent of the total area covered by forest.¹²⁶ Major types of natural forests found are coniferous forests, scrub forests, sub- tropical desert and riverain forests¹²⁷. Coniferous forests occur at elevations of 1,500–3,500 metres and include chilghoza (*Pinus gerardiana*) and Dry Juniper Forest (*Juniperus excelsa*). Chilghoza are confined to the Suleiman Mountains, in the Sherani tribal area (Zhob District), ranging from 2,700 to 3,400 metres in elevation. The main chilghoza areas are found at Shinghar, Kaisaghar, Takht-e-Suleiman and Torghar. In Shinghar, 2,562 hectares are included in state forests, while the Shirani tribe owns the remainder. Chilghoza is the dominant species, with the sporadic occurrence of kail (*Pinus wallichiana*) in the upper reaches of Takht-e-Suleiman and Torghar. There are no commercial forests in Balochistan and the main value of forests is for the environmental protection and nature conservation. Juniper forests of north-central Balochistan are the most extensive remnants of this forest-type in the world. Some trees are over 2500 years old. They cover approximately 141,000 hectares. The most extensive (86,000 hectares) and best-known examples are Ziarat and Zarghoon hills. Scrub forests are found at elevations of 500–1,500 metres in the province including the following three categories:

- Dry Temperate Scrub - Quetta, Mastung, Kalat, Qila Abdullah, Pishin, Kila Saifullah
- Dry Sub-tropical broad-leaved Forests – Suleiman Mountains
- Tropical Thorn Forests – Sibi Plains and Nok Kundi

About three percent of Balochistan has been gazetted state forests¹²⁸. Major parts (70-80 percent) of the state forests are grass and shrubs. The remaining state forests are sparse to open coniferous wood, riverine forests in the Sibi – Kachhi Plain and widely scattered shrubs. In state forests, green trees and wildlife are protected under the

¹²⁶ 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

¹²⁷ Balochistan Conservation Strategy (May 19, 2000)

¹²⁸ Balochistan Forest Regulations, 1890

forests and wildlife regulations¹²⁹. Exploitation rights (fuel-wood, grazing, fruit collection) as well as employment rights are specifically included in the notification of each state forest area. Several state forests have been destroyed due to settlement of Afghan Refugees, e.g. Popalzai Jungle. In Kalat district partly juniper, partly Pistacia and Olive wood forests are under degradation. Juniper forests in Ziarat are in very poor conditions. Many trees show signs of lopping for fodder and debarking for roofing. The juniper woods are often the only source of fuel-wood in the cold winter and timber supply for house construction over vast areas in the province with poor and rapidly growing population¹³⁰. Mangroves in the coastal area are exploited for fuel wood and forage due to scarcity of other trees in coastal belt.

4.5.3.1 Chagai District

The type of forests found in the district is Dry Tropical Forest that covers both Tropical Thorn Forest and Sand Dune Desert Forest sub-zones. It has a limited forest cover and does not have any State forest. However, some 377,425 hectare area in Gut and Kambran stands notified as Wildlife Protected Area. Overall natural vegetation including shrubs, bushes and grasses can aptly be termed as rangelands. These rangelands are substantially contributing to the ecological stability of important ecosystems in the district.¹³¹ The total area under the Balochistan Forest Department in 2014-15 was Scrub Forest (186,300 acres).¹³² Gut and Kambran are the notified protected areas, measuring 377,425 hectares.¹³³

4.5.3.2 Killa Abdullah District

The information is not available.¹³⁴

4.5.3.3 Killa Saifullah District

The district has a reasonable area under forest but a negligible area has been conserved as State Forest or Wildlife Protected Area and the rest is unclassified wasteland (mostly community owned). There are four notified natural forests, which include; Tarawal, Khatuka, Kand, and Nasai, measuring 20,288 Hectare in total. Moreover, although there is negligible State Protected Area in the district but there is an internationally acclaimed community based protected area initiative namely "Torghar Conservancy" with an approximate area of about 180,000 Hectare. The Torghar area is an excellent example of stewardship of natural resources by the local communities.¹³⁵ The total area under the Balochistan Forest Department in 2014-15 was Scrub Forest (28,051 acres).¹³⁶ There are no notified state protected areas in the district.¹³⁷

4.5.3.4 Mastung District

¹²⁹ Balochistan Forest Regulation (Amendment) Act, 1974 and Balochistan Wildlife Protection (Amendment) Act, 1980

¹³⁰ Environmental Profile Balochistan, LARUS-IT, Enschede: Netherland, 1992

¹³¹ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

¹³² Development Statistics of Balochistan 2014-15, 2016, Planning & Development Department, Bureau of Statistics, GoP.

¹³³ Development Statistics of Balochistan 2014-15, 2016, Planning & Development Department, Bureau of Statistics, GoP.

¹³⁴ Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

¹³⁵ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

¹³⁶ Development Statistics of Balochistan 2014-15, 2016, Planning & Development Department, Bureau of Statistics, GoP.

¹³⁷ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

The type of forests found in the district is Balochistan Dry Temperate Scrub (Steppe). Historically, it was dry temperate climax formation of juniper and Wild Pistachio; trees of Wild Pistachio are still surviving as a remnant in Chiltan mountain range. Overall the climax formation reduced to scrub condition due to grazing and fuel wood pressures. Presently it has a very open cover and a moderate amount of grasses and herbs.¹³⁸ The notified protected areas in district Mastung are Hazarganji Chiltan National Park and Duz Dara and Koh-e-Surkho. The total area under the Balochistan Forest Department of district in 2014-15 was Scrub Forest (42,720 acres) and rangelands (12,000 acres).¹³⁹

4.5.3.5 Nushki District

The type of forest found in the district is Dry Tropical Forest and covers both Tropical Thorn Forest and Sand Dunes Desert Forest sub-zones. District Nushki has an area of 75,395 hectare in Khaisar and Ahmedwal which stands notified as State Forests, while district has 1,069 hectares as Wildlife Protected Area in Zangi Nawar.¹⁴⁰

4.5.3.6 Pishin District

The district is deficient in forest cover and a negligible area has been conserved as State Forest or Wildlife Protected Area, but overall natural vegetation, termed as rangelands are substantially contributing to the ecological stability of important ecosystems in the district. There are seven Notified natural forests which include Targhatu, Gawal, Surghund, Surkhab, Sarwat, Umai, and North Takatu; measuring 25,866 hectare in total but additional 30 kilometer avenue plantation also exist in the district. Moreover, there is an artificial forest reserve situated at Bund Khush Dil Khan comprising of 475 hectares. It is in fact, a wildlife sanctuary which is presently not fully functional because of encroachment and human interventions. There are three Notified Protected Areas in the district at Maslakh, Bund Khushdil Khan and Zawar Khan with a total area of 48,931 hectares.¹⁴¹ The total area under the Balochistan Forest Department of district in 2014-15 was Coniferous (41,500 acres) and Scrub Forest (138,971 acres).¹⁴²

4.5.3.7 Sherani District

The type of forest found in the area is Dry Temperate Forests of Chilghoza Pine and Sub Tropical Broad Leaf Evergreen Scrub forests of Olive and Phulai. There are five Notified forests in the district namely: Kapip, Shahwan Khawe, Shinghar, Khawaza, and Merhail with total forest area of 6,277 hectare. There is no notified protected area in the district.¹⁴³

4.5.3.8 Zhob District

The district has a considerable area under forest but a negligible area has been conserved as State Forest. The type of forest found in the area is Sub Tropical Broadleaved Evergreen Scrub forests of Olive and Phulai. There are two Notified forests in the district namely: Bahlol and Majawar Shmbozai with total forest area of 6,734

¹³⁸ Mastung- District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

¹³⁹ Development Statistics of Balochistan 2014-15, 2016, Planning & Development Department, Bureau of Statistics, GoP.

¹⁴⁰ Nushki - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

¹⁴¹ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

¹⁴² Development Statistics of Balochistan 2014-15, 2016, Planning & Development Department, Bureau of Statistics, GoP.

¹⁴³ Sherani - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

hectare. The remaining forest area is community owned but these forests are not under scientific management regime. There are no notified protected areas in this district. The total area under the Balochistan Forest Department of district in 2014-15 was Coniferous (2,560 acres) and Scrub Forest (37,590 acres) and rangelands ((14080 acres).¹⁴⁴

4.5.4 Notified Forests

There are a number of protected and reserve forests under the Balochistan Forest Law, however, the project interventions are not likely to be carried out in Government or State reserved or protected forest. The total area under the Balochistan Forest Department in 2014-15 was 2,783,554 acres including Coniferous (358,567 acres), Irrigated Plantation (285 acres), Reverian Bela (35,018 acres), Scrub Forest (1,420,919 acres), Coastal Forest (42,334 acres) and Rangelands (92,6431 acres).¹⁴⁵ Out of which **397,014** acres fall in the project districts.¹⁴⁶ NOC will be attained from forest department (if required) for interventions near or inside the protected forest. The list of notified forest is included as **Table 4.21**.

Table 4.21: Notified Forest in Project Area¹⁴⁷

#	Forest Name / District	Forest Area (in Acres)	#	Forest Name / District	Forest Area (in Acres)
	Pishin			Killa Saifullah	
1	Gwal	2880	1	Tarawal	10240
2	Surghund	8500	2	Khatuka	10771
3	Bund Khushdil Khan	1174	3	Kand	11840
4	Umai	1600	4	Nasai	17280
5	Sarwat	1030		Sub-total	50131
6	Takatu North	12210		Mastung	
7	Surkhab	3521	1	Chiltan	27532
8	Targhatu	33000	2	Sheikh Wasil	2120
	Sub-total	63915	3	Zarkhu	21120
	Zhob/ Sherani		4	Shamsaabad	12230
1	Kapip	1750		Sub-total	63002
2	ShahwanKhawe	1600		Nushki	
3	Bahlol	2560	1	Khaisar	140800
4	Majawar Shmbozai	14080	2	Ahmed Wall	45500
5	Shinghar	2560		Sub-total	186300
6	Khawaza	960		Killa Abdullah	
7	Merhail	8640	1	Popalzai	1516

¹⁴⁴ Development Statistics of Balochistan 2014-15, 2016, Planning & Development Department, Bureau of Statistics, GoP.

¹⁴⁵ Development Statistics of Balochistan 2014-15, 2016, Planning & Development Department, Bureau of Statistics, GoP.

¹⁴⁶ 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

¹⁴⁷ Planning and Development Division, Forest & Wildlife Department

#	Forest Name / District	Forest Area (in Acres)	#	Forest Name / District	Forest Area (in Acres)
	Sub-total	32150	2	PirAlizai	0
				Sub-total	1516
	Grand Total	397014			

4.6 Socioeconomic Profile

The socioeconomic profile of the districts includes status of social wellbeing through various indicators including health, education, livelihoods, agricultural productivity and infrastructure. This profile has been prepared using secondary sources of data which are referred to throughout this section.

4.6.1 Demography

The data for demography has been taken from district census reports of 1998 and results of 2017¹⁴⁸. Balochistan is the largest provinces of the country in terms of area (44 % of the country's land area), but the smallest in terms of population (about 6 %). According to the national population census conducted in 2017, the population of the province has increased to 12.34 million as compared to 6.5 million in 1998 recording an increase of 88% of over the last 19 years. The percentage of population in urban and rural areas in 2017 was 72.5% and 27.5% respectively. The average annual growth rate of population in Balochistan has shown a rising trend, increasing to 3.37 % during intercensal period 1998-2017 against 2.47 % during 1981-1998 (**Table 4.22**). The total population of eight project districts is 2.97 million with 2.37 million people residing in rural areas and 0.52 million in urban areas of the selected districts.

Table 4.22: Demographic Statistics ¹⁴⁹

Province/ District	Growth Rate 1981- 1998 (%)	Rural Population (1998)	Total Population (1998)	Urban Population (1998)	Growth Rate 1998- 2017 (%)	Rural Population (2017)	Urban Population (2017)	Total Population (2017)
Chagai	3.10	166,668	202,564	35,896	4.13	209,689	16,319	226,008
Killa Abdullah	4.46	313,499	370,269	56,792	3.97	608,236	149,342	757,578
Killa Saifullah	1.58	168,254	193,553	25,299	3.05	280,071	62,743	342,814
Mastung	1.31	140,514	164,645	24,131	3.04	231,332	35,129	266,461
Nushki	-	-	-	-	-	132,410	74,800	178,796
Pishin	3.6	344,228	367,183	22,955	3.6	593,339	143,142	736,481
Sherani	-	-	-	-	-	53,116	N/A	153,116
Zhob	1.51	231,299	275,142	43843	2.52	264,296	46,248	310,544
Total:		1,469,398	1,753,070	43843		2,372,489	46,248	2,971,798
Balochistan Province	2.47	4,797,055	6,565,885	1,768,830	3.37	8,943,532	3,400,876	12,344,408

¹⁴⁸ http://www.statistics.gov.pk/assets/publications/Population_Results.pdf. Assessed April 2 2018.

¹⁴⁹ http://www.pbs.gov.pk/sites/default/files/DISTRICT_WISE_CENSUS_RESULTS_CENSUS_2017.pdf.

Household data shows a comparison in the number of households and household size from 1998 to 2017¹⁵⁰. The average household size in Balochistan province was 6.9 in 2017¹⁵¹ as compared to 6.7 in 1998 recording an increase of 3%. The household size for rural and urban areas was 6.8 and 7.2 in 2017, whereas in 1998 it was 6.4 and 8.0 respectively¹⁵². There are a total of 440,504 households in the eight project districts with an average of 7 persons per household in 2017. The average household size varies among districts, with Killa Abdullah, Nushki, Chagai and Sherani districts having the largest household size between 7.2 and 8.0 persons, and Pishin district having the smallest average household size of 5.8 persons (**Table 4.23**).

Table 4.23: Total Number of Households and Household Size¹⁵³

Province/District	Total Number of Households		Household Size					
	1998	2017	1998			2017		
			District/Province	Rural	Urban	District/Province	Rural	Urban
Chagai District	29,788	31,081	6.8	9.5	6.4	7.3	7.2	8.1
Killa Abdullah District	46,284	97,210	8.0	7.6	11.1	8.0	7.8	7.7
Killa Saifullah District	27,250	53,478	7.0	6.9	7.8	6.4	6.4	6.3
Mastung District	20,841	38,801	7.9	7.8	8.8	6.9	6.8	7.0
Nushki District	-	22,662	-	-	-	7.9	7.8	8.2
Pishin District	54,997	128,080	6.8	6.6	9.1	5.8	5.8	5.6
Sherani District	-	21,213	-	-	-	7.2	7.2	
Zhob District	34,827	45,962	7.9	7.7	8.9	6.8	6.8	6.7
Total	239,851	440,504						
Balochistan Province	979,982	1,775,937	6.7	6.4	8.0	6.9	6.8	7.2

4.6.1.1 Chagai District

The Population of Chagai district increase 12% from 202,564 in 1998 to 226,008 in 2017, with 93% of the population residing in rural areas. The average annual growth rate of population in the district has shown a rising trend, increasing to 4.13 % during intercensal period 1998-2017¹⁵⁴ against 3.10 % during 1981-1998 (**Table 4.22**).

The total number of households in District Chagai was 31,081 in 2017 as compared to 29,788 in 1998. The average household size of the district was 7.3 in 2017 as compared to 6.8 in 1998 recording an increase of 7%. The household size for rural and urban areas was 7.2 and 8.1 in 2017 (**Table 4.23**).

¹⁵⁰ 1998 and 2017 Population Census, Government of Pakistan

¹⁵¹ The average household is calculated by the total population divided by the total number of households.

¹⁵² <http://www.pbscensus.gov.pk/sites/default/files/Files/BALUCHISTAN.pdf>. 2018

¹⁵³ 1998 and 2017 Population Census, Government of Pakistan

¹⁵⁴ http://www.pbs.gov.pk/sites/default/files//DISTRICT_WISE_CENSUS_RESULTS_CENSUS_2017.pdf. 2018.

4.6.1.2 Killa Abdullah District

The population of District Killa Abdullah increased 105% from 370,269 in 1998 to 757,578 in 2017, with 80.3% residing in rural areas. The average annual growth rate of population in the district has shown a declining trend, decreasing to 3.97 % during intercensal period 1998-2017 against 4.46 % during 1981-1998 (**Table 4.22**)

The total number of households in District Killa Abdullah was 97,210 in 2017 as compared to 46,284 in 1998, with an average household size of 8 recorded in both the 1998 and 2017 population census. In 2017, the household size for rural and areas was almost the same at 7.8 and 7.7 persons respectively (**Table 4.23**).

4.6.1.3 Killa Saifullah District

The population of District Killa Saifullah increased 77% from 193,553 in 1998 to 342,814 in 2017, with 81.7% in rural areas. The average annual growth rate of population in the district has shown a rising trend, increasing to 3.05% during intercensal period 1998-2017 against 1.58 % during 1981-1998 (**Table 4.22**).

The total number of households in District Killa Saifullah was 53,478 in 2017 as compared to 27,250 in 1998. The average household size in the district was 6.4 in 2017 as compared to 7.0 in 1998 showing a decline of 10%. In 2017, the household size was 6.4 and 6.3 for rural and urban respectively (**Table 4.23**).

4.6.1.4 Mastung District

The population of District Mastung increased 62% from 164,465 in 1998 to 266,461 in 2017, with 86.8% in rural areas. The average annual growth rate of population in the district has shown a rising trend, increasing to 3.04% during intercensal period 1998-2017 against 1.31 % during 1981-1998 (**Table 4.22**).

The total number of households in District Mastung was 38,801 in 2017 as compared to 20,841 in 1998. The average household size of the district was 6.9 in 2017 as compared to 7.9 in 1998 showing a decline of 12.7%. In 2017, the household size was 6.8 and 7.0 for rural and urban respectively (**Table 4.23**).

4.6.1.5 Nushki District

As Nushki is a new district, data from the 1998 census is not available. The population of District Nushki was recorded at 178,796 in 2017, with 74% residing in rural areas of the district (**Table 4.22**).

The total number of households in District Nushki was recorded at 22,662 in 2017, with an average household size of 7.9. The household size for rural and urban areas size was recorded at 7.8 and 8.2 respectively (**Table 4.23**).

4.6.1.6 Pishin District

The population of District Pishin increased 101% from 361,783 in 1998 to 736,481 in 2017, with 80.6% residing in rural areas of the district. The average annual growth rate of population remained the same at 3.6% during intercensal period 1998-2017 and 1981-1998 (**Table 4.22**).

The total number of households in District Pishin was 128,080 in 2017 as compared to 54,997 in 1998. The average household size of the district was 5.8 in 2017 as compared to 6.8 in 1998 showing a decline of 14.7%. In 2017, the household size was 5.8 and 5.6 for rural and urban respectively (**Table 4.23**).

4.6.1.7 Sherani District

As Sherani district was notified in 2006, data from the 1998 census is not available. The district is entirely rural, with a population of 153,116 recorded in the 2017 population census (**Table 4.22**).

The total number of households in District Sherani was 21,213 in 2017 with an average household size of 7.2. Sherani District is entirely rural (**Table 4.23**).

4.6.1.8 Zhob District

The population of District Zhob was 310,544 in 2017 ¹⁵⁵ as compared to 275,142 in 1998 recording an increase of 13 % over the last 19 years i.e. 1998-2017. The percentages for urban and rural areas were 85.1 and 14.9 in 2017, whereas in 1998, it was 84.1 and 15.9 respectively. ¹⁵⁶ The average annual growth rate of population in the district has shown a rising trend. It has increased to 2.52 % during intercensal period 1998-2017 against 1.51 % during 1981-1998 (**Table 4.22**).

The total number of households in District Zhob was 45,962 in 2017 as compared to 34,827 in 1998. The average household size of the district was 6.8 in 2017 as compared to 7.9 in 1998 showing a decline of 13.9%. In 2017, the household size was 6.8 and 6.7 for rural and urban respectively (**Table 4.23**).

4.6.2 Religion

The population of Balochistan province is predominantly Muslim, constituting 98.75% of the total population, (99.42% in rural and 96.61% in urban areas). **Table 4.24** gives the percentage distribution of the total population in each of the project districts by religion and rural/urban residence in 1998. Based on the 1998 population census, the project districts have 99.29 % Muslims, 1.14 % Hindu and 0.76 % Christian population. Data on religion from the 2017 population census is not yet available.

Table 4.24: Percentage of Population by Religion and Rural/Urban Areas¹⁵⁷

Province/	District	Chagai District	Killa Abdullah	Killa Saifullah	Mastung	Pishin	Zhob	Total %	Balochistan Province
Muslims	All Areas	98.8	99.51	99.51	99.02	99.48	99.43	99.29	98.75
	Rural	99.61	99.66	99.54	99.04	99.54	99.67	99.51	99.42
	Urban	95.05	98.7	99.47	99.01	98.48	98.15	98.14	96.61
Christian	All Areas	0.16	0.14	0.09	0.12	0.1	0.25	0.14	0.4
	Rural	0.04	0.03	0.1	0.13	0.02	0.01	0.06	0.06
	Urban	0.7	0.72	0.09	0.11	1.45	1.48	0.76	1.49

¹⁵⁵ http://www.pbscensus.gov.pk/sites/default/files/bwpsr/balochistan/ZHOB_SUMMARY.pdf. 2018.

¹⁵⁶ Zhob - District Development Profile, Jul 2011, Planning & Development Department, GoB, UNICEF.

¹⁵⁷ 1998 Population Census, Government of Pakistan

Province/	District	Chagai District	Killa Abdullah	Killa Saifullah	Mastung	Pishin	Zhob	Total %	Balochistan Province
Hindu Jati	All Areas	0.74	0.04	0.00 *	0.57	0.01	0.04	0.1	0.49
	Rural	0.05	0.00 *	0.00 *	0.53	0.01	0.00 *	0.09	0.15
	Urban	3.95	0.26	0.00 *	0.62	0.01	6.22	1.14	1.58
Ahmedi	All Areas	0.03	0.3	0.4	0.06	0.4	0.29	0.25	0.15
	Rural	0.02	0.3	0.36	0.07	0.42	0.32	0.25	0.14
	Urban	0.07	0.32	0.44	0.06	0.06	0.16	0.19	0.16
Scheduled Caste	All Areas	0.22	0.01	0.00 *	0.17	0.01	0.00 *	0.03	0.1
	Rural	0.26	0.01	0.00 *	0.18	0.01	0.00 *	0.03	0.12
	Urban	0.02	0.00 *	0.00 *	0.17	0.00 *	0.00 *	0.03	0.1
Others	All Areas	0.05	0.01	0.00 *	0.05	0.01	0.00 *		0.1
	Rural	0.01	0.01	0.00 *	0.06	0.01	0.00 *		0.1
	Urban	0.21	0.00 *	0.00 *	0.03	0.00 *	0.00 *		0.1

Data on Nushki and Sherani is not available since they are recently notified districts.

* Refers to negligible percent

- Information not available.

4.6.3 Ethnicity, Tribes and Languages

The data on ethnicity, tribes and languages is based on information found in the District Development Profiles¹⁵⁸ and Baseline Study Balochistan under Multi Donor Trust Fund¹⁵⁹. Balochistan is an ethnically diverse province with three main ethnic groups, Baloch, Brahvi and Pashtuns. In addition, there are a number of smaller groups including Sindhis, Saraikies, Delrnars, Khetrans, Meds, Jats and Loris.

Although Balochi is spoken over extensive areas in Balochistan, the province is essentially multilingual. In many regions, Brahvi, Pashto, Saraiki and dialects such as Dehwari, Khetrani and Mokaki of the Loris are spoken. The bulk of the Baloch/Brahvi population is bilingual and sometimes trilingual. Balochi and Brahvi may be their mother tongues but they are equally fluent in Sindhi and Saraiki. Similarly the majority of Baloch population living in the neighboring regions of Sindh and Punjab has largely adopted Sindhi and Saraiki as their mother tongue.

4.6.3.1 Chagai District

In Chagai district there are two major ethnic groups, the Baloch and Pashtun. Major tribes in the district include Bangalzai, Sultanazai, Mehtarzai, Bazkazai, Malazai, Jogazai, Mengal, Hasni, Sanjrani, Brech, Notezai, Shazai, Samalani, Sheerani, Hareefan.¹⁶⁰

The major language spoken in the area is Balochi, however, after the influx of afghan refugees during the afghan war, Pashto is also spoken in the parts of the district.

4.6.3.2 Killa Abdullah District

¹⁵⁸ District Development Profile, Jul 2011, Planning & Development Department, GoB, UNICEF.

¹⁵⁹ Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, The World Bank

¹⁶⁰ Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, The World Bank

Killa Abdullah has a mainly Pashtun population with a small number of Balochs in Burje-Aziz Khan area and settlers mainly in Chaman town. The major tribes are Achakzais, Kakars, Tareens and Syeds.¹⁶¹

Pashto is the prevailing language in the district, while Urdu is also understood and spoken in urban areas.

4.6.3.3 Killa Saifullah District

Most of the population of Killa Saifullah is Pashtun, the majority of which belongs to the Kakar tribe. Kakars living in Killa Saifullah district are divided into two major sub-tribes, the Sanzarkhels and Sanatia. The major branches of Sanzarkhel Kakars in the district include Jogizai, Rahatzai, Sargarhi, Mehterzai, Jalalzai, Musazai, Malaizai, Mardanzai, Akhtarzai, Faqirzai and Allozai, while the major branches of Sanatia Kakars include Sultanazai, Mullazai and Bakalzai.

Pashto is spoken in 98.9% of the households in the district, with the remaining speaking Punjabi, Balochi, Brahvi, Sindhi, Hindko and Saraiki.¹⁶²

4.6.3.4 Mastung District

The main ethnic groups in Mastung are Brahvi, Pashtun and Dehwar. The Brahvi tribes include Shahwani, Raisani, Bagulzai, Lehri and Kurd; the Pashtun tribes include Babri, Tareen and Yousafzai; and Dehwar tribes include Khwajakhail, Alizai and Mandozai.

The major languages spoken in Mastung District are Brahvi and Dehwari, a dialect of Persian.¹⁶³

4.6.3.5 Nushki District

Nushki has a predominantly Baloch and Brahvi population. The major tribes are Sherjan Agha, Mengal, Badini, Jamaldini, Sasoli, Hasni, Syed and Barech. The major languages spoken are Balochi, Brahvi and Urdu.¹⁶⁴

4.6.3.6 Pishin District

The population of Pishin district is mostly Pashtun. Major tribes include Kakar, Tarin, Syed and Achakzai. Pashto is spoken as a prevailing language in the district.¹⁶⁵

4.6.3.7 Sherani District

The major tribes in Sherani district are Sherani and Hareefan. Pashto is the major language spoken in the district.¹⁶⁶

4.6.3.8 Zhob District

¹⁶¹ Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, The World Bank

¹⁶² Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

¹⁶³ Mastung - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

¹⁶⁴ Nushki - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

¹⁶⁵ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

¹⁶⁶ Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, The World Bank.

The population of Zhob mainly belongs to the tribes of Mandokhels, Kakars, Sheranis, Haripals, Babars, Lawoons, Khosty and Syeds. Sulemankhels, Nasars, Kharots and other smaller tribes of Afghan origin are also present in the district. The major languages spoken are Pashto and Saraiki.¹⁶⁷

4.6.4 Migration

Migration data covers movement of population in terms of shifting residence from one district to another in the same province, from one province to another and from one country to another. According to the 1998 population census, the number of in-migrants in Balochistan was 249,615, constituting 3.8% percent of the total population. Out of these migrants 41.69% moved from one district to another within the province and 43% came from other areas of Pakistan, while 4% from other countries (**Table 4.25**)

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Table 4.25: Percentage of Migrants in Districts Rural/Urban

Place of Previous Residence		All Areas	Balochistan Province	Other Provinces	Other Countries	Not Reported
Balochistan	All Areas	100	41.69	43	4.07	11.13
	Rural	100	53.87	28.27	4.08	13.63
	Urban	100	35.26	50	4.07	9.8
Chagai	All Areas	100	16.7	70	6.65	6.48
	Rural	100	6.28	80.4	5.53	7.83
	Urban	100	38.13	49.2	8.95	3.71
Killa Abdullah	All Areas	100	3.17	91	0.24	5.63
	Rural	100	52.27	31.82	0.00 *	15.91
	Urban	100	2.3	92	0.24	5.45
Killa Saifullah	All Areas	100	50.7	42	2.25	4.2
	Rural	100	87.51	0.00 *	4.36	8.13
	Urban	100	11.46	86.38	0.00*	0.00 *
Mastung	All Areas	100	86.66	4.68	4.09	4.29
	Rural	100	90.67	0.78	4.87	3.68
	Urban	100	71.29	19.62	1.11	6.65
Nushki	All Areas	-	-	-	-	-
	Rural	-	-	-	-	-
	Urban	-	-	-	-	-
Pishin	All Areas	100	55.33	12.51	18.38	19.78
	Rural	100	60.27	2.59	21.95	15.19
	Urban	100	39.3	44.72	6.78	9.21
Sherani	All Areas	-	-	-	-	-

¹⁶⁷ Zhob - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

¹⁶⁸ 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

Place of Previous Residence		All Areas	Balochistan Province	Other Provinces	Other Countries	Not Reported
	Rural	-	-	-	-	-
	Urban	-	-	-	-	-
Zhob	All Areas	100	5.22	65.46	3.54	11.81
	Rural	100	5.95	77.44	7.46	9.15
	Urban	100	4.63	55.86	0.4	13.94

Note : Due to rounding the figure s may not add exactly up to 100 , * Refers to negligible percent, - Information not available.

4.6.4.1 Chagai District

The total lifetime in-migrants in the district in 1998 were 6,586 (3.25% of the total population), with 67.26% in rural and the remaining 32.74% in urban areas. Further details are provided in **Table 4.25**.

4.6.4.2 Killa Abdullah District

The total life time in-migrants in 1998 were negligible, 0.68% of the total population. Further details are provided in **Table 4.25**.¹⁶⁹

4.6.4.3 Killa Saifullah District

The total life time in-migrants in 1998 were 1.03% percent of the total population. Further details are provided in **Table 4.25**.

4.6.4.4 Mastung District

The total life time in-migrants in 1998 were only 2.65% of the total population. Further details are provided in **Table 4.25**.¹⁷⁰

4.6.4.5 Nushki District

As Nushki was not a notified district in 1998, data on migration is not available.

4.6.4.6 Pishin District

The total life time in-migrants in 1998 were 0.43% of the total population. Further details are provided in **Table 4.25**.¹⁷¹

4.6.4.7 Sherani District

As Sherani was not a notified district in 1998, data on migration is not available.

4.6.4.8 Zhob District

The total life time in-migrants in 1998 were 3.57% of the total population. Further details are provided in **Table 4.25**.¹⁷²

¹⁶⁹ 1998 District Census Report of Killa Abdullah, Sep 2000, Population Census Organization, Statistics Division, GoP.

¹⁷⁰ 1998 District Census Report of Pishin, Aug 2000, Population Census Organization, Statistics Division, GoP

¹⁷¹ 1998 District Census Report of Pishin, Aug 2000, Population Census Organization, Statistics Division, GoP

4.6.5 Refugees Fact Sheet

After more than three decades of protracted displacement, Afghan refugees still constitute the world's largest protracted refugee population under UNHCR's mandate, with some 2.6 million persons. While Afghan refugees are dispersed across more than 70 countries, an overwhelming 95 per cent of them (approximately 2.5 million) continue to be hosted by just two countries - the Islamic Republics of Iran and Pakistan. Of these, Pakistan currently hosts 1.61 million registered Afghan refugees, 37 per cent of whom live in 76 refugee villages, of which 75 are located along the borders with Afghanistan in Khyber Pakhtunkhwa and Balochistan. Over 300,000 of these refugees are living in the province of Balochistan.¹⁷³ In 2017, 59,000 Afghan refugees were repatriated to Afghanistan from Pakistan.¹⁷⁴

Since February 2017, the Government of Pakistan has made considerable efforts towards improving legislation regarding refugees and meeting the requirements of the 1951 Convention relating to the Status of Refugees and the 1967 Protocol relating to the Status of Refugees. However, these institutional changes have not yet been implemented and the Government of Pakistan extends the stay of registered refugees (holding proof of registration) on an annual basis. Regarding access to social services, as per the Constitution of Pakistan, refugees are not entitled to accessing education and health facilities. In practice, state provision of such services is weak and insufficient to meet the demands even of the local population let alone refugees.¹⁷⁵

Refugees in Balochistan are spread across rural and urban areas. In addition, there are some refugees who remain in 'refugee villages' or camps. These refugee populations have informal networks of support that govern their security, social and economic activities. The scattered refugee populations are represented by a Grand Shura of refugees, which meets as required and engages with the Council General of Afghanistan and the Commissioner of Refugees on a regular basis to safeguard the interests of refugees. However, given the legal status of refugees in Pakistan, Grand Shura is limited in the extent to which it can support refugee populations.

The Solutions Strategy for Afghan Refugees to Support Voluntary Repatriation, Sustainable Reintegration and Assistance to Host Countries (SSAR) remains the main regional framework for joint interventions aimed at identification and implementation of lasting solutions and providing support to host countries. Developed by the Islamic Republics of Afghanistan, Iran and Pakistan, with the support of UNHCR, the SSAR was endorsed by the international community in May 2012. It is structured around the following key outcomes:

- Support to voluntary repatriation
- Access to shelter and essential social services for refugees, returnees and host communities
- Improved and diversified livelihood opportunities and enhanced food security

¹⁷² 1998 District Census Report of Zhob, Jul 2000, Population Census Organization, Statistics Division, GoP

¹⁷³ Solutions Strategy for Afghan Refugees (SSAR), UNHCR 2014 <http://www.unhcr.org/en-us/562a44639.pdf>

¹⁷⁴ UNHCR Fact Sheet Pakistan, December 2017, <https://reliefweb.int/sites/reliefweb.int/files/resources/62369.pdf>

¹⁷⁵ BLEP Project Appraisal Document, World Bank, 2018

- Social and environmental protection of refugees and returnees, as well as assistance and support to host communities
- Capacity development of national authorities, associations, organizations and communities concerned with refugees, returnees and host communities

Even-though refugees living in urban and rural areas for almost 40 years are well integrated in the local economy, they do not have legal rights to own assets so their ability to engage in entrepreneurial activities is limited mainly to daily wage labor in the construction and agriculture sector and seasonal migration for income generation. Refugees have negligible access to transnational resources and even if they could receive remittances from the Afghan diaspora, financial services in Balochistan are not sufficiently evolved to enable refugees to utilize these funds. Organisations such as UNHCR have implemented vocational training programmes and other activities mainly in refugee villages to build the capacity of refugees to gain higher paying jobs. These interventions are aimed at improving the ability of refugees to reintegrate upon repatriation, with little emphasis on how refugee populations would sustain themselves until the repatriation occurs. In some instances, where refugees have been trained in 'alternative' skills such as masonry, carpentry, electronics and tile fitting, there is evidence of upward mobility not only in Pakistan but also after repatriation. The success of such interventions is limited: i) they remain supply-driven with limited impact and often enhance dependency; and, ii) access of refugees to technical and vocational training facilities remains limited due to political barriers. And while in principle, refugees can open bank accounts using Proof of Registration (PoR) cards, in practice, refugees have faced difficulties in this area. Access to formal sources of finance is non-existent for refugee populations.¹⁷⁶

Since 2009 the government of Pakistan has been implementing the Refugee Affected and Hosting Areas (RAHA) initiative, which serves as a cornerstone for the implementation of the Solutions Strategy for Afghan Refugees (SSAR) and a principal burden-sharing platform for maintaining protection space for Afghan refugees. RAHA implements a wide variety of projects across the sectors of education, health, livelihood, infrastructure, water and sanitation and social protection. Since the launch of the programme, over 4,100 projects have been implemented across all provinces of Pakistan and five agencies in the Federally Administered Tribal Areas (FATA), benefitting over 10.94 million people. In 2016 and 2017, nearly 250,000 Afghan benefitted from 51 RAHA projects. RAHA focuses on youth empowerment through education, skills training and livelihood support in line with the countrywide strategic priorities of UNHCR.¹⁷⁷

Skilled refugees are well integrated at the community level. A study completed by ILO and UNHCR¹⁷⁸ in March 2017 explores livelihoods for refugees in Balochistan and finds that in hiring daily wage labour, host communities and prospective employers do not distinguish between refugees and non-refugees rather base their hiring decisions upon skillset. Whereas host communities are engaged in formal jobs, agriculture, livestock

¹⁷⁶ BLEP Project Appraisal Document, World Bank, 2018

¹⁷⁷ UNHCR Fact Sheet Pakistan, December 2017, <https://reliefweb.int/sites/reliefweb.int/files/resources/62369.pdf>

¹⁷⁸ Islam, K. "Socio-Economic and Context Analysis – Afghan Refugees in Pakistan". 2017, International Labour Organisation

and mining, the refugees in the same geographically areas are engaged as daily wage labour in these sectors. In addition, the study finds that before migration, most refugees were engaged in agriculture and livestock while after migration, through skills enhancement programmes, they have been able to engage in sectors such as trading, apiculture, masonry, electric works and domestic workers.¹⁷⁹

Afghan refugees in urban and rural areas have different roles in the local economy. Evidence suggests that while rural refugees contribute to local economy through daily wage labor, assisting urban refugees to improve managerial and entrepreneurial skills can have a significant multiplier impact. It is also important to understand that humanitarian assistance targeted to only 'refugees' can contribute towards creating resentment amongst host populations. The perceptions of the local community towards refugees is hence an important factor to take into account while designing subprojects within BLEP framework that will target rural livelihoods of refugees.

4.6.6 Poverty and Employment

The share of agriculture as a share of total employment in Balochistan was 55.78 percent in 2010-11 and 43.4 percent in 2016-17. The corresponding figure for the share of industry in total employment has risen by approximately 9 percentage points from 11 percent in 2010-11 to 20 percent in 2016-17. Female labour force participation rates in Balochistan have increased from 5.6 percent in 2010-2011 to 11.3 percent in 2014-2015, which is still substantially lower than the national average of 25 percent.¹⁸⁰

According to a baseline survey conducted in the project districts in 2016,¹⁸¹ they have significant poverty, ranging from 33 percent in Killa Abdullah to 67 percent in Nushki. As expected, the proportion of poor households is higher in rural areas. Over 90 percent of the individuals in the age cohort are of 15-49 are unemployed and over 60 percent of those unemployed are illiterate. Daily wage labour is the main source of employment for majority of rural populations, accounting for over 50 percent of those employed. The second highest source of employment is paid/government jobs. A small minority of populations are self-employed, mainly running retail shops and agriculture. Between 25 and 40 percent of the respondents in the four districts reported that they do not have the ability, skills and capital, to establish their own businesses. Average cost of setting up businesses ranges between US\$ 2,500 for retail shops and trading businesses to US\$ 4,500 for agriculture while the earnings are neither high nor commensurate, ranging from US\$ 200 to US\$ 180 per month respectively.

Less than 20 percent of the population between the ages of 15 to 64 has received vocational training, going as low as 3 percent in Chagai and Nushki, however, the survey identifies a significant demand for training. While vocational training is mainly targeted towards men, females have also been trained in traditional skills such as embroidery, tailoring and handicrafts. Female employment in manufacturing in rural areas of Balochistan is 22 percent compared to 18 percent for men, although this is mainly in the handicrafts, embroidery and tailoring sectors. The main trades for vocational training highlighted in these districts are: electrician/mechanic, particularly repair of solar

¹⁷⁹ BLEP Project Appraisal Document, World Bank, 2018

¹⁸⁰ Project Appraisal Document, Balochistan Livelihoods and Entrepreneurship Project, The World Bank

¹⁸¹ Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, The World Bank.

products, masonry, driver and tailors. The survey finds that the greatest perceived advantages of vocational training include: i) efficiency in undertaking their current tasks; ii) enhanced employability, particularly in the private sector; and, iii) greater earnings. A small percentage of the population feels that vocational training and skills enhancement interventions will help them establish their own businesses (less than 10 percent).

In addition to these challenges related to poverty and low access to jobs and skills training, these areas are defined by their disproportionately high concentration of refugee populations.¹⁸²

4.6.6.1 Chagai District¹⁸³

Estimates of consumption poverty in Chagai show that close to 36 percent households of the district are designated poor. The distribution of poverty incidences is 37 and 34 percent for rural and urban areas respectively. **Table 4.26** shows that approximately 53 percent employed labor force works as manual labor (mostly on daily wages) with an approximate earning of 12,000 Rupees per month. Close to 16 percent are employed either in government or in semi-government organizations. The estimated average earning of government/semi government employees with 10 years of experience is 22,000 Rupees. Other notable sectors in the district include; retail shop (14.7%), job in private sector (4%) and farming (5%). Almost 19 percent employed persons confirmed in the survey that they have skills and experience pertinent to other profitable sectors. However, lack of required capital was reported to be the major hurdle.

The majority of unemployed members (63%) are in the age cohort of 15-25 years whereas close to 32 percent unemployed persons are in the age cohort of 26-49 years. However, in terms of educational attainment, as expected, vast majority of unemployed population is illiterate (75%). A high percentage (63%) of young people within the age cohort of 15-25 is looking for jobs. Majority of unemployed persons will prefer a job in the private sector (32.4%) or to establish their own business (26.4%).

Close to 29 percent of unemployed persons categorically denied having the skill or capability required for running small own account business, while about 60 percent preferred business in the form of either retail shop or trading goods. The estimates of seed capital vary and depend on the nature of business. However, according to the survey 250,000 Rupees will be required for a monthly earning of 15,000 Rupees on average.

¹⁸² Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, The World Bank.

¹⁸³ Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, The World Bank.

Table 4.26: Employment in Sample Households

Employed Persons in Sample Households			465
Area of Works:	(%)	Years of Working	Monthly Earning [Median Rupees]
Labor	53.0	9	12,000
Government/Semi-Government Job	15.6	10	22,000
Retail Shop	14.7	10	20,000
Farmer	5.1	11	18,000
Private Job	4.0	10	15,000
Driver	3.3	10	18,500
Preacher	1.1	5	15,000
Bricklayer	1.1	9	20,000
Livestock	1.0	10	15,000
Tailor	0.7	5	10,000
Contractor	0.4	13	19,000

4.6.6.2 Killa Abdullah District¹⁸⁴

Close to an estimated 46 percent households of the district are designated poor in Killa Abdullah. With a higher poverty incidence in urban areas (63%) as compared to rural areas (43%). Approximately 24 percent employed labor force works as manual labor mostly on daily wages with an approximate earning of 10,000 Rupees. Figure 2.2 also reveals that close to 9 percent are employed in either government or semi-government organizations. The estimated average earning of government / semi government employees with 10 years of experience is 24,000 Rupees. Other notable sectors in the district include; farming (10.8%), driver (7.6%), gardening (9.6%). Almost 53 percent employed persons confirmed that they have skills and experience pertinent to other profitable sectors. However, lack of capital restricts them from moving into that sector. Almost 76 percent (40% out of 53%) narrated this reason for not changing their current profession.

The majority (79%) of unemployed members are in the age cohort of 15-25 years, while close to 13 percent unemployed persons are in the age cohort of 26-49 years. An overwhelming majority of the household members (92%) looking for jobs never attended schools whereas 8 percent of the unemployed household members have education more than primary but less than 10th grade. An extremely high percentage of young people (79.4%) within the age cohort of 15-25 are looking for jobs. Majority of unemployed persons expressed their preference of getting a job in the private sector (36.3%). A significant percentage of unemployed members want to establish their own businesses or retail shop (24.5%).

¹⁸⁴ Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, The World Bank.

25 percent of unemployed persons categorically denied having the skill or capability required for running small businesses. Out of the people who expressed their interest in running their own businesses, almost 63% want to run a retail shop or trade goods. The estimates of seed capital vary and depend on the nature of business. On average 200,000 Rupees are required as a start-up cost to produce monthly earning of 15,000 Rupees.

Table 4.27: Employment in Sample Households

Employed Persons in Sample Households			875
Area of Works:	(%)	Years of Working	Monthly Earning [Median Rupees]
Retail Shop	35.7	10	14,000
Labor			10,000
Farming	23.6	9	
Government/Semi-Government Job	8.7	10	24,000
Orchard Farmer	9.6	10	17,000
Driver	7.6	10	18,000
Private Job	4.9	6	18,000
Bricklayer	0.7	5	8,000
Tailor	0.7	16	26,000
Mechanic	0.5	13	13,000
Property Dealer	0.2	6	19,500
Preacher	0.2	4	12,000
Pensioner	0.1	4	12,000
Plumber Electrician	0.1	8	15,000

4.6.6.3 Killa Saifullah District¹⁸⁵

Almost 66 percent households of the district are designated poor. The estimated poverty incidences are 65.9 and 69.6 percent for rural and urban areas respectively. **Table 4.28** shows that approximately 59 percent employed labor force is working as manual labor, mostly on daily wages with an approximate earning of 8,000 rupees per month. Close to 16 percent are either employed in government or semi-government organizations. The estimated average earning of government/semi government employees with 8 years of experience is 18,000 rupees. Almost 40 percent employed persons confirmed that they have skills and experience pertinent to other profitable sectors. However, the major reason for not moving to that sector is lack of required capital. Almost 45 percent (18% of 41%) narrated this reason for not changing their current profession. The majority of unemployed members (75%) are in the age cohort of 15-25 years whereas almost 20 percent unemployed persons are in the age cohort of

¹⁸⁵ Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, The World Bank.

26-49 years. A majority of unemployed population (77%) never attended school. Nonetheless, percentages of unemployed population who affirmed having education above primary level is notable (6%), while the incidence of having education above intermediate is also 9 percent.

Majority of unemployed persons (38%) stated private sector as their preferred destination of work. Almost 22 percent reported that they will prefer establishing their own businesses. 28 percent of unemployed persons categorically denied having the skill or capability required for running small own account business, while close to 68 percent preferred business in the form of either retail shop or trading goods. The estimates of seed capital vary and depend on the nature of business. The survey suggests that on average 150,000 Rupees will be required as a startup cost for expected monthly earnings of 14,000 Rupees.

Table 4.28: Employment in Sample Households

Employed Persons in Sample Households			597
Area of Works:	(%)	Years of Working	Monthly Earning [Median Rupees]
Labor Work	59.3	6	8,000
Government/Semi-Government Job	16	8	18,000
Self Employed (Retail Shop)	8.5	8	7,000
Driver	7.5	6	10,000
Orchard Farmer	3.6	5	10,000
Private Job	1.3	8	10,000
Tailor	1.7	4	11,000
Farmer	0.9	3	6,000
Preacher	0.6	3	6,000
Self Employed (Livestock)	0.6	10	11,500
Plumber Electrician	0.4	3	7,500
Watchman	0.4	4	14,500
Coal Miner	0.4	19	13,000
Contractor	0.2	10	8,000

4.6.6.4 Mastung District¹⁸⁶

Close to 18 percent households of the district are designated poor. The estimated poverty incidences are 21 and 8 percent for rural and urban areas respectively. Approximately 37 percent employed labor force reported working in a government or semi-government organization with an approximate earning of rupees 25,000 per month. Table 4.29 shows that close to 25 percent are self-employed and running retail shops. Other notable sectors in the district include; labor work (17%) and job in private sector (11%). Almost 8 percent employed persons confirmed that they have skills and experience pertinent to other profitable sectors. However, lack of required capital

¹⁸⁶ Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, The World Bank.

restricts them from moving into that sector. Almost 92 percent narrated this reason for not changing their current profession.

Majority (55%) of unemployed members are in the age cohort of 15-25 years, while close to 32 percent unemployed persons are in the age cohort of 26-49 years. A vast majority of unemployed population have never attended school (89%). Majority of unemployed persons will prefer a job in the private sector (51%) or to establish their own business or retail shop (14%). 37 percent of unemployed persons categorically denied having the skill or capability required for running small own account business, while almost 53 percent preferred business in the form of either retail shop or trading goods. The survey suggests that on average 175,000 Rupees will be required as a startup cost for expected monthly earnings of 15,000 Rupees.

Table 4.29: Employment in Sample Households

Employed Persons in Sample Households			552
Area of Works:	(%)	Years of Working	Monthly Earning [Median Rupees]
Government/Semi-Government Job	37.2	9	25,000
Retail Shop	25.3	10	20,000
Labor	16.6	6	12,000
Private Job	10.5	5	17,000
Driver	6.1	10	15,000
Farmer	2.8	10	15,000
Orchard Farmer	1.8	6	11,000
Property Dealer	0.4	9	30,000
Pensioner	0.4	14	15,000
Plumber Electrician	0.4	12	22,500
Livestock	0.4	10	21,000
Tailor	0.2	2	3,200

4.6.6.5 Nushki District¹⁸⁷

Almost 34 percent of the surveyed households in Nushki district are designated poor. The estimated poverty incidences are 28 and 71 percent for rural and urban areas respectively. In terms of estimated incidence, poverty is significantly high in urban areas as compared with rural.

Table 4.30 shows that the highest percentage of employed household members are manual laborers. Almost 47 percent employed members confirmed this occupation with approximately 10 years of experience and monthly earnings of 8,000 Rupees. Almost 27 percent are employed either in government or in semi- government organizations with an approximate earning of 20,000 Rupees. Almost 38 percent employed persons confirmed that they have skills and experience pertinent to other profitable sectors. However, the major reason for not moving to that sector is lack of capital, which was

¹⁸⁷ Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, The World Bank.

narrated by almost 30 percent of the 38 percent skilled members. Majority of unemployed members (62.3%) are in the age cohort of 15-25 years, while close to 33 percent unemployed persons are in the age cohort of 26-49 years. However, in terms of educational attainment, unexpectedly vast majority (52%) of unemployed population reported having education above primary level, while 10 percent of the household members looking for jobs have more than 12 years of education. Majority of unemployed persons will like to set up their own businesses (37%) whereas 25 percent of the respondents will prefer getting a job in the private sector. 8 percent of unemployed persons categorically denied having the skill or capability required for running small own account business, while close to 69 percent preferred business in the form of either retail shop or trading goods. The survey suggests that on average 250,000 Rupees will be required as a startup cost for expected monthly earnings of 15,000 Rupees.

Table 4.30: Employment in Sample Households

Employed Persons in Sample Households			502
Area of Works:	(%)	Years of Working	Monthly Earning [Median Rupees]
Labor	46.8	10	8,000
Government/Semi-Government Job	26.9	9	20,000
Retail Shop	10.6	9	12,500
Private Job	5.4	8	13,450
Driver	5.4	10	12,500
Farmer	1.9	21	10,000
Tailor	1.6	10	13,000
Watchman	1.2	4	11,000
Orchard Farmer	0.8	8	11,750
Plumber Electrician	0.4	13	10,000
Preacher	0.4	16	8,250
Bricklayer	0.4	20	10,500
Property Dealer	0.2	3	12,000
Contractor	0.2	4	15,000
Repair Refrigerators	0.2	4	15,000
Mechanic	0.2	7	15,000

4.6.6.6 Pishin District¹⁸⁸

Almost 41 percent of the surveyed households from Pishin district are designated poor. The estimated poverty incidences are 47 and 8 percent for rural and urban areas respectively. **Table 4.31** shows that the highest category of employed members belongs to the trading profession (retail shop, border trade etc.). Almost 33 percent employed members confirmed this occupation with approximately 9 years of experience and monthly earnings of 20,000 rupees. Approximately 31 percent

¹⁸⁸ Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, The World Bank.

employed members work as ‘manual labor’ (mostly on daily wages) with an approximate earnings of 10,000 rupees per month. 20% are employed either in government or in semi- government organizations. The estimated average earning of government / semi government employees with 10 years of experience is 25,000 rupees. Almost 36 percent employed persons confirmed that they have skills and experience pertinent to other profitable sectors. However, the major reason for not moving to that sector is lack of capital, which was narrated by almost 32 percent of the 36 percent skilled members.

Majority (61%) of members looking for a job are in the age cohort of 15-25 years, while close to 27 percent unemployed persons are in the age cohort of 26-49 years. However, in terms of educational attainment, 70% of unemployed population is illiterate. Majority of unemployed persons will prefer setting up a business (39.3%) whereas 29.6% want to work in the private sector. 28 percent of unemployed persons categorically denied having the skill or capability required for running small own account business, while close to 75 percent preferred business in the form of either retail shop or trading goods. The survey suggests that on average 300,000 Rupees will be required as a startup cost for expected monthly earnings of 17,000 Rupees.

Table 4.31: Employment in Sample Households

Employed Persons in Sample Households			589
Area of Works:	(%)	Years of Working	Monthly Earning [Median Rupees]
Retail Shop/Trader Labor	33.0	9	20,000
Labor	30.6	6	10,000
Government/Semi-Government Job	19.9	10	25,000
Farmer	9.5	10	15,000
Orchard Farmer	2.6	5	12,000
Private Job	1.7	15	20,000
Driver	1.5	15	15,000
Watchman	1.2	4	15,000
Contractor	0.3	21	22,500
Property Dealer	0.2	4	15,000
Tailor	0.2	15	20,000
Doctor	0.2	15	20,000
Repair Worker-Refrigerators	0.2	22	20,000
Plumber / Electrician	0.2	10	8,000
Preacher	0.2	2	4,500
Livestock	0.2	8	20,000

4.6.6.7 Sherani District¹⁸⁹

¹⁸⁹ Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, The World Bank.

Sherani is an entirely rural district, with a significantly high incidence of poverty. Almost 96 of the district's population is classified as poor. **Table 4.32** shows that approximately 49 percent of the employed labor force reported working as manual labor (mostly on daily wages) with an approximate earning of 8,000 Rupees per month. Almost 28 percent employed members belong to trading profession with approximately 7 years of experience and monthly earning of rupees 12,000. Close to 8 percent are employed either in government or in semi-government organizations. The estimated average earning of government/semi government employees with 8 years of experience is 18,000 Rupees. Almost 39 percent employed persons confirmed that they have skills and experience pertinent to other profitable sectors. However, the major reason stated for not moving to that sector is lack of required capital, reported by 67%.

Majority of unemployed members (70%) are in the age cohort of 15-25 years, while close to 20 percent unemployed persons are in the age cohort of 26-49 years. However, in terms of educational attainment, a vast majority of unemployed population is illiterate (94%). Majority of unemployed persons said that they will prefer to set a retail shop (34.2 %) followed by a job in the private sector (27.4%). 24 percent of unemployed persons categorically denied having the skill or capability required for running small own account business whereas close to 72 percent preferred business in the form of either retail shop or trading goods. The estimates of seed capital vary and depend on the nature of business. The survey suggests that on average 200,000 Rupees will be required as a startup cost for expected monthly earnings of 18,000 Rupees.

Table 4.32: Employment in Sample Households

Employed Persons in Sample Households			597
Area of Works:	(%)	Years of Working	Monthly Earning [Median Rupees]
Labor	49.0	8	8,000
Retail Shop	28.3	7	20,000
Government/Semi-Government Job	8.8	8	18,000
Driver	5.5	10	14,000
Private Job	3.7	5	14,000
Tailor	2.0	4	7,000
Bricklayer	1.0	20	15,000
Contractor	0.8	4	13,000
Preacher	0.6	15	10,000
Property	0.4	4	20,500
Farmer	0.4	14	15,000
Plumber	0.4	5	20,500
Mechanic	0.4	12	10,000
Orchard Farmer	0.2	3	7,000
Watchman	0.2	3	7,000
Butcher	0.2	4	13,000

4.6.6.8 Zhob District¹⁹⁰

Close to 39 percent households of the district are designated poor. The estimated poverty incidences are 44 and 21 percent for rural and urban areas respectively. **Table 4.33** shows almost 37 percent employed members are in trading (retail shop, border trade etc.) with approximately 8 years of experience and monthly earning of rupees 12,000. Around 25% were working as daily wages labour with an approximate earning of rupees 10,000 per month. Close to 20 percent are employed either in government or in semi-government organizations. The estimated average earning of government / semi government employees with 7 years of experience is 20,000 Rupees. Almost 24 percent employed persons confirmed that they have skills and experience pertinent to other profitable sectors. However, the major reason for not moving to that sector was a lack of required capital. Almost 18 percent out of 24 narrated this reason for not changing their current profession.

67 percent of unemployed members are in the age cohort of 15-25 years, while close to 28 percent unemployed persons are in the age cohort of 26-49 years. In terms of educational attainment, 86 percent of unemployed population is illiterate. 32.4% unemployed persons preferred a job in private sector and 26.4% wanted to set up an own business or retail shop. 28 percent of unemployed persons categorically denied having the skill or capability required for running small own account business, while close to 62 percent preferred business in the form of either retail shop or trading goods. The estimates of seed capital vary and depend on the nature of business. The survey suggests that on average 300,000 Rupees will be required as a startup cost for expected monthly earnings of 20,000 Rupees.

Table 4.33: Employment in Sample Households

Employed Persons in Sample Households			597
Area of Works:	(%)	Years of Working	Monthly Earning [Median Rupees]
Retail Shop	36.9	8	12,000
Labor	25.3	7	10,000
Government/Semi-Government Job	19.2	7	20,000
Farmer	6.1	9	15,000
Driver	4.7	8	12,000
Private Job	3.8	7	15,000
Property Dealer	1.9	7	22,000
Tailor	1.4	8	8,000
Bricklayer	0.7	7	7,500
Watchman	0.5	16	10,000
Preacher	0.3	6	13,000
Pensioner	0.2	5	18,000
Repair Refrigerators	0.2	3	8,000
Plumber / Electrician	0.2	5	17,000

¹⁹⁰ Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, The World Bank.

4.6.7 Agriculture

Agriculture is currently the most important sector of Balochistan's economy and contributes as much as 52% of GDP. The geographical area of Balochistan province is 34,719,000 hectares out of which a potential area of 3,190,652.2 hectares can be cultivated (9.2%) (**Table 4.34**). There are two cropping seasons (Rabi and Kharif). Rabi crops include; Wheat, Barley, Mustard, Cumin, Gram, Muttar Pulse, Masoor, Vegetables, Fodders, Canola and Sunflower. These crops are sown in the winter or during the early summer and harvested in the late summer. Kharif crops include; Rice, Jowar, Bajra, Maize, Sesamum, Casterseed, Pulses, Fruits, Onion, Potato, Vegetables, Melons, Chilies, Fodders, Corriander, Garlic, Guarseed, Tobacco, Sugarcane and Cotton. All these crops come under cash crops and they are sown in the summer and harvested in the late summer or early winter.¹⁹¹

Table 4.34: Land Utilization Statistics by District¹⁹²

Province/District	Geographical Area	Total Cultivated Area	Current Falow	Net Sown	Unavailable for Cultivation
Balochistan Province	34,719,000	3,190,652.2	2,137,539.2	1,053,113	9,834,599
Chagai District	4,474,800	142,110	136,114	5,996	2,432,520
Killa Abdullah District	323,800	15,704	6,359	9,345	0
Killa Saifullah District	68,3100	151,619	62,955	88,664	141,310
Mastung District	68,6100	203,485	182,291	21,194	47,511
Nushki District	579,700	15,468	1,160	14,308	0
Pishin District	787,400	155,951	131,973	23,978	82,150
Sherani District	280,000	6,474	3,286	3,188	0
Zhob District	1,749,700	59,463	43,192	16,271	87,612
Total:	44,283,600	3,940,926	2,704,869	1,236,057	12,625,702

4.6.7.1 Chagai District

The geographical area of district Chagai is 4,474,800 hectares out of which a potential area of 3.2% (142,110 hectares) is available for cultivation. According to the figures the current fallow area is 136,114 hectares while the net sown area is 5,996 hectares (**Table 4.34**). The district has vast potential for development which is constrained by the scarcity of water. However, this could be overcome by efficient conservation of flood water and the recharge of existing water resources. This would increase the cropping area of the district. Rabi crops include Wheat, Barley, Rapeseed/Mustard, Cumin, Lentil (Masoor), Vegetable, Fodder and Sunflower. Kharif crops include Sorghum (Jowar), Millet (Bajra), Maize, Mung bean, Mash Bean, Onion, Vegetable, Melon, Chilies, Fodder,

¹⁹¹ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

¹⁹² Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

Coriander, Garlic and Cotton.¹⁹³ Major fruits grown in Chagai include Almond, Apricot, Grapes, Peach, Plum, Pear, Pomegranate and Dates ¹⁹⁴.

4.6.7.2 Killa Abdullah District

The geographical area of district Killa Abdullah is 323,800 hectares out of which 4.8% (15,704 hectares) is available for cultivation. According to the figures the current fallow area is 6,359 hectares while the net sown area is 9,345 hectares (**Table 4.34**).¹⁹⁵ Rabi crops include Wheat, Barley, Cumin, Vegetables and Fodder. Kharif crops include Fruits, Melons, Vegetables, Tobacco, Potato, Fodder and Onion. Major fruits grown in Killa Abdulla include Apple, Apricot, Grapes, Peach, Plum and Pomegranate.¹⁹⁶

4.6.7.3 Killa Saifullah District

The geographical area of district Killa Saifullah is 683,100 hectares out of which 22.2% (151,619 hectares) is available for cultivation. According to the figures the current fallow area is 62,955 hectares while the net sown area is 88,664 hectares (**Table 4.34**).¹⁹⁷ Growth and development possibilities are available in the district, although water scarcity is a major constraint to agricultural development. Rabi crops include Wheat, Barley, Cumin, Vegetables, Fodder and Sunflower. Kharif crops include Maize, Mung bean, Mash bean, fruits, Onion, Potato, Vegetables, Melons, Chilies, Fodder, Tobacco and Cotton. Major fruits include Almond, Apple, Apricot, Grapes, Peach, Pear, Pomegranate and Cherry¹⁹⁸

4.6.7.4 Mastung District

The geographical area of district Mastung is 686,100 hectares out of which 29.7% (203,485 hectares) is available for cultivation. According to the figures the current fallow area is 182,291 hectares while the net sown area is 21,194 hectares (**Table 4.34**).¹⁹⁹ For the development of land for agriculture availability of water is a major constraint. Rabi crops include Wheat, Barley, Cumin, Vegetables, Fodder and Sunflower. Kharif crops include Mung bean, Fruits, Onion, Potato, vegetables, Melons, Chilies, Fodder, Coriander and Garlic. Major fruits include Almond, Apple, Apricot, Grapes, Peach, Plum, Pear, Pomegranate, Cherry, and Pistachio. Female and child labor involvement in agriculture and horticulture sectors is significant. For seasonal labor male and female nomads are hired. The laborers also involve their families (women and children) at the time of sowing and harvesting of crops. Wheat for example is cultivated by men, but at the time of harvesting the whole family helps in the field. Women also participate in the cleaning of food grains etc.²⁰⁰

4.6.7.5 Nushki District

¹⁹³ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

¹⁹⁴ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

¹⁹⁵ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

¹⁹⁶ Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

¹⁹⁷ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

¹⁹⁸ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

¹⁹⁹ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

²⁰⁰ Mastung- District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

The geographical area of district Nushki is 579,700 hectares out of which only 2.7% (15,468 hectares) is available for cultivation. According to the figures the current fallow area is 1,160 hectares while the net sown area is 14,308 hectares (**Table 4.34**).²⁰¹ Major crops include Wheat, Onion, Cotton, Barley, Tomato, Honey Melon, Water Melon, Grapes, Dates and Cumin.²⁰²

4.6.7.6 Pishin District

The geographical area of district Pishin is 787,400 hectares out of which 19.8% (155,951 hectares) is available for cultivation. According to the figures the current fallow area is 131,973 hectares while the net sown area is 23,978 hectares (**Table 4.34**).²⁰³ Rabi crops include Wheat, Barley, Cumin, Vegetables and Fodder. Kharif crops include fruits, Melons, Vegetables, Tobacco, Potato, Fodder and onion. Female labor involvement in agriculture and horticulture sector is negligible. In District Pishin most of the agricultural work is done through mechanization, tractors are used for the plowing of land and tube-wells are used for watering the fields. Therefore, the need for manual labor has been reduced to a great extent.²⁰⁴

4.6.7.7 Sherani District

The geographical area of district Sherani is 280,000 hectares out of which only 2.3% (6,474 hectares) is available for cultivation. According to the figures the current fallow area is 3,286 hectares while the net sown area is 3,188 hectares (**Table 4.34**).²⁰⁵ The district is known for cultivate of olives, pine nuts (chilgoza) and medicinal plants.

4.6.7.8 Zhob District

The geographical area of district Zhob is 1,749,700 hectares out of which 3.4% (59,463 hectares) is available for cultivation. According to the figures the current fallow area is 43,192 hectares while the net sown area is 16,271 hectares (**Table 4.34**).²⁰⁶ Rabi crops include Wheat, Barley, Rapeseed /Mustard, Vegetables and Fodder. Kharif crops include Sorghum (Jowar), Maize, Mung bean, Mash bean, Fruits, Onion, Potato, Vegetables, Melons, Chilies, Fodder, Garlic and Tobacco. Major fruits include Apples, Apricots, Pomegranates, Grapes and Peach²⁰⁷

4.6.8 Livestock

The herdsmen of Balochistan are among the best breeders of sheep, goat, cattle, horse and camel in Pakistan. Animal husbandry is the main stay of Balochistan's rural economy. It not only engages and provides sustenance to a large rural population in the province but also contributes substantially to the national economy in the form of export earnings from finished leather and leather goods.²⁰⁸ According to the livestock census 2006, sheep and goats constitute the largest proportion of livestock in

²⁰¹ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

²⁰² Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, The World Bank.

²⁰³ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

²⁰⁴ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²⁰⁵ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

²⁰⁶ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

²⁰⁷ Zhob - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²⁰⁸ 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

Balochistan estimated at 45.6% and 41.9% followed by cattle (8.03%). Asses (1.68%), Camels (1.35%), Buffaloes (1.14%), Horses (0.21%) and Mules (0.02%) constitute a small proportion of livestock (**Table 4.35**). In 2016 a network of 110 veterinary hospitals and 841 veterinary dispensaries were functioning in the province.²⁰⁹ Total livestock holding of the project district are 12,517,097 animals.

Table 4.35: Livestock Population by District²¹⁰

Province/District		Balochistan	Chagai	Killa Abdullah	Killa Saifullah	Mastung	Nushki	Pishin	Sherani	Zhob	Total of project districts
Cattle	2006	2,253,581	6,576	53,111	69,361	8,628	-	91,433	-	178,658	407,767
	2016	4,347,320	12,686	102,455	133,802	16,644	-	176,381	-	344,644	1,131,256
Buffaloes	2006	319,854	20	479	151	456	-	994	-	5,524	13,148
	2016	820,300	51	1,228	387	1,169	-	2,549	-	14,167	33,718
Sheep	2006	12,804,217	205,725	325,020	1,066,690	466,894	-	837,233	-	1,174,735	5,251,032
	2016	15,300,754	245,837	388,392	1,274,671	557,928	-	1,000,475	-	1,403,782	6,274,867
Goats	2006	11,784,711	299,363	115,405	783,624	334,906	-	504,510	-	875,922	3,789,652
	2016	15,211,691	386,417	148,965	1,011,501	432,296	-	651,221	-	1,130,639	4,891,678
Camels	2006	379,528	17,543	359	21,751	2,802	-	745	-	1010	45,220
	2016	441,119	20,390	417	25,281	3,257	-	866	-	1,174	52,559
Hourses	2006	59,973	100	690	1,359	85	-	3,343	-	370	6,317
	2016	91,035	152	1,047	2,063	129	-	5,074	-	562	9,589
Mules	2006	6,256	83	151	270	121	-	467	-	168	1,428
	2016	17,237	229	416	744	333	-	1,287	-	463	3,935
Asses	2006	471,942	4,124	4,008	21,248	6,770	-	21,220	-	18,351	94,072
	2016	599,487	5,239	5,091	26,990	8,600	-	26,955	-	23,311	119,497
Total	2006	28,080,062	533,534	499,223	1,964,454	820,662	-	1,459,945	-	2,254,738	9,787,294
Total	2016	36,828,938	671,000	648,012	2,475,439	1,020,356	-	1,864,808	-	2,918,741	12,517,097

4.6.8.1 Chagai District

District Chagai has an enormous potential in livestock sector which provides livelihood to a significant population of poor families. The livelihood of nomads is dependent to livestock who mostly live in the northern part of the district.²¹¹ The sector is not only useful in providing nutritious food like meat, milk, eggs, but also produces raw material such as manure, offal, trotters, hides and skins, wool and blood for various industries. However, the district lacks processing units and marketing system for dairy products and other industries.²¹²

²⁰⁹ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

²¹⁰ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

²¹¹ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²¹² Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

According to the livestock census 2006, goats and sheep constitute the largest proportion of livestock in Chagai district estimated at 56.1% and 38.6% respectively followed by camels (3.29%) and cattle (1.23%) (**Table 4.35**). In 2016 a network of 5 veterinary hospitals and 13 veterinary dispensaries was functioning in the district.²¹³ Among nomads the whole family is usually involved in livestock sector, women and children look after the supervision and management such as grazing, watering, feeding, cleaning the abodes and curing of livestock by traditional methods. Women make home dairy products such as yogurt, butter and ghee also which are mostly used within the family.²¹⁴

4.6.8.2 Killa Abdullah District

District Killa Abdullah has an enormous potential in livestock sector which provides livelihood to a significant population of poor families. The livelihood of nomads is dependent to livestock who mostly live in the northern part of the district.²¹⁵ The sector is not only useful in providing nutritious food like meat, milk, eggs, but also produces raw material such as manure, offal, trotters, hides and skins, wool and blood for various industries. However, the district lacks processing units and marketing system for dairy products and other industries.²¹⁶

According to the livestock census 2006, sheep and goats constitute the largest proportion of livestock in Killa Abdullah district estimated at 65.1% and 23.1% respectively followed by cattle (10.64%) (**Table 4.35**). In 2016 a network of 4 veterinary hospitals and 28 veterinary dispensaries was functioning in the district.²¹⁷ Traditionally, all family members are involved in the livestock sector, especially women and children are engaged in supervision and management of livestock activities such as grazing, watering, feeding, cleaning the abodes and curing of livestock by traditional methods. Women are also involved in making home dairy products such as yogurt, butter and ghee, which are mostly used within the family.²¹⁸

4.6.8.3 Killa Saifullah District

District Killa Saifullah has substantial rangelands to support livestock, which provides livelihood to many poor families. Mostly the nomadic population depends on livestock, who resides in the northern part of the district. Livestock farming is a traditional activity in the district and comprises mostly Goats, Sheep, Cows, Buffaloes, Cattle, Camels and Asses. Sheep constitutes major portion of the livestock population in District Killa Saifullah.²¹⁹ According to the livestock census 2006, sheep and goats constitute the largest proportion of livestock estimated at 54.30% and 39.89% respectively followed by cattle (3.53%) camels (1.11%) and asses (1.08%). (**Table 4.35**). In 2016 a network of 5 veterinary hospitals and 37 veterinary dispensaries was functioning in the district.²²⁰

²¹³ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

²¹⁴ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²¹⁵ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²¹⁶ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²¹⁷ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

²¹⁸ Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²¹⁹ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²²⁰ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

Traditionally, whole families are involved in the livestock sector, especially women and children are engaged in supervision and management of livestock activities such as grazing, watering, feeding, cleaning the abodes and curing of livestock by traditional methods. Women are also involved in making home dairy products such as yogurt, butter and ghee which are mostly used within the family.²²¹

4.6.8.4 Mastung District

According to the livestock census 2006, sheep and goats constitute the largest proportion of livestock in Mastung district estimated at 56.89% and 40.81% respectively followed by cattle (1.05%) (**Table 4.35**). In 2016 a network of 3 veterinary hospitals and 18 veterinary dispensaries was functioning in the district.²²²

4.6.8.5 Nushki District

As Nushki is a recently notified district, data on livestock is not available.

4.6.8.6 Pishin District

District Pishin has enormous potential in livestock sector, which provides livelihood to many poor families. Mostly the nomadic population depends on livestock, which resides in the northern part of the district.²²³ According to the livestock census 2006, sheep and goats constitute the largest proportion of livestock in Pishin district estimated at 57.35% and 34.56% respectively followed by cattle (6.26%) and asses (1.45%) (**Table 4.35**). In 2016 a network of 6 veterinary hospitals and 41 veterinary dispensaries was functioning in the district.²²⁴ Traditionally, all family members are involved in the livestock sector, especially women and children are engaged in supervision and management of livestock activities such as grazing, watering, feeding, cleaning the abodes and curing of livestock by traditional methods. Women are also involved in making home dairy products such as yogurt, butter and ghee which are mostly used within the family.²²⁵

4.6.8.7 Sherani District

Sherani was notified as a district in 2006, hence data for livestock is not available.²²⁶

4.6.8.8 Zhob District

According to the livestock census 2006, sheep and goats constitute the largest proportion of livestock in Zhob district estimated at 52.10% and 38.85% respectively followed by cattle (7.92%) (**Table 4.35**). In 2016 a network of 6 veterinary hospitals and 52 veterinary dispensaries was functioning in the district.²²⁷ Like other district of Balochistan, in Zhob too, livestock rearing has been a traditionally activity involving, at times, the entire family. Women and children are also engaged in supervision and

²²¹ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²²² Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

²²³ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²²⁴ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

²²⁵ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²²⁶ Sherani - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²²⁷ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

management of livestock activities such as grazing, watering, feeding, cleaning the abodes. Women are also involved in making home dairy products such as yogurt, butter and ghee, which are mostly used within the family.²²⁸

4.6.9 Mining

Balochistan has a rich and variegated minerals profile with potential for both metallic and non-metallic minerals. There are also sizeable reserves of coal. However, this potential has not been fully exploited, contributing only about 3 percent to the GDP. The total value in rupee terms of minerals is Rs. 3.4 billion out of which 3.1 billion rupees come from natural gas alone. Other important minerals are marble, barite, chromite and fluorite. A major project for copper and gold extraction is at Saindak.²²⁹ Apart from the Saindak and Reko Dik copper and gold mines in the Chagai district, most of the minerals potential of the province remains unexplored. Balochistan has more than half of the national prospective geology for minerals, yet it contributes just over one-fifth to national mining GDP, and leads only in the production of coals. The mining sector is held back by low funds and low productivity.²³⁰

4.6.9.1 Chagai District

As per tectonic setting of Chagai district, the region is gifted with natural resources and minerals, in particular. Major deposits and discoveries found include Copper, Gold, Silver, Molybdenum, Sulphide, Iron Ore, Chromite, Manganese, Tungston, Barite, Gypsum, Pumice, Onyx Marble, Sulphur and Vermiculite. 308 mining leases have been granted to the private sector for utilization of minerals out of which 225 are Prospecting Licenses and 83 Mining Leases. Furthermore, 30 Exploration licenses and 2 Large Scale Mining Leases are granted to multinational and national mineral exploration companies for three years, which are renewable subject to the conditions laid down in the Balochistan Mineral Rules 2002. As a result, international quality deposits have been discovered at RekoDik and at PachinKoh, Chigendik and Chilgazi, confirm reserves of 73 million tons of Iron Ore have been found.²³¹

4.6.9.2 Killa Abdullah District

The only sporadically mined mineral in the district is Antimony. Major deposits of Antimony are at Ranjo Sooka and Killa Viallah, where stibnite is associated with Quartz veins which fill fractures and joints in Khojak shale of Obigocene age. The mineral resources in the district are of less economic significance and there is less potential for mineral development in the district.²³²

4.6.9.3 Killa Saifullah District

²²⁸ Zhob - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²²⁹ 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

²³⁰ Balochistan Strategy - a road map to inclusive socio-economic development for the province, 2013, Pakistan Poverty and Alleviation Fund (PPAF).

²³¹ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²³² Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

District Killa Saifullah has several mineral deposits such as, Chromite, Magnesite, Marble, Asbestos, Amethyst, Gabbro, Iron Ore, Limestone and Copper. Moreover, there is occurrence of Manganese, Calcite, Soap Stone and Coal in the area but the mining of these minerals on commercial scale has not been reported.²³³ Over an area of 48,548 acres 46 prospecting licenses and 20 mining leases have been granted to the private sector for mining of minerals. An exploration license has also been granted for three years to explore minerals in the district. The production of Chromite during the years 2005-2010 has increased from 31,699 to 109,054 metric tons and Magnesite production varied in 75 to 1,903 metric tons, whereas low production of Manganese, Copper and Iron ore was reported.²³⁴

4.6.9.4 Mastung District

Iron ore and fluorite deposits occur in Dilband area. The oldest formation in the area is the Chiltan Limestone, in which fluorite is deposited in the shape of small veins, irregular pods, pockets and along beds. Geological Survey of Pakistan's research work has proven the resources of Iron Ore of economic significance. Twenty prospecting licenses and one mining lease has been granted over an area of 65,634 acres for mineral extraction to the private sector. Only fluorite and limestone are being mined for the last five years. The mineral resources in the district are of economic value and can be exploited on large scale. Limestone deposits can be utilized in the production of cement also.²³⁵

4.6.9.5 Nushki District

Mining concessions are granted for Chromite while some deposits of graphite are reported in the shape of stringers but grade and size of the ore is not known. The deposits of Sheikh Wasal are located 3 Km north-west of the Sheikh Wasal, which is 72 km south-west of Quetta on Quetta Nushki road and railway line. Two prospecting licenses were granted for Chromite (acreage: 4131.32) in the district but no production has been reported during the years 2005-2010. Mining leases were granted to the private sector but no significant results achieved so far.²³⁶

4.6.9.6 Pishin District

District Pishin has substantial potential for mining of Chromite. There is also a presence of Dolomite, Soap Stone and Laterite but these are not significant for commercial scale mining. A total number of 25 licenses have been granted to different owners, which includes 19 prospecting licenses over an area of 13,323 and 6 mining leases covering 5,180 acres for Marble, Chromite, Granite, Mica, Coal, Copper Ore, Iron Ore, Limestone, Quartz/Quartzite. Chromite and Copper ore. The production of Chromites during the years 2005-2010, has increased from 1,030 to 13,845 metric tons.²³⁷

²³³ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²³⁴ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²³⁵ Mastung - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²³⁶ Nushki - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²³⁷ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

4.6.9.7 Sherani District

Major minerals in Sherani include Coal, Oil, Gold, Limestone, Chromite, Marble, Iron, Graphite, Soft Stone, Kerosene Oil, Copper, Gypsum, Diamond and Building Stone.²³⁸

4.6.9.8 Zhob District

District Zhob has concessions for Coal, Chromite and Granite, whereas, occurrences of Copper, Calcite, Feldspar, Fluorite, Glass sand, Limestone, Ocher, Phosphate Rocks, Soapstone, Laterite and Manganese are reported. Recently, one exploration license has been granted for mineral exploration for a period of three years but no production is reported from the granted concessions.²³⁹

4.6.10 Industry and Handicrafts

4.6.10.1 Chagai District

In Chagai District, a large manufacturing unit comprising of four industries and two industries of dinner set and marble were closed due to lack of skilled/semi-skilled labor and financial constraints. Presently, only a flour mill is functional in the district which employs more than 10 workers. The district has some small enterprises with few workers employed.

In Chagai, there is one Carpet Training Center at Dalbandin with 18 youths enrolled and. The output of each trainee is 3 square feet per month and usually it takes 2 and half months by 2 to 3 people to weave a carpet size of 4x6 square feet. The purpose of training center is actually providing skilled and semi-skilled workers for the industrial units of the district and to promote self-employment among the people. In Chagai District, handicrafts like embroidery work on women's dresses, men's caps and on leather are very common. Women and girls, in particular, have got excellent skill and craft who mostly do the embroidery work at home for personal use and to pass their leisure time. However some poor women do embroidery for their livelihood and to assist their families by creating some additional income. The best of local Brahvi embroideries are "Mosan", MahiPusht, Sucking Kun and Puriwal. The prices of these embroideries vary according to the quality and design of the work. Potential for small enterprises such as Brahvi embroidery, mattresses, rough carpets, and rugs is still available in the district. Rough carpets (Ghali), Striped rugs (Kont), and coarse woolen cloth (Shall) and blankets are made for domestic use. Mats and baskets, made of Mazri and Pish mostly found in the nullah beds of Yakmach in Dalbandin, are also important handicrafts of the district.²⁴⁰

4.6.10.2 Killa Abdullah District

Killa Abdullah has 11 flour mills, one carpet center and three ice factories. Retail trade has become the major economic activity primarily because the contribution of manufacturing and industry is minimal. The Directorate of Small Industries is responsible for the carpet training, embroidery and tailoring centers. The purpose of

²³⁸ Baseline Study Balochistan under Multi Donor Trust Fund for Balochistan, KP & Fata, Oct 2016, The World Bank

²³⁹ Zhob - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²⁴⁰ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

training center is to provide skilled and semi-skilled workers for the industrial units of the district and to promote self-employment.²⁴¹ In Killa Abdullah District, traditional handicrafts like embroidery work on children and women's dresses, on caps, bed and pillow covers etc. are very common. Traditional handicrafts activities also include making sweaters from sheep's wool.²⁴² A training program for girls and women was initiated in the past with the objective to popularize the traditional handicrafts in this area. Women, engaged in embroidery bring their finished work to the local shopkeepers as the opportunity to sell their products outside the district is missing.²⁴³ There is also a Tailoring Cum Knitting Center in Killa Abdullah run by the Balochistan Technical Education & Vocational Training Authority (TEVTA).²⁴⁴

4.6.10.3 Killa Saifullah District

Data on industries in Killa Saifullah is not available. Women in the district are involved in making handicrafts, mostly embroidery and cloth work such as moti work, zartar, kandhari, karasta, om tak and pokhtak.²⁴⁵ There is one Handicrafts Development Center run by the Balochistan Technical Education & Vocational Training Authority (TEVTA) in the district.²⁴⁶

4.6.10.4 Mastung District

Data on industries in Mastung is not available. There are 3 Tailoring Cum Knitting Centers, 2 Handicrafts Development Centers, and 1 Carpet Center in Mastung run by the Balochistan Technical Education & Vocational Training Authority (TEVTA).²⁴⁷

4.6.10.5 Nushki District

Data on industries in Nushki is not available. Handicrafts are made by women in the district, mainly traditional Balochi embroidery and hafat ranga. Killims or flat tapestry woven rugs are also made in Nushki.²⁴⁸ There is a Carpet Center in Nushki run by the Balochistan Technical Education & Vocational Training Authority (TEVTA).²⁴⁹

4.6.10.6 Pishin District

In Pishin, the only large manufacturing unit is a flour mill. Small enterprises include Tobacco, R.C.C, ice, dairy farms and poultry farms which employ workers. Handicraft is a prominent feature of the district. The Social Welfare Department has also initiated a training program for girls and women to popularize the traditional handicrafts in the area, however the opportunity for these women to sell their work outside the district or to any expos is missing. In Pishin District, traditional handicrafts like embroidery work on dresses (kameez and shalwar) of children and women, on caps, on bed and pillow covers, etc. are very common. Women and girls do the embroidery work at home. It also

²⁴¹ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²⁴² Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²⁴³ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²⁴⁴ Btevt.a.gob.pk

²⁴⁵ Aik Hunar Aik Nagar; ahan.org.pk

²⁴⁶ Btevt.a.gob.pk

²⁴⁷ Btevt.a.gob.pk

²⁴⁸ Aik Hunar Aik Nagar; ahan.org.pk

²⁴⁹ Btevt.a.gob.pk

includes making sweaters from sheep's wool.²⁵⁰ Traditional embroidery includes kasheeda kari and moti ka kaam.²⁵¹ There is also 1 Tailoring Cum Knitting Center, 1 Handicrafts Development Center and 1 Carpet Center in Pishin run by the Balochistan Technical Education & Vocational Training Authority (TEVTA).²⁵²

4.6.10.7 Sherani District

4No significant industrial activities noticed in the district.²⁵³ Traditional handicrafts made by women include vibrant thread embroidery.²⁵⁴

4.6.10.8 Zhob District

Cross border trade with Afghanistan (mostly smuggled) through Qamar din Karez and other shingle routes is common.²⁵⁵ District Zhob, however, remains negligible and underdeveloped in terms of industrial and manufacturing sector. Handicrafts including traditional women's embroidery work are sometimes sold by women to assist their families by creating some additional income. Traditional embroidery includes the Zhobi tanka, zartar, moti ka kaam, pokh tuk and kasheeda kari.²⁵⁶ However, due to lack of home industry, access to market for women and the disinterest of the industrial department to this unique skill, middlemen get the major profit.²⁵⁷ There is a Carpet Center in Zhob run by the Balochistan Technical Education & Vocational Training Authority (TEVTA).²⁵⁸

4.6.11 Education and Literacy

Balochistan has the country's lowest net enrollment rates for all stages of schooling. Approximately half of the province's 10 to 18 year-olds who have attended school dropped out before completing primary school.²⁵⁹ The province has a total of 11,612 primary (govt 11,167, private 445), 1,488 middle (govt 1,233, private 255), 1,122 high (govt 836, private 286), 43 govt higher secondary²⁶⁰, 155 inter college (govt 62, private 93) and 35 degree colleges.²⁶¹ At each educational level, the number of institutions for boys outnumbers institutions for girls in the province.

The total enrollment for primary is 695,138 including 406,539 boys (58.5%) and 288,599 girls (41.5%)²⁶². Total number of schools in the project districts are 3,708 serving the total population of 2.97 million with only 8 degree colleges (**Table 4.36**). The total number of student enrollment from primary to college is 227,088 which is approximately 8 % of the total population in these districts (**Table 4.37**). Enrolment data shows decreasing trend in higher secondary education in the province, especially

²⁵⁰ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²⁵¹ Aik Hunar Aik Nagar; ahan.org.pk

²⁵² Btevtta.gob.pk

²⁵³ Sherani - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²⁵⁴ Aik Hunar Aik Nagar; ahan.org.pk

²⁵⁵ Zhob - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²⁵⁶ Aik Hunar Aik Nagar; ahan.org.pk

²⁵⁷ Zhob - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²⁵⁸ Btevtta.gob.pk

²⁵⁹ Balochistan Strategy - a road map to inclusive socio-economic development for the province, 2013, Pakistan Poverty Alleviation Fund (PPAF).

²⁶⁰ Source: <http://emis.gob.pk/website/SchoolSections.aspx#>. Assessed on April 09 2018.

²⁶¹ Source: <http://emis.gob.pk/website/CollegeSections.aspx>. Assessed on April 09 2018.

²⁶² Source: <http://emis.gob.pk/website/#>. Assessed on April 09 2018.

in female students. Almost 19% of boys and 16% of girls attended middle school, whereas only 0.02% of boys and 0.05% of girls attended high sec school. This shows a high dropout rate after the primary level in the province.²⁶³ (Table 4.38).

Table 4.36: Total Number of Schools in Balochistan and Project Districts²⁶⁴

District /Province	Primary	Middle	High	High Sec	Inter College	Degree College	Total
Chagai	215	30	17	2	4	0	268
Killa Abdullah	464	56	40	1	3	1	565
Killa Saifullah	313	47	30	1	6	1	398
Mastung	542	44	24	1	4	2	617
Nushki	172	45	32	4	3	1	257
Pishin	849	119	59	1	7	2	1,037
Sherani	164	16	6	0	1	0	187
Zhob	301	40	32	2	3	1	379
Total	3020	397	240	12	31	8	3,708
Balochistan	11,612	1,488	1,122	43	155	35	14,455

Table 4.37: Institution Wise Enrollment in Project Districts²⁶⁵

Province/District	Primary	Middle	High Sec	Inter College	Degree College	Total Enrollment
Chagai	14,645	2,544	1,418	279	0	18,886
Killa Abdullah	26,416	2,750	1,429	188	539	31,322
Killa Saifullah	23,691	3,350	1,743	297	242	29,323
Mastung	24,146	3,153	1,214	90	630	29,233
Nushki	16,086	4,181	1,868	173	311	22,619
Pishin	50,752	7,030	2,774	1,011	488	62,055
Sherani	5,862	295	107	68	0	6,332
Zhob	20,654	3,882	2,098	182	502	27,318
Total	182,252	27,185	12,651	2,288	2712	227,088

²⁶³ <http://emis.gob.pk/website/#>. Assessed on April 09 2018.

²⁶⁴ Source: <http://emis.gob.pk/>. Assessed on April 09 2018.

²⁶⁵ Source: <http://emis.gob.pk/website/#>. Assessed on April 09 2018.

Table 4.38: Gender Wise Enrollment in Project Districts

Province/District	Boys	Girls	Total Enrollment
Chagai	12,396	6,490	18,886
Killa Abdullah	23,926	7,396	31,322
Killa Saifullah	7,127	12,196	29,323
Mastung	18,155	11,078	29,233
Nushki	2,552	10,067	22,619
Pishin	39,712	22,343	62,055
Sherani	4,744	1,588	6,332
Zhob	16,709	10,609	27,318
Total	125,321	81,767	227,088
Balochistan	521,540	358,406	879,946

Literacy rate refers to the ability of the population aged 10 years and above to read and write a simple message. According to Pakistan Social and Living Measurement Survey (PSLM) 2014-15, the literacy rate of age 10+ in Balochistan Province was 61% among males and 25% among females, with an overall literacy rate of 44%.²⁶⁶ The literacy rate of the project districts is 41.5 % (Table 4.39).

Table 4.39: Literacy Rate of Project Districts

Province/ District	Literacy%	Male %	Female %
Chagai	30	48	9
Killa Abdullah	27	42	8
Killa Saifullah	40	76	6
Mastung	59	75	38
Nushki	46	67	21
Pishin	49	70	25
Sherani	38	68	6
Zhob	43	64	18
Balochistan	44	61	25

4.6.11.1 Chagai District

The Chagai district has a total of 215 primary (govt 213, private 2), 30 middle (govt 30), 17 high (govt 13, private 4), 2 govt higher secondary,²⁶⁷ and 4 colleges (govt 2, private

²⁶⁶ Pakistan Social and Living Measurement Survey (PSLM) 2014-15, Mar 2016, Pakistan Bureau of Statistics, Statistics Division, GoP

²⁶⁷ <http://emis.gob.pk/website/SchoolSections.aspx#>. Assessed on April 09 2018.

2) ^{268 269}. At each educational level, the number of institutions for boys outnumbers institutions for girls in the district (**Table 4.40 to 4.41**).

Table 4.40: Numbers of Government Educational Institute in Chagai by Gender

Primary			Middle			High			High Secondary			Inter College			Total		
Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
155	58	213	17	13	30	9	4	13	2	-	2	1	1	2	184	76	260

Table 4.41: Numbers of Private Educational Institutes in Chagai

Primary	Middle	High	Inter College	Total
2	-	4	2	8

According to Pakistan Social and Living Measurement Survey (PSLM) 2014-15, the literacy rate of age 10+ in Chagai District was 48% among males and 9% among females, with an overall literacy rate of 30%. ²⁷⁰ The total enrollment for primary classes are 14,645 including 9,232 boys and 5,413 girls, which means that 63% of primary school students were boys while 37% were girls. The total enrolment for middle classes (6-8) was 2,544 including 1,815 (71.3%) boys and 729 (28.7%) girls. The total enrolment for high school classes was 1,418 including 1,115 (78.6%) boys and 303 (21.4%) girls. In two govt inter colleges 279 students were enrolled comprising 234 (84%) students' boys and 45 (16%) girls (**Figure 4.13**). ²⁷¹

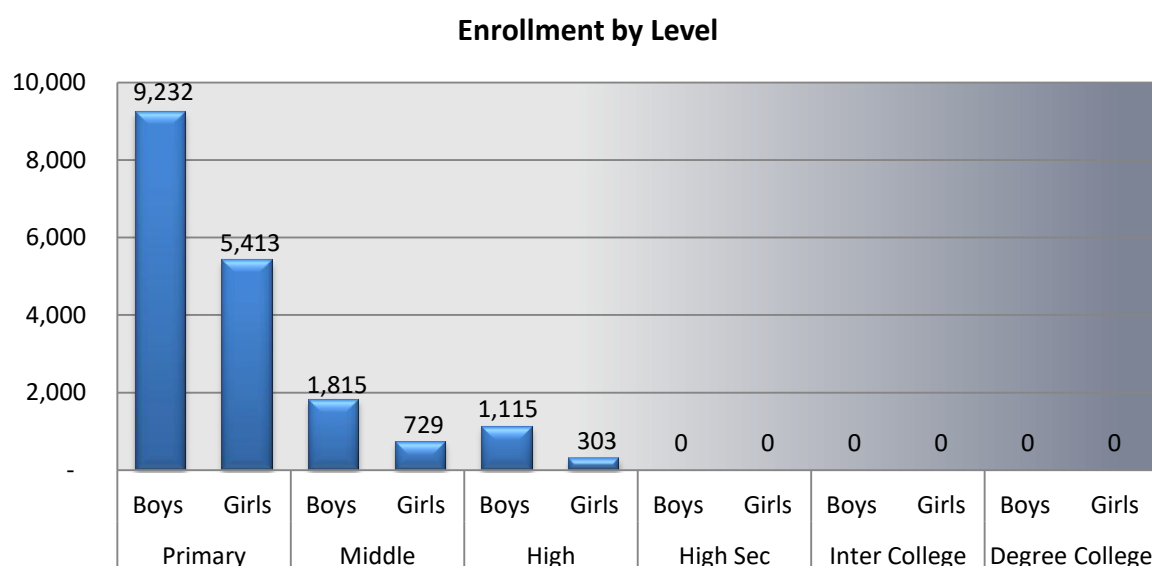


Figure 4.13: Institution and Gender Wise Enrolment in Chagai

²⁶⁸ <http://emis.gob.pk/website/CollegeSections.aspx>. Assessed on April 09 2018.

²⁶⁹ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²⁷⁰ Pakistan Social and Living Measurement Survey (PSLM) 2014-15, Mar 2016, Pakistan Bureau of Statistics, Statistics Division, GoP

²⁷¹ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

4.6.11.2 Killa Abdullah District

Killa Abdullah district has a total of 464 primary (govt 438, private 26), 56 middle (govt 38, private 18), 40 high (govt 34, private 6), 1 govt higher secondary, ²⁷² 3 govt inter colleges ²⁷³ and 01 govt degree college ²⁷⁴. At each educational level, the number of institutions for boys outnumbers institutions for girls in the district (Table 4.42 to 4.43).

Table 4.42: Numbers of Govt Educational Institute in Killa Abdullah by Gender

Primary			Middle			High			High Secondary			Inter College			Degree College			Total		
Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
379	59	438	25	13	38	27	7	34	1	-	1	2	1	3	1	-	1	435	80	515

Table 4.43: Numbers of Private Educational Institute in Killa Abdullah

Primary	Middle	High	Inter College	Total
26	18	6	-	50

According to Pakistan Social and Living Measurement Survey (PSLM) 2014-15, the literacy rate of age 10+ in Killa Abdullah District was 42% among males and 8% among females, with an overall literacy rate of 27%. The total enrollment for primary classes was 26,416 including 19,680 boys and 6,736 girls, which means that 74.5% of primary school students were boys while 25.5% were girls. The total enrolment for middle classes was 2,750 including 2,403 (87.4%) boys and 347 (12.6%) girls. The total enrolment for high school classes was 1,429 including 1,326 (92.8%) boys and 103 (7.2%) girls. A total of 188 students were enrolled in 3 inter colleges in which 100 (53.2%) students were boys and 88 (46.8%) students were girls. In Degree College, 539 students were enrolled, in which 417 (77.4%) students were boys and 122 (22.6%) students were girls (Figure 4.14). ²⁷⁵

²⁷² <http://emis.gob.pk/website/SchoolSections.aspx#>. Assessed on April 09 2018.

²⁷³ Source: <http://emis.gob.pk/website/CollegeSections.aspx>. Assessed on April 09 2018.

²⁷⁴ Source: <http://emis.gob.pk/website/Collages.aspx>. Assessed on April 09 2018.

²⁷⁵ Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

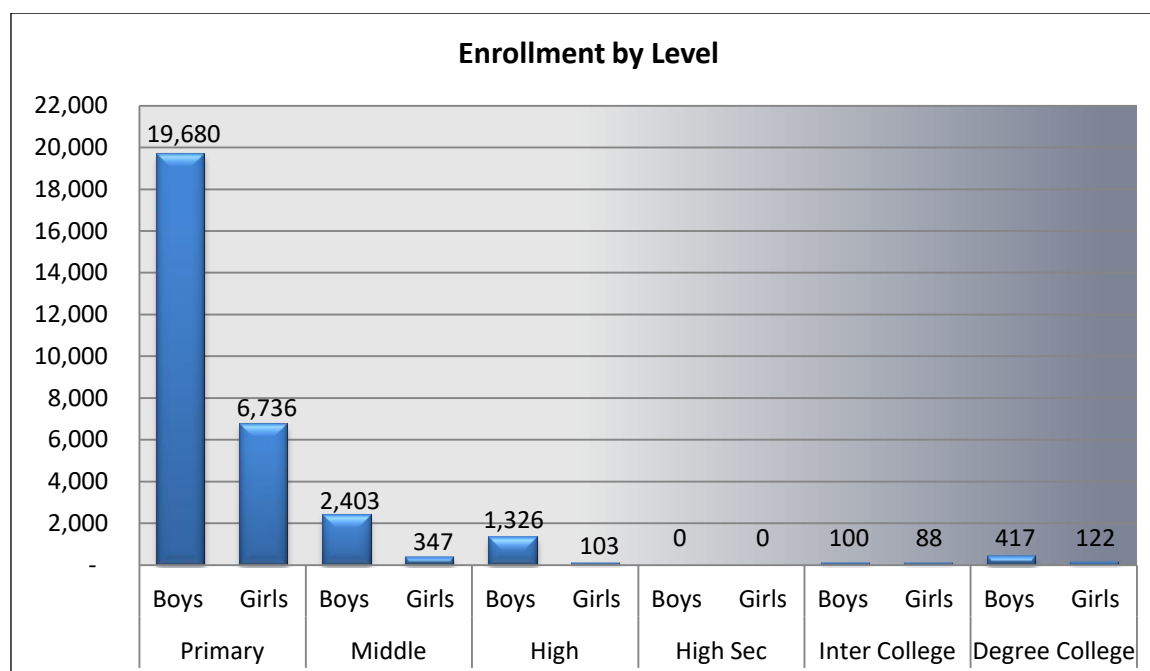


Figure 4.14: Institution and Gender Wise Enrolment in Killa Abdullah

4.6.11.3 Killa Saifullah District

Killa Saifullah district has a total of 542 primary (govt 541, private 1), 44 middle (govt 41, private 3), high 24 (govt 23, private 1), 01 govt higher secondary²⁷⁶, and 4 inter colleges (govt 1, private 3) and 02 govt degree college are providing education in the district.²⁷⁷ At each educational level, the number of institutions for boys outnumbers institutions for girls in the district (**Table 4.44 to 4.45**).

Table 4.44: Numbers of Govt Educational Institute in Killa Saifullah by Gender

Primary			Middle			High			High Secondary			Inter College			Degree College			Total		
Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
418	123	541	26	15	41	17	6	23	1	-	1	-	1	1	2	-	2	464	145	609

Table 4.45: Numbers of Private Educational Institute in Killa Saifullah

Primary	Middle	High	Inter College	Total
1	3	1	3	5

According to Pakistan Social and Living Measurement Survey (PSLM) 2014-15, the literacy rate of age 10+ in Killa Saifullah District was 76% among males and 6% among females, with an overall literacy rate of 40%. The total enrollment for primary classes was 24,146 including 14,982 boys and 9164 girls, which means that 62% of primary school students were boys while 38% were girls. The total enrolment for middle classes

²⁷⁶ <http://emis.gob.pk/website/SchoolSections.aspx#>. Assessed on April 09 2018.

²⁷⁷ <http://emis.gob.pk/website/CollegeSections.aspx>. Assessed on April 09 2018.

was 3,153 including 1,861 (59%) boys and 1,292 (41%) girls. The total enrolment for high school classes was 1,214 including 874 (72%) boys and 340 (28%) girls.²⁷⁸ A total of 90 girls were enrolled in one inter colleges for girls. 630 students were enrolled in the Degree College of which 438 (69.5%) students were boys and 192 (30.5%) students were girls (**Figure 4.15**).²⁷⁹

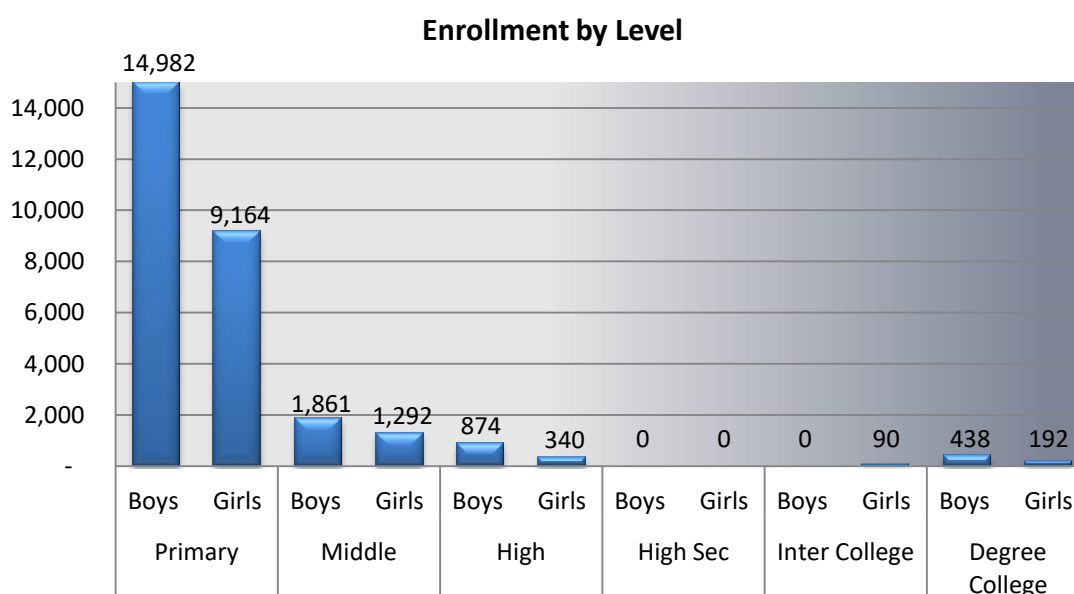


Figure 4.15: Institution and Gender Wise Enrolment in Killa Saifullah

4.6.11.4 Mastung District

Mastung district has a total of 313 primary (govt 303, private 10), 47 middle (govt 46, private 1), 30 high (govt 28, private 02), 1 govt higher secondary, 6 inter colleges (govt 2, private 4) and 01 govt degree college (**Table 4.46 to 4.47**).²⁸⁰

Table 4.46: Numbers of Government Educational Institute in Mastung

Primary			Middle			High			High Secondary			Inter College			Degree College			Total		
Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
206	97	303	24	22	46	13	15	28	1	-	1	1	1	2	1	-	1	246	135	381

Table 4.47: Numbers of Private Educational Institute in Mastung

Primary	Middle	High	Inter College	Total
10	1	2	4	17

²⁷⁸ Source: <http://emis.gob.pk/website/#>. Assessed on April 09 2018.

²⁷⁹ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²⁸⁰ <http://emis.gob.pk/website/CollegeSections.aspx>. Assessed on April 09 2018.

According to Pakistan Social and Living Measurement Survey (PSLM) 2014-15, the literacy rate of age 10+ in Mastung District was 75% among males and 38% among females, with an overall literacy rate of 59%.²⁸¹ The total enrollment for primary classes was 23,691 including 13,559 boys and 10,092 girls, which means that 57.4% of primary school students were boys while 42.6% were girls. The total enrolment for middle classes was 3,350 including 2,098 (62.6%) boys and 1,252 (37.4%) girls. The total enrolment for high school classes was 1,743 including 1,114 (63.9%) boys and 629 (36.1%) girls.²⁸² A total of 297 students were enrolled in 2 govt Inter Colleges in which 173 (58.2%) students were boys and 124 (41.8%) students were girls. In Degree College, 242 students were enrolled, of which 143 (59.1%) students were boys and 99 (40.9%) students were girls (**Figure 4.16**).²⁸³

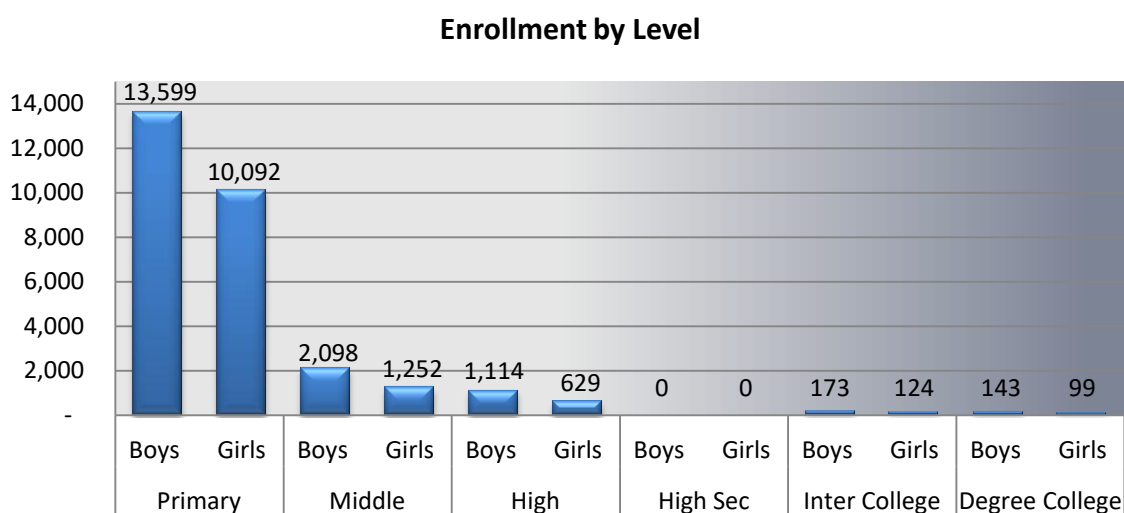


Figure 4.16: Institution and Gender Wise Enrolment in Mastung

4.6.11.5 Nushki District

The Nushki district has a total of 172 primary (govt 166, private 6), 45 middle (govt 40, private 5), high 32 (govt 28, private 4), 4 govt higher secondary,²⁸⁴ and 3 inter college (govt 1, private 2) and 1 govt degree college is providing education in the district (**Table 4.48 to 4.49**).²⁸⁵

Table 4.48: Numbers of Government Educational Institute in Nushki

Primary			Middle			High			High Secondary			Inter College			Degree College			Total		
Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total

²⁸¹ Pakistan Social and Living Measurement Survey (PSLM) 2014-15, Mar 2016, Pakistan Bureau of Statistics, Statistics Division, GoP

²⁸² <http://emis.gob.pk/website/#>. Assessed on April 09 2018.

²⁸³ Mastung - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²⁸⁴ Source: <http://emis.gob.pk/website/SchoolSections.aspx#>. Assessed on April 09 2018.

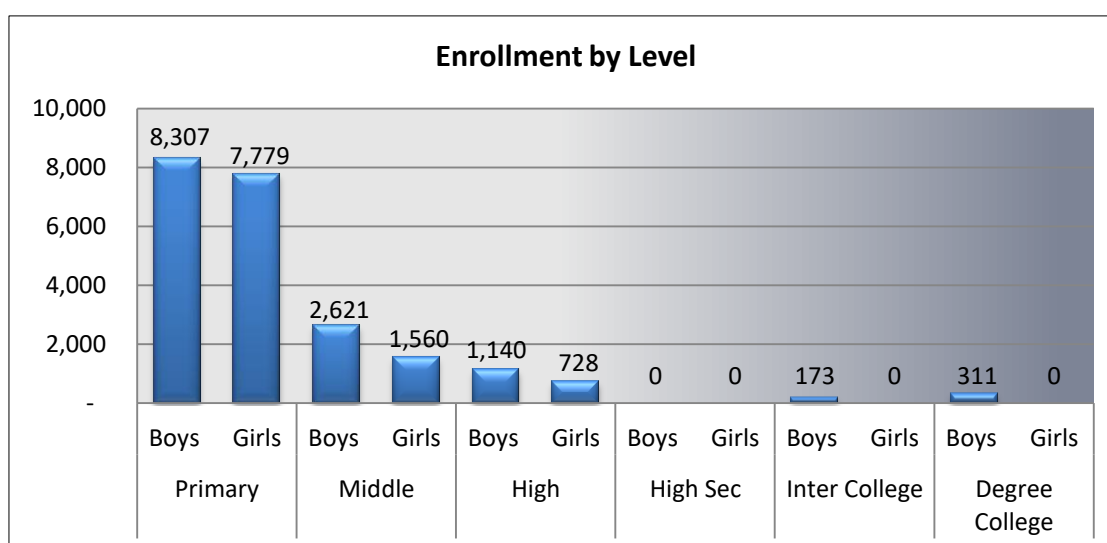
²⁸⁵ <http://emis.gob.pk/website/CollegeSections.aspx>. Assessed on April 09 2018.

112	54	166	19	21	40	17	11	28	2	2	4	-	1	1	1	-	1	151	89	240
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Table 4.49: Numbers of Private Educational Institute in Nushki

Primary	Middle	High	Inter College	Total
6	5	4	2	16

According to Pakistan Social and Living Measurement Survey (PSLM) 2014-15, the literacy rate of age 10+ in Nushki District was 67% among males and 21% among females, with an overall literacy rate of 46%.²⁸⁶ The total enrollment for primary classes was 16,086 including 8,307 (51.6%) boys and 7,779 (48.4) girls. The total enrolment for middle classes was 4,181 including 2,621 (62.7%) boys and 1,560 (37.3%) girls. The total enrolment for high school classes was 1,868 including 1,140 (61%) boys and 728 (39%) girls.²⁸⁷ 311 male students were enrolled in the Degree College (Figure 4.17).²⁸⁸

**Figure 4.17: Institution and Gender Wise Enrolment in Nushki**

4.6.11.6 Pishin District

The Pishin district has a total of 849 primary (govt 827, private 22), 119 middle (govt 109, private 10), high 59 (govt 49, private 10), 1 govt higher secondary,²⁸⁹ and 7 inter college (govt 5, private 2) and 2 govt degree college (Table 4.50 to 4.51).²⁹⁰

Table 4.50: Numbers of Government Educational Institute in Pishin

Primary			Middle			High			High Secondary			Inter College			Degree College			Total		
Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total

²⁸⁶ Pakistan Social and Living Measurement Survey (PSLM) 2014-15, Mar 2016, Pakistan Bureau of Statistics, Statistics Division, GoP

²⁸⁷ <http://emis.gob.pk/website/#>. Assessed on April 09 2018.

²⁸⁸ Nushki - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²⁸⁹ <http://emis.gob.pk/website/SchoolSections.aspx#>. Assessed on April 09 2018.

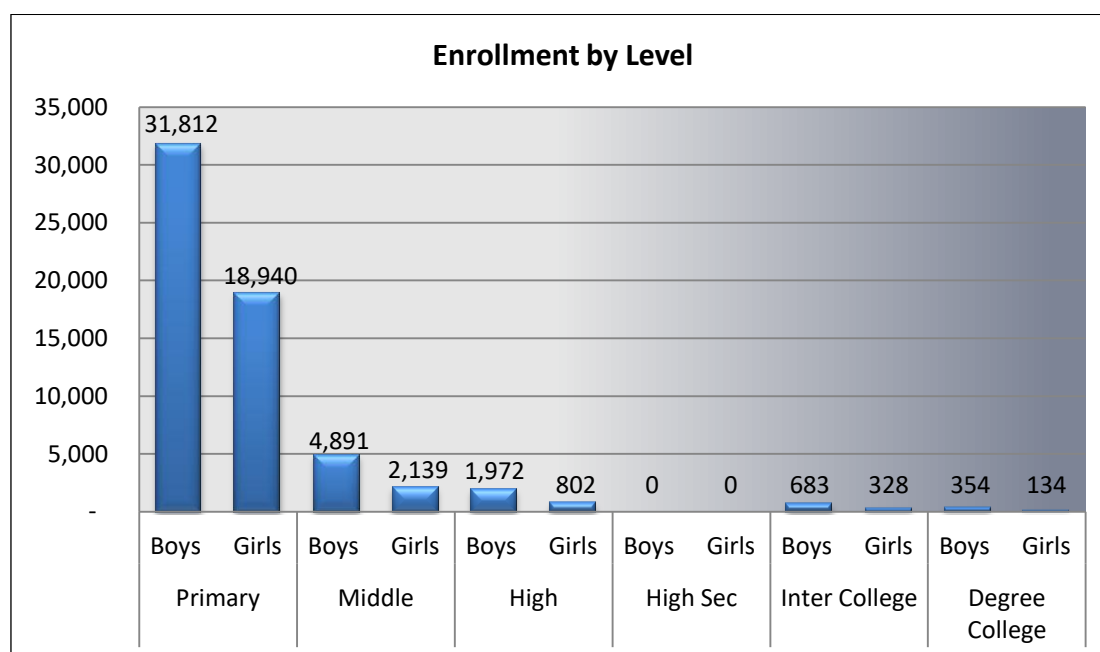
²⁹⁰ <http://emis.gob.pk/website/CollegeSections.aspx>. Assessed on April 09 2018.

623	204	827	56	53	109	37	12	49	-	1	1	3	2	5	2	-	2	721	272	993
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Table 4.51: Numbers of Private Educational Institute in Pishin

Primary	Middle	High	Inter College	Total
22	10	10	2	44

According to Pakistan Social and Living Measurement Survey (PSLM) 2014-15, the literacy rate of age 10+ in Pishin District was 70% among males and 25% among females, with an overall literacy rate of 49%.²⁹¹ The total enrollment for primary classes was 50,752 including 31,812 (62.7%) boys and 18,940 (37.3) girls. The total enrolment for middle classes was 7,030 including 4,891 (69.6%) boys and 2,139 (30.4%) girls. The total enrolment for high school classes was 2,774 including 1,972 (71.1%) boys and 802 (28.9%) girls.²⁹² In 5 inter colleges, 1,011 students are enrolled, out of which, 683 (67.6%) students were boys and 328 (32.4%) students were girls. In Degree College, 488 students were enrolled, of which, 354 (72.5%) students were boys and 134 (27.5%) students were girls (**Figure 4.18**).²⁹³

**Figure 4.18: Institution and Gender Wise Enrolment in Pishin**

4.6.11.7 Sherani District

²⁹¹ Pakistan Social and Living Measurement Survey (PSLM) 2014-15, Mar 2016, Pakistan Bureau of Statistics, Statistics Division, GoP

²⁹²: <http://emis.gob.pk/website/#>. Assessed on April 09 2018.

²⁹³ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

The Sherani district has a total of 164 govt primary, 16 middle (govt 14, private 2), govt high 6, and 1 govt inter college. There is no degree college in the district (Table 5.52 to 4.53).²⁹⁴

Table 4.52: Numbers of Government Educational Institute in Sherani²⁹⁵

Primary			Middle			High			High Secondary			Inter College			Degree College			Total		
Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
148	16	164	12	2	14	5	1	6	-	-	-	1	-	1	-	-	-	166	19	185

Table 4.53: Numbers of Private Educational Institute in Sherani

Primary	Middle	High	Inter College	Total
-	2	-	-	2

According to Pakistan Social and Living Measurement Survey (PSLM) 2014-15, the literacy rate of age 10+ in Sherani District was 68% among males and 6% among females, with an overall literacy rate of 38%.²⁹⁶ The total enrollment for primary classes was 5,862 including 4,302 (73.4%) boys and 1,560 (26.6%) girls. The total enrolment for middle classes was 295 including 275 (93.2%) boys and 20 (6.8%) girls. The total enrolment for high school classes was 107 including 99 (92.5%) boys and 8 (7.5%) girls.²⁹⁷ In 1 inter college, 68 male students were enrolled (Figure 4.19).

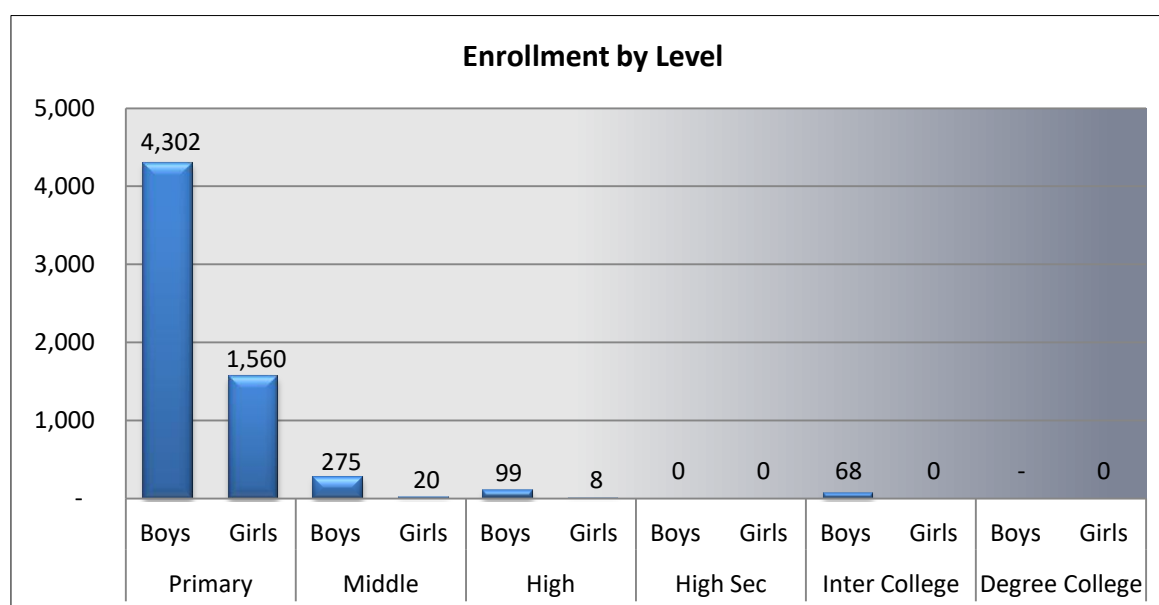


Figure 4.19: Institution and Gender Wise Enrollment in Sherani

²⁹⁴ <http://emis.gob.pk/website/CollegeSections.aspx>. Assessed on April 09 2018.

²⁹⁵ Sherani - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

²⁹⁶ Source: Pakistan Social and Living Measurement Survey (PSLM) 2014-15, Mar 2016, Pakistan Bureau of Statistics, Statistics Division, GoP

²⁹⁷ Source: <http://emis.gob.pk/website/#>. Assessed on April 09 2018.

4.6.11.8 Zhob District

Zhob district has a total of 301 primary (govt 296, primary 5), 40 middle (govt 29, private 11), 22 high (govt 22, private 10), 2 govt higher secondary, ²⁹⁸ and 3 inter colleges (govt 1, private 2) and 1 govt degree college is providing education in the district (Table 4.54 to 4.55).²⁹⁹

Table 4.54: Numbers of Government Educational Institute in Zhob

Primary			Middle			High			High Sec			Inter College			Degree College			Total		
Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
242	54	296	20	9	29	17	5	22	1	1	2	-	1	1	1	-	1	281	70	351

Table 4.55: Numbers of Private Educational Institute in Zhob

Primary	Middle	High	Inter College	Total
5	11	10	2	28

According to Pakistan Social and Living Measurement Survey (PSLM) 2014-15, the literacy rate of age 10+ in Zhob District was 64% among males and 18% among females, with an overall literacy rate of 43%. ³⁰⁰ The total enrollment for primary classes was 20,654 including 12,562 (60.8%) boys and 8,092 (39.2%) girls. The total enrolment for middle classes was 3,882 including 2,419 (62.3%) boys and 1,463 (37.7%) girls. The total enrolment for high school classes was 2,098 including 1,267 (60.4%) boys and 831 (39.6%) girls. ³⁰¹ In 1 inter college, 182 female students were enrolled, whereas in the Degree College, 502 students were enrolled, out of which, 461 (91.8%) students were boys and 41 (8.2%) students were girls³⁰² (Figure 4.20) .

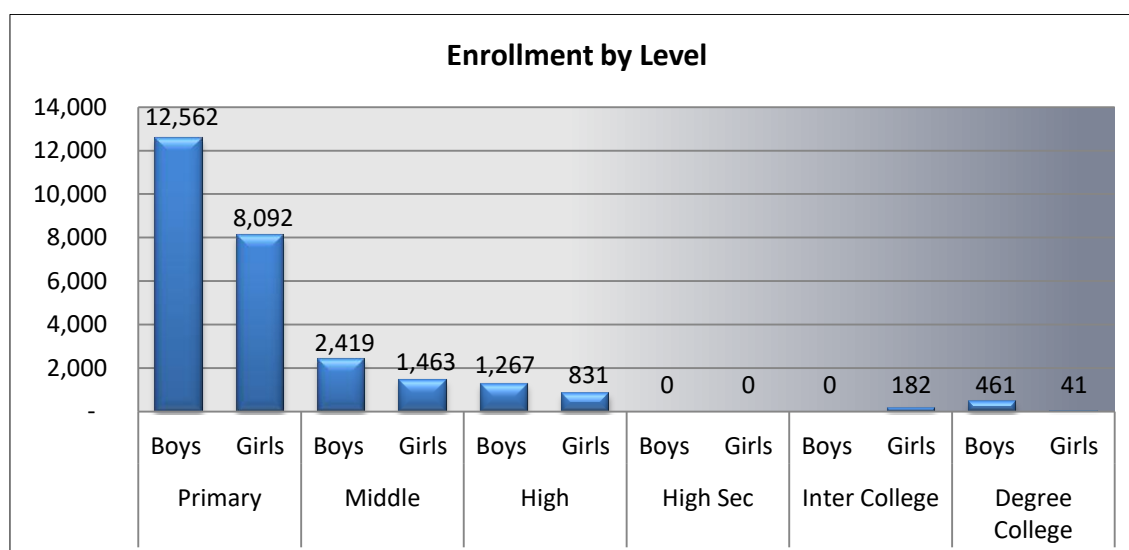


Figure 4.20: Institution and Gender Wise Enrolment in Zhob

²⁹⁸ <http://emis.gob.pk/website/SchoolSections.aspx#>. Assessed on April 09 2018.

²⁹⁹ <http://emis.gob.pk/website/CollegeSections.aspx>. Assessed on April 09 2018.

³⁰⁰ Pakistan Social and Living Measurement Survey (PSLM) 2014-15, Mar 2016, Pakistan Bureau of Statistics, Statistics Division, GoP

³⁰¹ <http://emis.gob.pk/website/#>. Assessed on April 09 2018.

³⁰² Zhob - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

4.6.12 Health

In Balochistan, there are a total of 129 hospitals (govt 49, private 80), 102 Rural Health Centers (RHCs), 642 Basic Health Units (BHUs), 559 dispensaries (govt 540, private 19), 91 Maternal Child Health Care Centers (MCHCs) and 23 TB clinics providing health services to the vast and scattered population of the province. There are 7,495 beds in these facilities out of which 4,146 are situated in govt hospitals, 2,305 in 80 private hospitals and 1,044 in RHCs. One mobile dispensary is also functioning in the district to cover remote areas (**Table 4.56**)³⁰³ The project districts have 10 government hospitals, 11 private hospitals, 39 RHCs, 150 BHUs, 60 TB clinics and 92 dispensaries serving a population of 2.97 million.

Table 4.56: Health Facilities in Project Districts

Province/ District	Govt Hospital		Private		RHC		Dispensaries		BHU	MCHC	TB
	No.	Bed	No.	Bed	No.	Bed	Govt	Private	No.	No.	No.
Chagai	1	70	0	0	4	66	12	2	12	4	0
Killa Abdullah	1	54	2	10	6	60	0	9	39	2	1
Killa Saifullah	2	70	5	35	5	30	15	0	16	3	1
Mastung	2	70	0	0	6	30	6	0	13	2	1
Nushki	1	50	1	12	2	0	15	0	10	3	1
Pishin	2	55	2	10	10	50	10	0	32	4	1
Sherani	0	0	0	0	2	32	7	0	5	1	0
Zhob	1	104	1	10	4	34	16	0	23	2	1
Total	10	473	11	77	39	302	81	11	150	21	6
Balochistan	49	4,146	80	2,305	102	1,044	540	19	642	91	23

4.6.12.1 Chagai District

Chagai district has a high level of mortality and morbidity due to high malnutrition, poor living conditions, inadequate healthcare and high fertility. Vulnerable groups including women and children are particularly at risk. For every 1,000 live births, 59 babies do not survive up to their first birthday and another 71 die before reaching the age of 5 years. Women experiencing a high fertility rate (TFR: 4.1) are left to rely on informal support due to poor access to skilled providers for antenatal check-ups and delivery assistance. The lack of an ambulance service forces the population to make their own arrangements in case of medical and obstetric emergencies.³⁰⁴ The health facility infrastructure in the district includes 1 govt Hospital, 4 Rural Health Centers (RHCs), 12 Basic Health Units (BHUs), 14 dispensaries (govt 12, private 2) and 4 Maternal & Child Health Centers (MCHCs). There are 136 beds out of which 70 are situated in govt hospital and 66 are in RHCs.³⁰⁵ Moreover, one Railway and one Saindak Project dispensary each are also functioning in the district (**Table 4.56**).³⁰⁶

4.6.12.2 Killa Abdullah District

³⁰³ Development Statistics of Balochistan 2014-15, 2016, Planning & Development Department, Bureau of Statistics, GoP.

³⁰⁴ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁰⁵ Development Statistics of Balochistan 2014-15, 2016, Planning & Development Department, Bureau of Statistics, GoP.

³⁰⁶ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

Killa Abdullah has a high level of mortality and morbidity due to high malnutrition, poor living conditions, inadequate healthcare and high fertility. Vulnerable groups including women and children are particularly at risk. For every 1,000 live births, 59 babies do not survive up to their first birthday and another 71 die before reaching the age of 5 years. Women experiencing a high fertility rate (TFR: 3.5) are left to rely on informal support due to poor access to skilled providers for antenatal check-ups and delivery assistance.³⁰⁷ The health infrastructure in the district includes 3 Hospitals (govt 1, private 2), 6 Rural Health Centers (RHCs), 39 Basic Health Units (BHUs), 9 private dispensaries, 2 Maternal & Child Health Centers (MCHCs) and 1 TB Clinic. There are 124 beds out of which 54 are situated in govt hospital, 10 in two private hospital and 60 in RHCs.³⁰⁸ One mobile dispensary is also functioning in the district to service remote areas (Table 4.56).³⁰⁹

4.6.12.3 Killa Saifullah District

Killa Saifullah has a high level of mortality and morbidity due to high malnutrition, poor living conditions, inadequate healthcare and high fertility. Vulnerable groups including women and children are particularly at risk. For every 1,000 live births, 87 babies do not survive up to their first birthday and another 110 die before reaching the age of 5 years. Women experiencing a high fertility rate (TFR: 4.7) are left to rely on informal support due to poor access to skilled providers for antenatal check-ups and delivery assistance.³¹⁰ The health infrastructure in the district includes 7 Hospitals (govt 2, private 5), 5 Rural Health Centers (RHCs), 16 Basic Health Units (BHUs), 15 govt dispensaries, 3 Maternal & Child Health Centers (MCHCs) and 1 TB Clinic. There are 135 beds out of which 70 are situated in govt hospital, 35 in five private hospitals and 30 in RHCs.³¹¹ One mobile dispensary is also functioning in the district to cover remote areas (Table 5.56).³¹²

4.6.12.4 Mastung District

In Mastung, for every 1,000 live births, 88 infants do not survive to their first year and another 112 die before the age of 5 years. Women experiencing a high fertility rate (TFR: 5.3) are left to rely on informal support due to poor access to skilled providers for antenatal check-ups and delivery assistance.³¹³ The health infrastructure in the district includes 2 govt hospitals, 6 Rural Health Centers (RHCs), 13 Basic Health Units (BHUs), 6 govt dispensaries, 2 Maternal & Child Health Centers (MCHCs) and 1 TB Clinic. There are 100 beds out of which 70 are situated in govt hospitals and 30 in RHCs.³¹⁴ One mobile dispensary is also functioning in the district to cover remote areas (Table 4.56).³¹⁵

4.6.12.5 Nushki District

³⁰⁷ Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁰⁸ Development Statistics of Balochistan 2014-15, 2016, Planning & Development Department, Bureau of Statistics, GoP.

³⁰⁹ Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³¹⁰ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³¹¹ Development Statistics of Balochistan 2014-15, 2016, Planning & Development Department, Bureau of Statistics, GoP.

³¹² Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³¹³ Mastung - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³¹⁴ Development Statistics of Balochistan 2014-15, 2016, Planning & Development Department, Bureau of Statistics, GoP.

³¹⁵ Mastung - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

In Nushki, for every 1,000 live births, 59 babies do not survive up to their first birthday and another 71 die before reaching the age of 5 years. The district, has a lower fertility than other project districts (TFR: 2.7), however, women are left to rely on informal support due to poor access to skilled providers for antenatal check-ups and delivery assistance.³¹⁶ The health infrastructure in the district includes 2 Hospitals (govt 1, private 1), 2 Rural Health Centers (RHCs), 10 Basic Health Units (BHUs), 15 govt dispensaries, 3 Maternal & Child Health Centers (MCHCs) and 1 TB Clinic. There are 62 beds out of which 50 are situated in govt hospitals, and 12 in one private hospital (**Table 4.56**).³¹⁷

4.6.12.6 Pishin District

In Pishin, for every 1,000 live births, 59 babies do not survive up to their first birthday and another 71 die before reaching the age of 5 years. Women experiencing a high fertility rate (TFR: 3.6) are left to rely on informal support due to poor access to skilled providers for antenatal check-ups and delivery assistance. There is no ambulance facility and people have to make their own arrangements in case of medical and obstetric emergencies.³¹⁸ The health infrastructure in the district includes 4 hospitals (govt 2, private 2), 10 Rural Health Centers (RHCs), 32 Basic Health Units (BHUs), 11 dispensaries (govt 10, private 1), 4 Maternal & Child Health Centers (MCHCs) and 1 TB Clinic. There are 115 beds out of which 55 are situated in govt hospitals, 10 in two private hospitals and 50 in RHCs (**Table 4.56**).³¹⁹

4.6.12.7 Sherani District

Population of the district is generally poor and due to high malnutrition, poor living conditions, inadequate healthcare and high fertility, people experience high levels of mortality and morbidity. Women and children are mostly at risk, as for every 1,000 live births, 87 babies do not survive up to their first birthday and another 110 die before reaching the age of 5 years. Women have poor access to skilled providers for antenatal check-ups and delivery assistance and are left to deliver at home by local untrained dais, or by neighbors and relatives.³²⁰ The health infrastructure in the district includes 2 Rural Health Centers (RHCs), 5 Basic Health Units (BHUs), 7 govt dispensaries and, 1 Maternal & Child Health Centers (MCHCs). The district does not have the facility of hospital. There are 32 beds available in RHCs (**Table 4.56**).³²¹

4.6.12.8 Zhob District

In Zhob, for every 1,000 live births, 87 babies do not survive up to their first birthday and another 110 die before reaching the age of 5 years. Similarly, women, who experience a high fertility rate (TFR: 3.9) have poor access to skilled providers for antenatal check-ups and delivery assistance. There is no ambulance facility and people have to make their own arrangements in case of medical and obstetric emergencies.³²²

³¹⁶ Nushki - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³¹⁷ Development Statistics of Balochistan 2014-15, 2016, Planning & Development Department, Bureau of Statistics, GoP.

³¹⁸ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³¹⁹ Development Statistics of Balochistan 2014-15, 2016, Planning & Development Department, Bureau of Statistics, GoP.

³²⁰ Sherani - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³²¹ Development Statistics of Balochistan 2014-15, 2016, Planning & Development Department, Bureau of Statistics, GoP.

³²² Zhob - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

The health infrastructure in the district includes 2 hospitals (1 govt, 1 private), 4 Rural Health Centers (RHCs), 23 Basic Health Units (BHUs), 16 govt dispensaries, 2 Maternal & Child Health Centers (MCHCs) and 1 TB Clinic. There are 148 beds out of which 104 are situated in govt hospitals, 10 in one private hospital and 34 in RHCs.³²³ One mobile dispensary is also functioning in the district to cover remote areas (**Table 4.56**).³²⁴

4.6.13 Roads and Transport

Road networks and connectivity in Balochistan are the poorest in the country.³²⁵ The total length of roads in Balochistan is 23, 539 kms including 3,839 kms of black topped road (metaled roads). The total length of highways in Balochistan is 2,371km (36%) of all highways in Pakistan (6,600km).³²⁶ Several sections of existing roads and highways are too narrow with respect to the traffic, and in poor condition, causing high vehicle operating cost and compromising road safety.³²⁷ (**Table 4.57**)

Table 4.57: Road Type and Length

Province/District	Black Topped Road	Single Road	Total Length
Balochistan Province	3,839	19,700	23,539
Chagai District	436	1,161	1,597
Killa Abdullah District	453	1,065	1,518
Killa Saifullah District	463	947	1,410
Mastung District	532	307	839
Nushki District	230	462	692
Pishin District	605	648	1,253
Sherani District	192	316	508
Zhob district	341	916	1,257
Total	3,252	5,822	9,074

4.6.13.1 Chagai District

The total length of roads in Chagai is 1,597 kms including 436 kms of black topped road (metaled roads). The major portion of existing roads comprises shingle roads (**Table 4.57**). Chagai has an active transportation linkage with other parts of the country including Kech, Karachi, Quetta, Gwadar, and Khuzdar. The district has 382 kms of railway line with seven railway stations and one airport at Dalbandin.³²⁸

4.6.13.2 Killa Abdullah District

The total length of roads in Killa Abdullah is 1,518 km, out of which, 453 km are black topped roads (**Table 4.57**). The main highway in the district is the Quetta Chaman

³²³ Development Statistics of Balochistan 2014-15, 2016, Planning & Development Department, Bureau of Statistics, GoP.

³²⁴ Zhob - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³²⁵ <http://pdma.gob.pk/?p=39>. Assessed on April 12 2018.

³²⁶ <http://siteresources.worldbank.org/PAKISTANEXTN/Resources/Pakistan-Development-Forum/Balochistan.pdf>. Assessed on April 12 2018.

³²⁷ <http://pdma.gob.pk/?p=39>. Assessed on April 12 2018.

³²⁸ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

highway. The district has a functioning bus service linking majority of the towns and villages. The total length of the railway line which runs through District Killa Abdullah is 73 kms, with four railway stations including Killa Abdullah, Shella, Bagh, and Chaman. The largest railway tunnel (3.9188 km) of the South Asia “Khujak” is also located in the district.³²⁹

4.6.13.3 Killa Saifullah District

The total length of roads in Killa Saifullah is 1,410 km, out of which, 463 km are black topped roads (**Table 4.57**). A National Highway N-50 (195 km) connects Quetta with Dera Ismail Khan, Muslim Bagh, Killa Saifullah and Zhob via Kan Mehterzathe. Another National Highway (N-70) connects Killa Saifullah with Dera Ghazi Khan via Loralai. Shingle roads provide intra-district access to various areas. A railway line of 295 km in length exists between Bostan and Zhob but is not functional.³³⁰

4.6.13.4 Mastung District

Total length of roads in Mastung is 839 km, out of which, 532 km are black topped roads (**Table 4.50**). Three national highways cross through Mastung. The main means of public transport in the district are vans and buses linking main towns and villages. The total length of the railway line passing through the district is 104 km. There are two tracks. The first one, from Quetta to Sibi, is about 24 km and has three railway stations in Mastung, Spezand, and Karidoo. The second track, built in 1905, runs between Quetta to Taftan. This track is 80 km long and has stations in Mastung, Wali Khan, Kanak, Sheikh Wasil and Kardigap. There is no airport in District Mastung.³³¹

4.6.13.5 Nushki District

Total length of roads in Nushki District is 692 km, out of which, 230 km are black topped roads (**Table 4.50**). The RCD highway passes through Nushki, as well as a railway line.³³²

4.6.13.6 Pishin District

The total length of roads in Pishin is 1,253 km, out of which, 605 km are black topped road and 648 km of shingle road (**Table 4.57**). District Pishin has a network of inter district and intra district roads. Bus service in District Pishin links main towns and villages. 25 buses go from Quetta to Pishin and from Pishin to Quetta daily. The total length of the railway track through the district is 42 km. There are 3 railway stations including Bostan, Yaro and Saranan. There is a daily train service from Quetta to Chaman.³³³

4.6.13.7 Sherani District

³²⁹ Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³³⁰ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³³¹ Mastung - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³³² Nushki - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³³³ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

Sherani has 508 kms of roads, of which 316 kms are shingle roads (**Table 4.50**). Sherani is not connected with railway line and the nearest airport is in the neighboring district of Zhob.³³⁴

4.6.13.8 Zhob District

The total length of roads in Zhob is 1,257 km, out of which, 341 km are black topped roads (**Table 4.57**).³³⁵ The main road which links Quetta with Killa Saifullah and Zhob is a National Highway. The district has an airport in Zhob. The train service from Quetta to Zhob was started in 1916.³³⁶

4.6.14 Water Supply and Sanitation

Overall, 74% of the households in Balochistan had an improved source of drinking water and 61% were using improved sanitary means of excreta disposal in 2010.³³⁷ The sources of drinking water are shown in **Figure 4.21** but very strongly by region.³³⁸

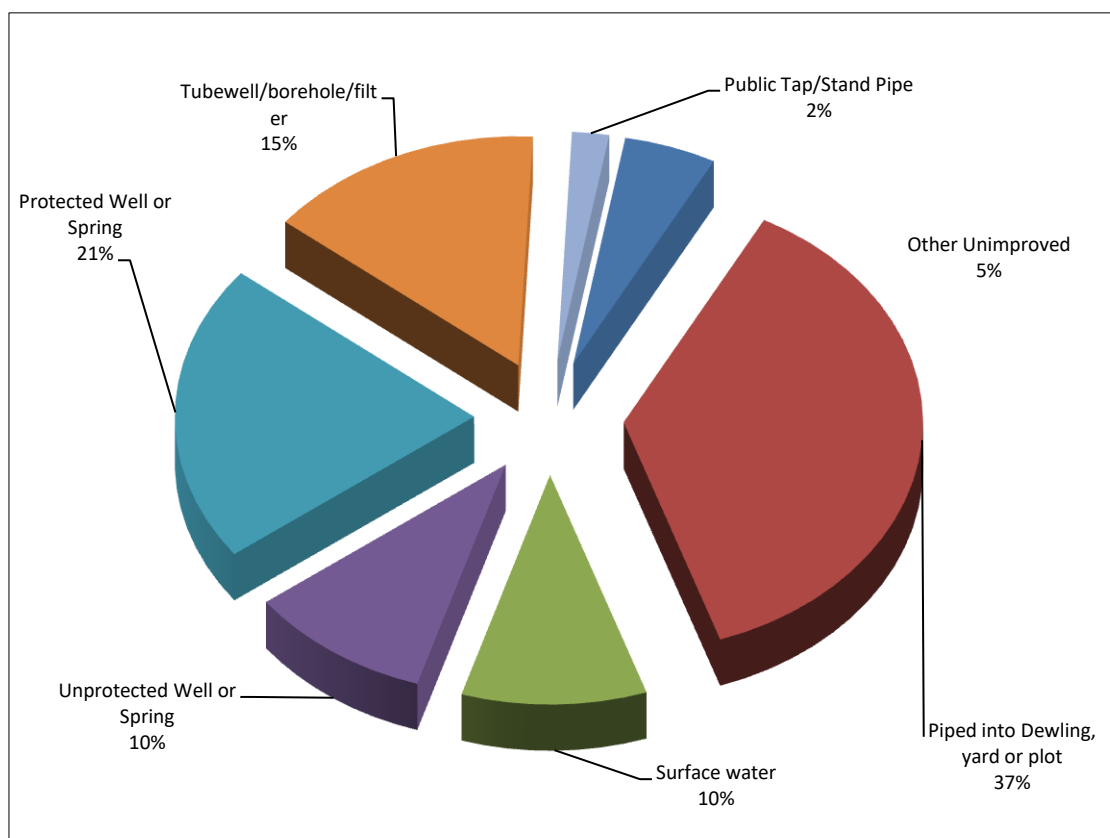


Figure 4.21: Percentage distribution of household members by source of drinking water, Balochistan Province, Pakistan, 2010³³⁹

4.6.14.1 Chagai District

³³⁴ Sherani - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³³⁵ Sherani - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³³⁶ Sherani - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³³⁷ Balochistan – Multiple Indicator Cluster Survey 2010, Nov 2011, Planning & Development Department, GoB, UNICEF.

³³⁸ Balochistan – Multiple Indicator Cluster Survey 2010, Nov 2011, Planning & Development Department, GoB, UNICEF.

³³⁹ Balochistan – Multiple Indicator Cluster Survey 2010, Nov 2011, Planning & Development Department, GoB, UNICEF.

Water Supply

About 67% population has access to one or more improved water sources, of which, tube well or borehole (49%) constitutes the major source followed by piped water (17%) and protected dug well (8%). Other minor improved sources include: public stand pipe (5%), rain water collection (3%) and filter plants (0.3%). The major unimproved sources are unprotected dug well (14%) and approximately (4%) of unimproved water source belonged to other categories as shown in **Figure 4.22**. About 33% households have to travel long distances to fetch water, which is usually the responsibility of women or children of the household.³⁴⁰

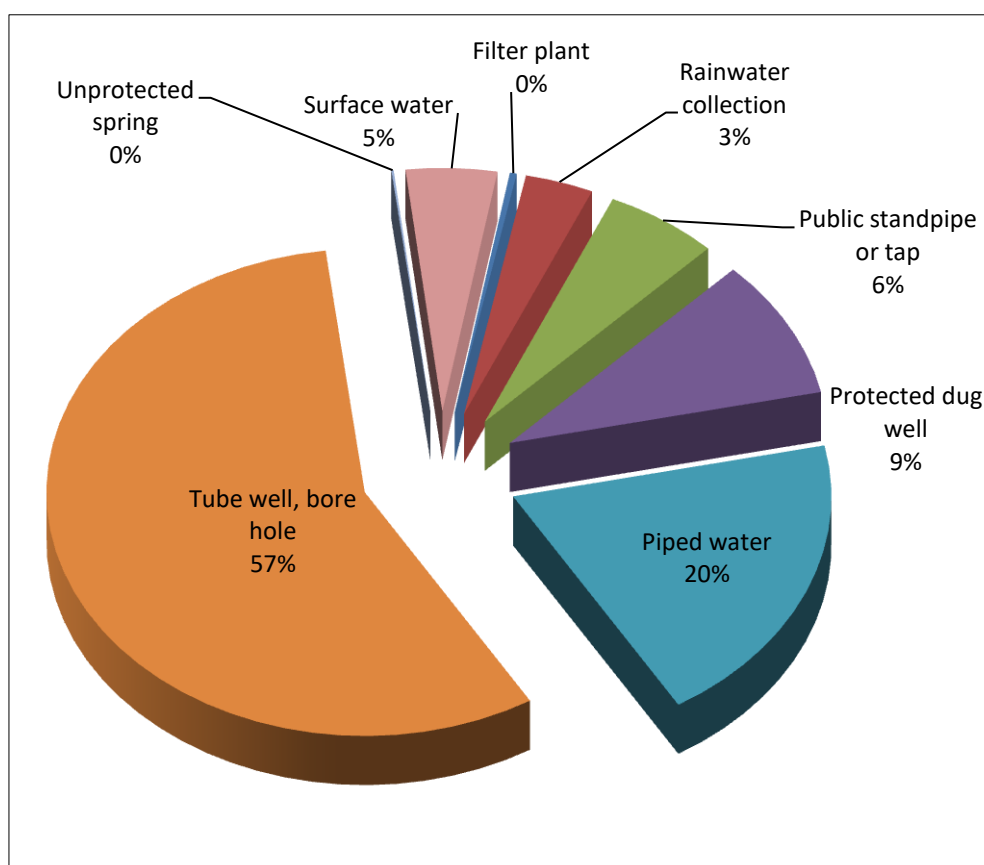


Figure 4.22: Sources of Drinking Water in Chagai

Sanitation

About 60% households in the districts are using improved sanitary toilets for human excreta disposal, while the remaining openly defecate in the bush or fields. Of those with toilets, a little over 38% have a flush system (**Figure 4.23**).³⁴¹

³⁴⁰ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁴¹ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

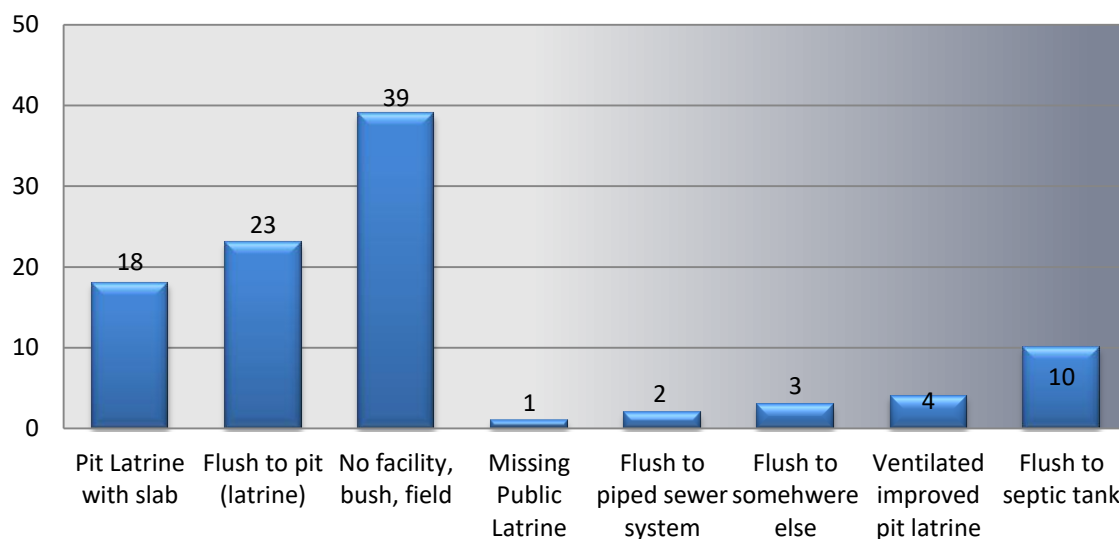
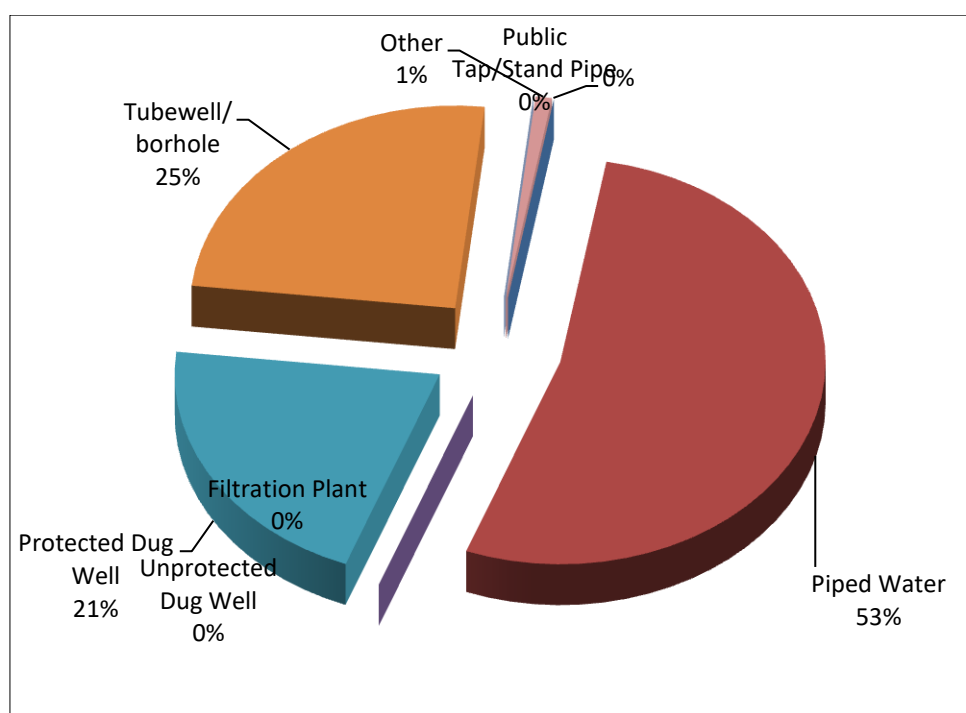


Figure 4.23: Sources of Sanitation Facilities (%) in Chagai

4.6.14.2 Killa Abdullah District

Water Supply

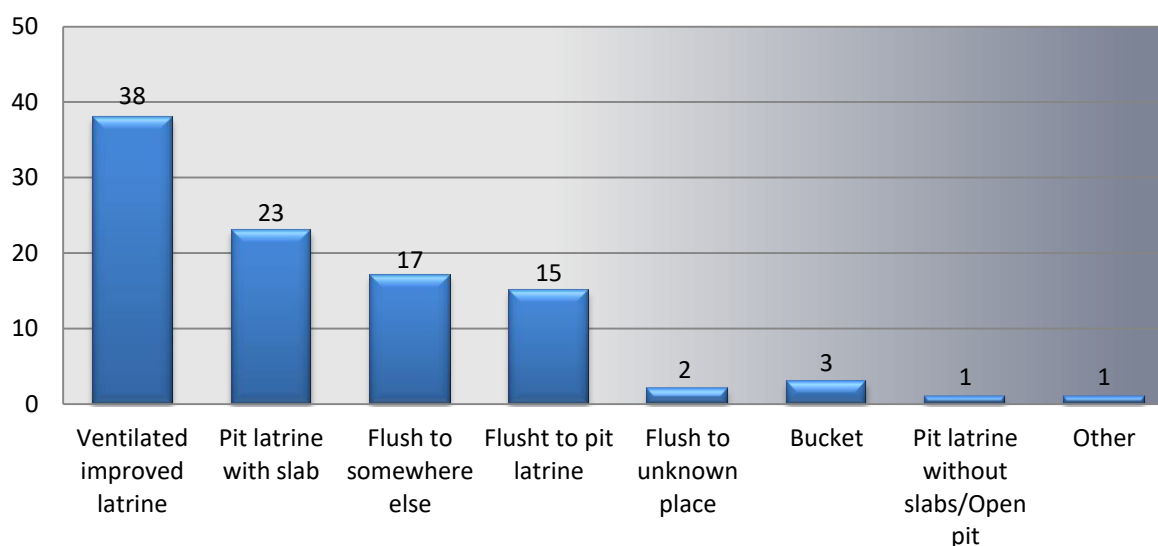
About 99% of the population has access to one or more improved water sources, of which, piped water (53%) constitutes the major source followed by tube wells or boreholes (25%) and protected dug well (20%). About 4.2% of households have to travel distances to fetch water. This usually is the responsibility of women or children of the household (**Figure 4.24**).³⁴²



³⁴² Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

Figure 4.24: Sources of Drinking Water in Killa Abdullah**Sanitation**

About 96% households in the districts are using improved sanitary toilets for human excreta disposal. Of those, only 34% have a flush system, while others are using different types of pit latrines (**Figure 4.25**).³⁴³

**Figure 4.25: Sources of Sanitation Facilities (%) in Killa Abdullah****4.6.14.3 Killa Saifullah District****Water Supply**

Almost 80% of the population has access to one or more improved water sources, of which, piped water (31%) constitutes the major source followed by tube wells or boreholes (17%) and protected springs (15%). The major unimproved sources are unprotected dug well (13%) and unprotected springs (5%). About 50% of the households have to travel to fetch water. This usually is the responsibility of women or children of the household (**Figure 4.26**).³⁴⁴

³⁴³ Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁴⁴ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

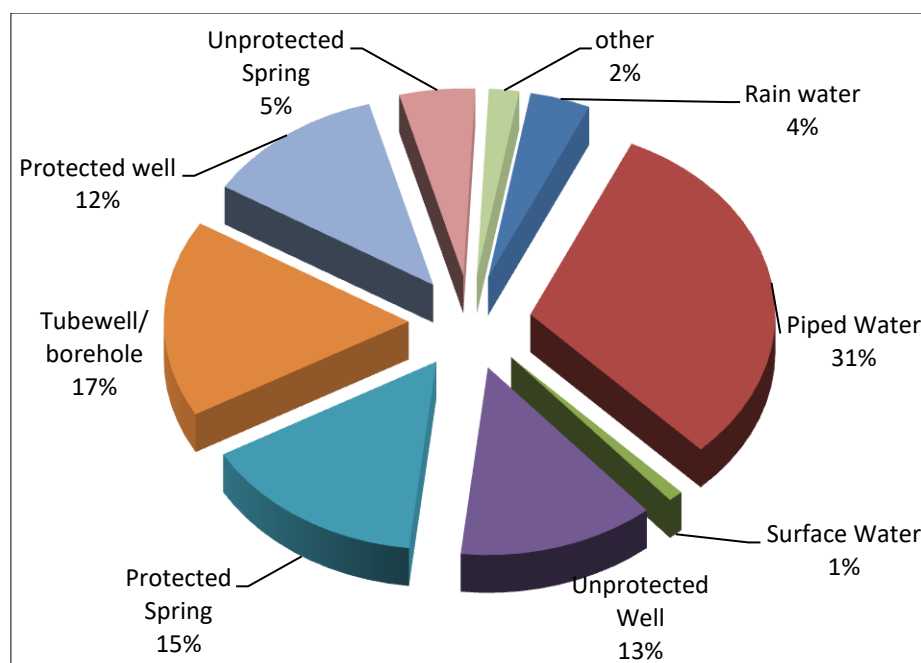


Figure 4.26: Sources of Drinking Water in Killa Saifullah

Sanitation

About 30% households in the districts are using improved sanitary toilets of which 10% have a flush system. About 45% of households have no toilet facility and defecate in open fields and bushes (**Figure 4.27**).³⁴⁵

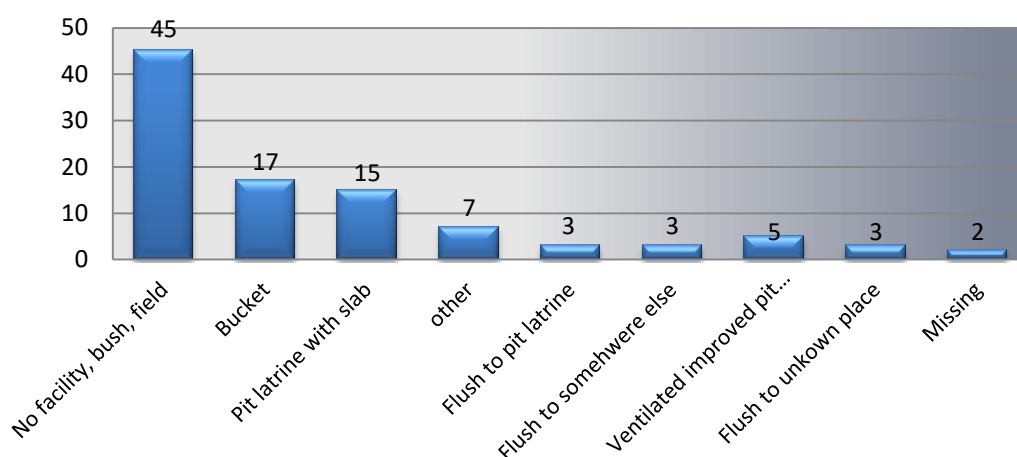


Figure 4.27: Sources of Sanitation Facilities (%) in Killa Saifullah

4.6.14.4 Mastung District

Water Supply

Almost 88% population has access to one or more improved water sources, of which, piped water (45%) constitutes the major source followed by tube wells or boreholes (31%) and protected dug wells (7%). About 28% of the households have to travel

³⁴⁵ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

distances to fetch water. This usually is the responsibility of women or children of the household. (Figure 4.28).³⁴⁶

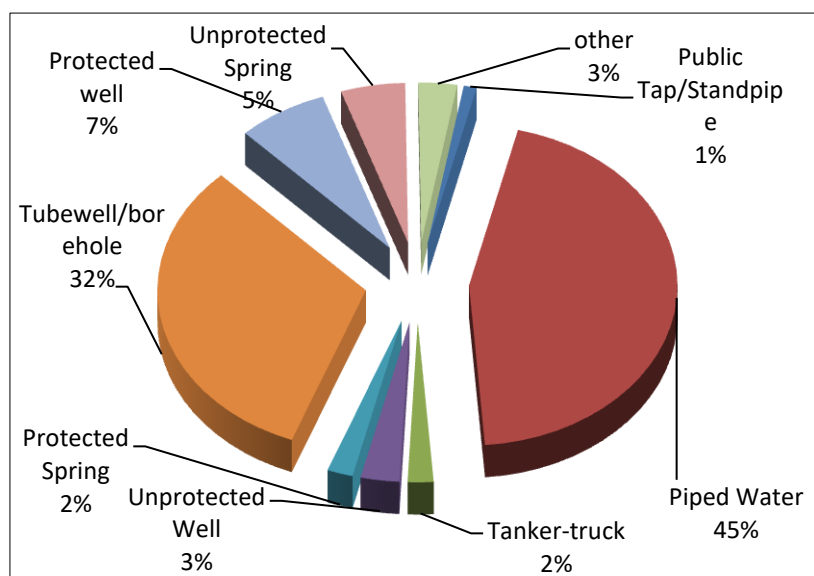


Figure 4.28: Sources of Drinking Water in Mastung

Sanitation

About 81% of the households in the district are using improved sanitary toilets of which 42% have a flush system. About 17% have no toilet facility and defecate in the open fields/bushes (Figure 4.29).³⁴⁷

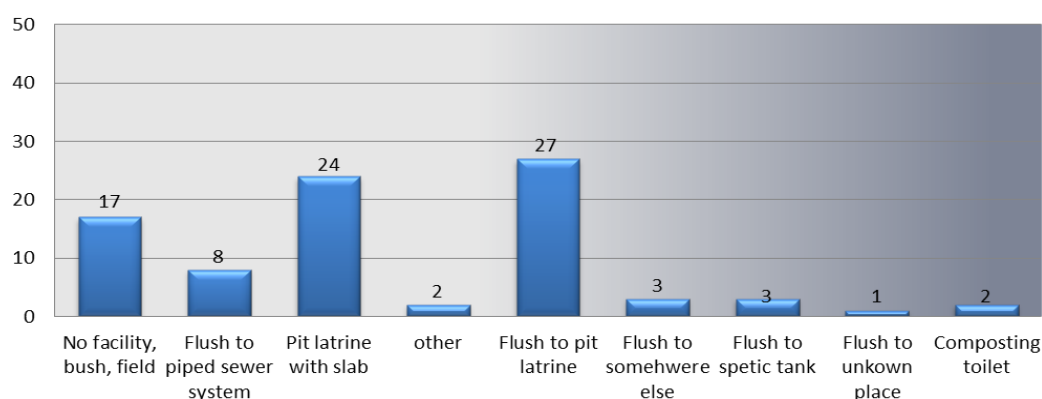


Figure 4.29: Sources of Sanitation Facilities (%) in Mastung

4.6.14.5 Nushki District

Water Supply

About 89% population has access to one or more improved water sources, of which, piped water (57%) constitutes the major source followed by tube wells or boreholes (17%) and rainwater collection (9%). About 37% households have to travel to fetch

³⁴⁶ Mastung - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁴⁷ Mastung - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

water, which is usually the responsibility of women or children of the household. (Figure 4.30).³⁴⁸

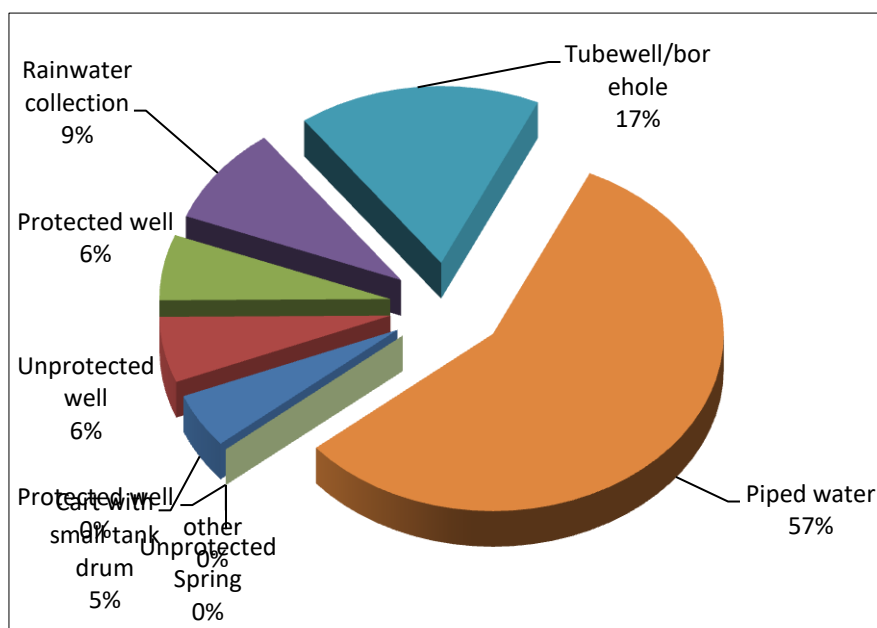


Figure 4.30: Sources of Drinking Water in Nushki

Sanitation

About 57% households in the district are using improved sanitation facilities of which 52% have a flush system. About 41% have no toilet facility and defecate in the open fields/bushes, raising the risk of disease transmission through air, insects/fly or other means (Figure 4.31).³⁴⁹

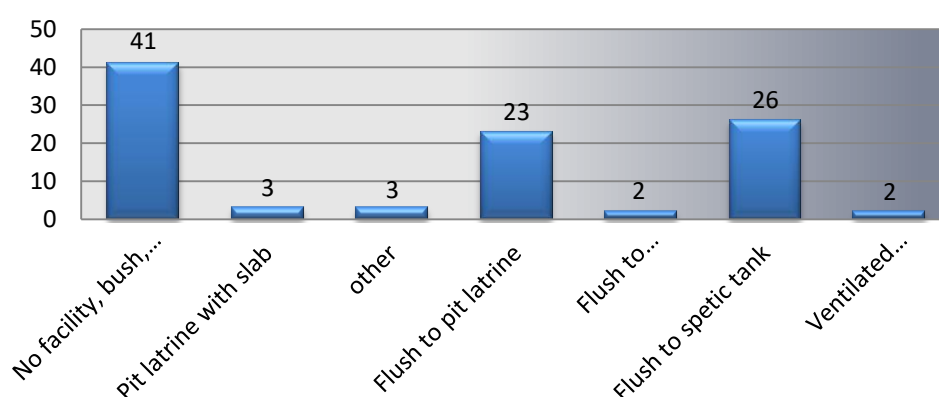


Figure 4.31: Sources of Sanitation Facilities (%) in Nushki

4.6.14.6 Pishin District

Water Supply

³⁴⁸ Nushki - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁴⁹ Nushki - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

About 90% of the population has access to one or more improved water sources, of which, piped water (52%) constitutes the major source followed by tube wells or boreholes (19%) and protected dug well (9%) (**Figure 4.32**). About 27% of the households have to travel to fetch water. This usually is the responsibility of women or children of the household.³⁵⁰

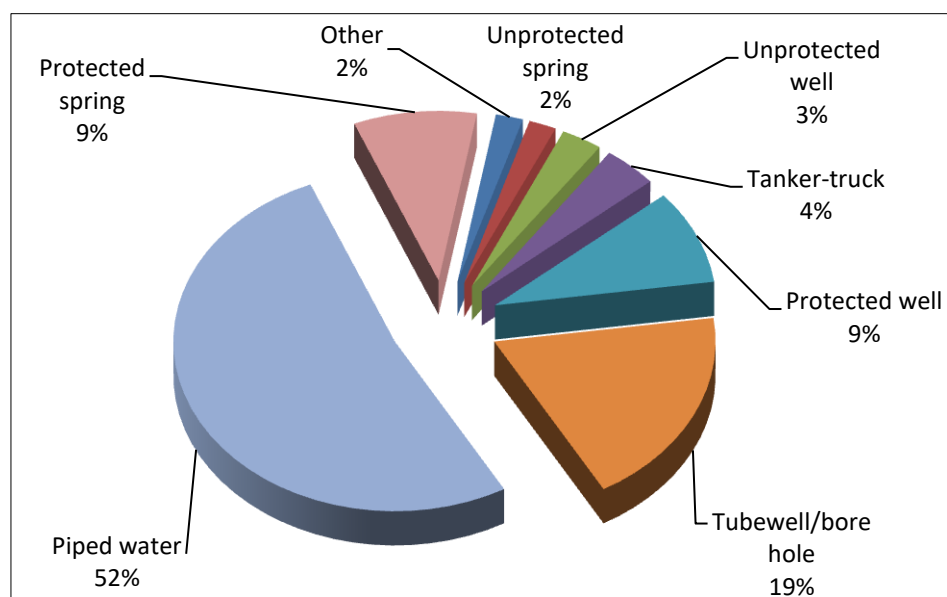


Figure 4.32: Sources of Drinking Water in Pishin

Sanitation

About 52% of the households in the districts are using improved sanitary toilets of which 24% have a flush system. About 12% have no toilet facility and defecate in the open fields/bushes, raising the risk of disease transmission through air, insects/flyes or other means (**Figure 4.33**).³⁵¹

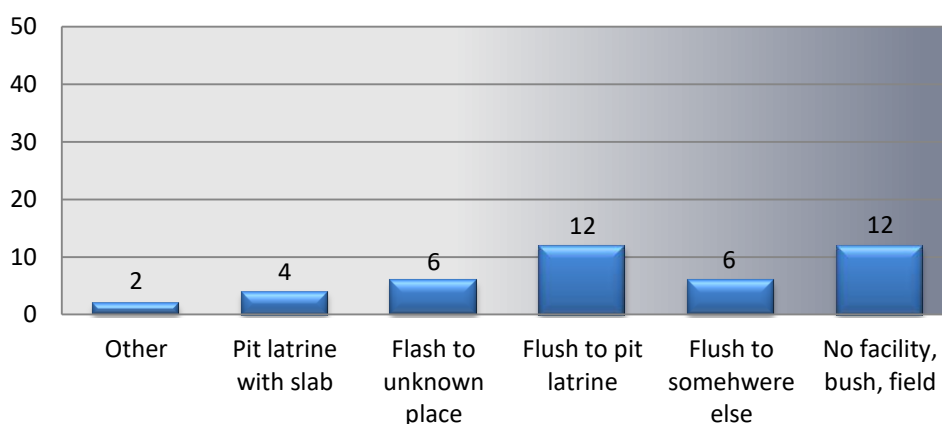


Figure 4.33: Sources of Sanitation Facilities (%) in Pishin

³⁵⁰ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁵¹ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

4.6.14.7 Sherani District

Water Supply

About 61% of the population has access to one or more improved water sources, of which, protected dug wells (21%) constitutes the major source followed by piped water (17%) and tube well/ boreholes (11%) (**Figure 4.34**). About 44% of the household have to travel to fetch water. This usually is the responsibility of women or children of the household. ³⁵²

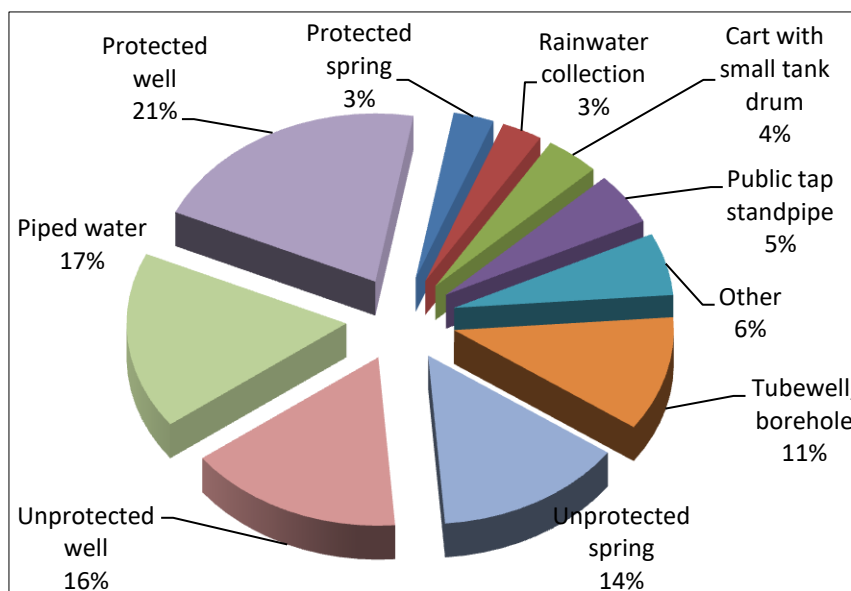


Figure 4.34: Sources of Drinking Water in Sherani

Sanitation

About 51% households in the districts are using improved sanitary toilets of which 17% have a flush system. About 45% have no toilet facility and defecate in the open fields/bushes, raising the risk of disease transmission through air, insects/fly or other means (**Figure 4.35**). ³⁵³

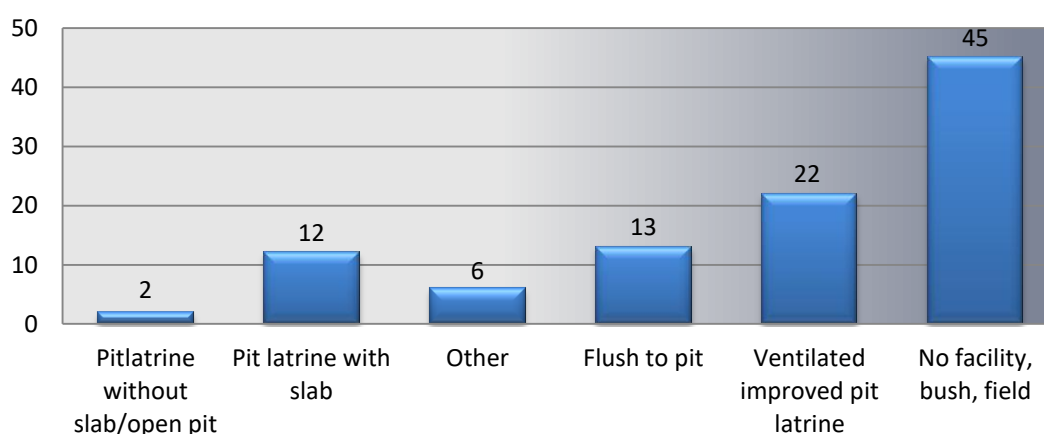


Figure 4.35: Sources of Sanitation Facilities (%) in Sherani

³⁵² Sherani - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁵³ Sherani - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

4.6.14.8 Zhob District

Water Supply

About 70% of the population has access to one or more improved water sources, of which, protected dug wells (32%) constitutes the major source followed by piped water (22%) and tube wells (7%) (**Figure 4.36**). About 55% of the households have to travel distances to fetch water. This usually is the responsibility of women or children of the household.³⁵⁴

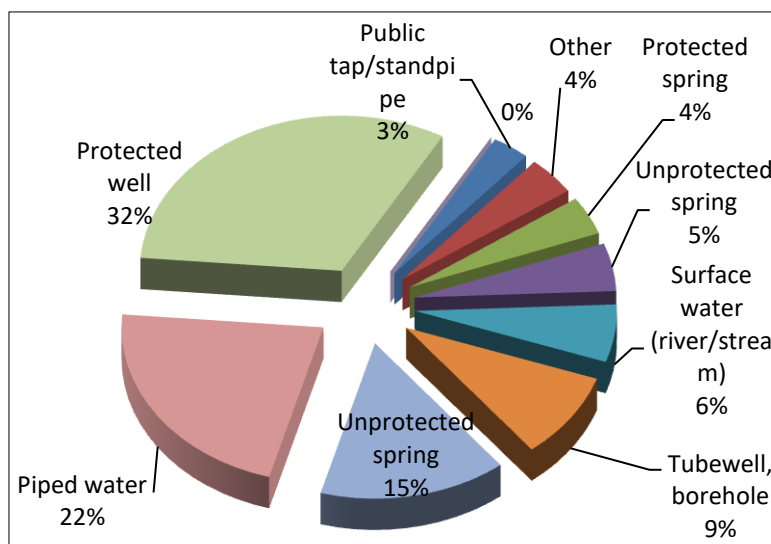


Figure 4.36: Sources of Drinking Water in Zhob

Sanitation

About 62% of households in the districts are using improved sanitary toilets of which 27% have a flush systems. About 35% have no toilet facility and defecate in the open fields/bushes, which raises the risk of disease transmission through air, insects/fly or other means (**Figure 4.37**).³⁵⁵

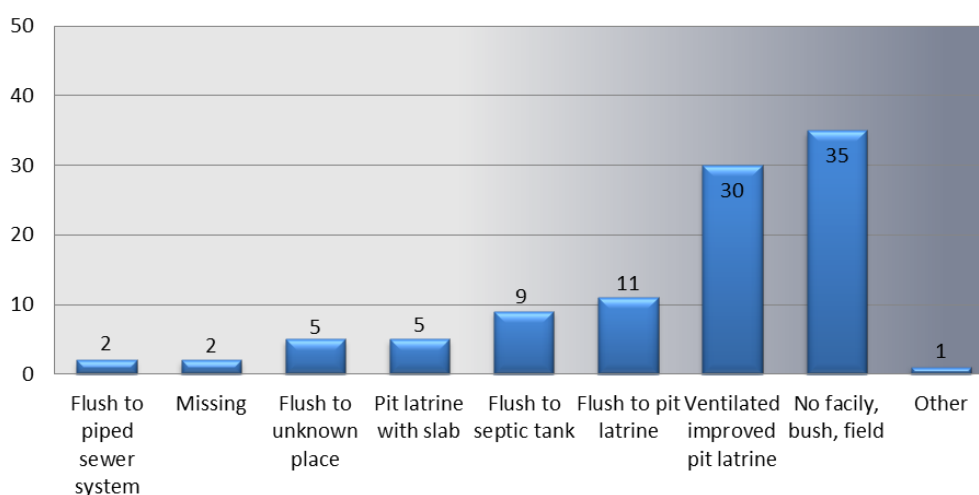


Figure 4.37: Sources of Sanitation Facilities (%) in Zhob

³⁵⁴ Zhob- District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁵⁵ Zhob- District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

4.6.15 Communication Infrastructure

According to the Development Statistics of Balochistan, 2015-16, there are 117 telephone exchanges with 72,639 telephone lines, 42,061 broadband and 35,670 wireless connections in Balochistan province. There were 213 post offices in the province in 2015-16.³⁵⁶

4.6.15.1 Chagai District

According to the Development Statistics of Balochistan, 2015-16, there are six telephone exchanges with 2,023 telephone lines, 721 broadband and 4,002 wireless connections in Chagai district, as well as 8 post offices.³⁵⁷

4.6.15.2 Killa Abdullah District

According to the Development Statistics of Balochistan, 2015-16, there are seven telephone exchanges with 3,570 telephone lines, 915 broadband and 1,100 wireless connections in the district. In the district, seven post offices were functioning in 2015-16.³⁵⁸

4.6.15.3 Killa Saifullah District

According to the Development Statistics of Balochistan, 2015-16, there are two telephone exchanges with 763 telephone lines, 243 broadband and 398 wireless connections in the district. In the district, two post offices were functioning in 2015-16.³⁵⁹

4.6.15.4 Mastung District

There are four telephone exchanges with 487 total numbers of telephone lines. Total numbers of broadband and wireless phones are 296 and 1,170 respectively. There were six post offices functioning in 2015-16.³⁶⁰

4.6.15.5 Nushki District

There are three telephone exchanges with 1,086 total numbers of telephone lines. Total numbers of broadband and wireless phones are 335 and 2,903 respectively. There were three post offices functioning in 2015-16.³⁶¹

4.6.15.6 Pishin District

The numbers of telephone exchanges in Pishin are 9, with 2,223 telephones connections, 775 broadband and 1,502 wireless phones. 8 post offices were functioning

³⁵⁶ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

³⁵⁷ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

³⁵⁸ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

³⁵⁹ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

³⁶⁰ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

³⁶¹ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

in 2015-16.³⁶² In far flung areas, where it is not possible to open a post office at full scale, post-dispatch arrangements are made with local school teachers.³⁶³

4.6.15.7 Sherani District

1,105 wireless phones were functioning in the district in 2015-16. One post office facility is available in the district.³⁶⁴

4.6.15.8 Zhob District

There is one telephone exchange in the district with 1,312 telephone connections in 2015-16. The total numbers of broadband and wireless phones are 420 and 830 respectively. The postal service in Zhob has eight functioning post offices.³⁶⁵

4.6.16 Law and Order

There are two main law enforcement agencies, police and levies in Balochistan. More than 80% of the area in Balochistan is under levies control. The levies are a conventional force, mobilized as an important corps in maintaining law and order situation all over the province. However, a regular police under a full-fledged Inspector General Office exists for law and order situation in the province.³⁶⁶ This is consistent in the project districts as well, with majority of the areas under the control of levies.

4.6.16.1 Chagai District

Levies comprising local tribesmen maintain law and order in the rural areas of the district very effectively. The police force is responsible for maintaining law and order only in the major towns of the district.³⁶⁷

4.6.16.2 Killa Abdullah District

In addition to levies, District Killa Abdullah has 3 police stations.³⁶⁸

4.6.16.3 Killa Saifullah District

Killa Saifullah has 2 police stations, 2 provincial levies thanas (stations), and 18 thanas and 10 chowkis (checkposts) of federal levies.³⁶⁹

4.6.16.4 Mastung District

Mastung has 1 police station that mostly covers the urban/town area of the district spread over 16 km. The rest of the district is patrolled by the Provincial Levies force possessing 4 stations, 24 chowkis (checkposts) and covering 77 km of area.³⁷⁰

³⁶² Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

³⁶³ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁶⁴ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

³⁶⁵ Development Statistics of Balochistan 2015-16, 2017, Planning & Development Department, Bureau of Statistics, GoP.

³⁶⁶ 1998 Provincial Census Report of Balochistan, Nov 2001, Population Census Organization, Statistics Division, GoP.

³⁶⁷ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁶⁸ Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁶⁹ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁷⁰ Mastung - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

4.6.16.5 Nushki District

Nushki has 8 levies chowkis (checkposts) which covers the area of 5,000 sq. km. ³⁷¹

4.6.16.6 Pishin District

In District Pishin, there are two main law enforcement agencies i.e. regular police and a paramilitary police force named “levies”. ³⁷²

4.6.16.7 Sherani District

Majority of Sherani is under the control of levies. One Police station exists in Manikhwa with a jurisdiction of 05 km. radius. ³⁷³

4.6.16.8 Zhob District

Majority of the district is under the control of levies with 22 stations and 2 checkposts. There is 1 police station which covers 15 sq. km of Zhob city. ³⁷⁴

4.6.17 Archaeological Sites and Monuments

There are total 389 officially notified sites of cultural and archaeological importance in Pakistan protected under the Federal Antiquities Act, 1975 and UNESCO. Out of these 389 sites, 27 sites are located in Balochistan province. ³⁷⁵ However none of these sites are present in project districts.

Sites of archaeological, religious and cultural importance in each of the project districts are detailed below.

4.6.17.1 Chagai District

The only features of archaeological interest in the district are the remains of ancient forts, *Karezes*, dams and cupolas. In Dalbandin Tehsil, there are ruins of several cupolas in the neighborhood of Padag and Zarala. Shrines of Sayyad Bala Nosh (Chaghai), Pir Sultan, Sheikh Hussain and Sayyad Khawaja Ahmad are located in the district. ³⁷⁶

4.6.17.2 Killa Abdullah District

Killa Abdullah has a number of scattered mounds with associated local traditions and cultural importance. The most important mound is Spin Ghundi Mound, which is located at the foothill of Khawaja Imran Range within the limits of the Habibzai village, Killa Abdullah. Captain Lock excavated the mound in 1881. The Khawaja Imran Shrine is accessible from Khurghi, Chaman and Shero Garden. The shrine consists of an enclosure surrounded by a wall of stones and containing a grave covered over with stones. Other sites are found in Chaman, Killa Abdullah, Shella Bagh, Gulistan, Khojak Tunnel. ³⁷⁷

³⁷¹ Nushki - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁷² Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁷³ Sherani - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁷⁴ Zhob - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁷⁵ ESIA – Promoting Girls Education in Balochistan (PGEb) Project, Aug 2012, Secondary Education Department, GoB.

³⁷⁶ Chagai - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁷⁷ Killa Abdullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

4.6.17.3 Killa Saifullah District

The district has some archaeological sites mainly attributed to the Mughals. The ruins of an old fort called Mughal-o-Killa or "The Fort of the Mughals" was found in the west of Karezgai Village, about 3¼ kilometers from Muslim Bagh. Below Muslim Bagh, there is a spring of water which was reopened about 125 years ago. Fragments of ancient pottery were found in these ruins and it is said that old silver and copper coins were also discovered. The ruins of a fort called Khanki lie near Shina Khura about 25 kilometers east of Muslim Bagh. Local tradition asserts that the fort was held by Miro, a Mughal governor, who was miraculously overthrown by Sanzar Nika, the progenitor of the Sanzarkhel Kakars. There are also ruins of an old fort called the Mughalo Brunj in Murgha Faqirzai. Similar ruins occur near Toiwar, Sharan, Ismailzai and on the Zhar hill near Akhtarzai. There also exists ancient Karezes, said to have been made during the Mughal period. These include Karez Akhtarzai, Karez Soghai and Mustafa Karez in Killa Saifullah and 2 karezes in Sra Khulla, about 6½ km from Muslim Bagh.³⁷⁸

4.6.17.4 Mastung District

The Mud Fort of Ain-i-Akbari (Akbari Law) is found in Mastung.³⁷⁹

4.6.17.5 Nushki District

Archaeological sites in Nushki include the Zangi-Nawar and Khanuwal lakes.

4.6.17.6 Pishin District

Archaeological sites are found in the Quetta-Pishin valley and the valleys to the immediate north, south and beyond in to Afghanistan, at the famous site of Mundigak and even reaching Shehr-e-Sokhta in Siestan.³⁸⁰

4.6.17.7 Sherani District

An archaeological site is found at Da Kase Ghar in Sherani. In addition, the district has the shrines of Hazrat Babakar Nika Harifal, Mullah Zaman Nika Pashtoon / Sherani (branches: Hasan Khel).

4.6.17.8 Zhob District

A number of mounds, ruins, and caves of historical and archaeological importance dot the expanse of the district. The general consensus among most experts is that they belong to the Mughal Period. Paryan-o-Ghundi (Hill of Fairies) is located 3 km to the west of Zhob Town. It was excavated by Sir Aural Syien in 1924. Rana Ghundi is an archeological site having mounds depicting a culture similar to the 3500 BC old Hisar Culture of north east Iran. The Red Pottery from here is believed to be more ancient than the Indus Valley Civilization. There are two well-known shrines in the district. They are of Hazrat Nazar Nika located six km from Zhob and Hazrat Khostoo Baba 100

³⁷⁸ Killa Saifullah - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁷⁹ Mastung - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁸⁰ Pishin - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

km from Zhob in the direction of Waziristan. Two other shrines are Zakoo Nika near Zhob and Palwand Baba in the Mughalkot area.³⁸¹

4.6.18 Gender Assessment

Tribes and tribal networks dominate social organization among the main ethnic groups of Balochistan. The tribal system has clear structures of leadership, and established informal norms concerning the conduct of leadership, dispute resolution, management of common property resources, and leadership transition. These tribal societies are also patriarchal. Given the underdeveloped state of the province and some of the worst poverty, education and health figures in Pakistan, there are high levels of gender disparity and social exclusion in Balochistan.

According to the Balochistan Strategy prepared by the Pakistan Poverty Alleviation Fund, survey data collected by the government shows that of 10 to 18-year-old girls who have never attended school, 42 percent have not done so because their parents objected, while 21 percent had to help at home. The overall literacy rate for Balochistan stands at 44 percent but with significant variations across regions and gender. Female literacy in some districts is as low as 2 percent. In rural Balochistan a mere 16 percent of females over age 10 have completed primary school.³⁸² Gender parity indices (GPIs) for public schools in Balochistan are very low and decrease further with higher levels of education. The gender parity index (0-1 where 1 is complete parity) for primary schools in Balochistan is 0.58 – the national GPI is 0.83.³⁸³

The province has some of the worst health statistics in the world. Estimates place the Balochistan under-five mortality rate at 89 deaths per 1,000 live births. However, there are high differentials between males and females and rural and urban areas. For females, the under-five mortality rate was estimated at 107 deaths per 1,000 live births while for males this figure falls to 74 deaths per 1,000 live births.³⁸⁴ The Balochistan MDGs Report of 2011 puts the infant mortality rate (IMR) for Balochistan at 72 per 1,000 live births. Disparities are especially high between urban and rural areas and between girls and boys. The IMR for females is reported at 82 while the IMR for males is reported at 63 per 1,000 live births.

Women's participation in the economy is handicapped first by the lack of proper accounting which does not factor in women's contribution to livestock management and vegetable farming (considered unpaid household work) and also by low educational attainment and cultural norms which prevent women from accessing education and/or employment opportunities. Women's contribution towards agriculture is not acknowledged and in many districts, women are unable to own land, thus limiting their options further. Access to employment is limited for both men and women but women make up only 11 percent of the labor force. The Balochistan Economic Report³⁸⁵ cites the potency of the tribal societal landscape and patriarchal norms in restricting women's participation in labor markets.

³⁸¹ Zhob - District Development Profile, July 2011, Planning & Development Department, GoB, UNICEF.

³⁸² Balochistan MDGs Report, 2011

³⁸³ Balochistan MDGs Report, 2011

³⁸⁴ Balochistan MDGs Report, 2011

³⁸⁵ Balochistan Economic Report, Asian Development Bank, 2005

Tribal conventions in some ethnic groups do not allow property ownership on the part of women. Entitlements to common property resources in these ethnic groups are also regulated and measured with reference to male family members. Even among highly egalitarian tribes – that is, those where “all” tribe members have equal shares in common property resources which they exercise and enforce – the privilege does not extend to women. Yet it is women who contribute to much of the economic value of common property resources. Women’s labor – such as grazing animals, fetching water, gathering herbs and firewood and undertaking other tasks – often remains unacknowledged and unpaid.³⁸⁶

³⁸⁶ Balochistan Strategy, Pakistan Poverty Alleviation Fund

5 Stakeholder Consultations

This Chapter will describe the objective, process, and outcome of the stakeholder consultations carried out during the ESMF preparation.

5.1 Objectives of Stakeholder Consultations

In accordance with World Bank Guidelines, public consultations are essential to fulfil the following objectives:

- Exchange of information related to the Project and its possible utilization in the Project designing/planning and implementation;
- Identification of likely impacts on land, resettlement, loss of livelihood.
- Ascertaining the most acceptable solutions and mitigation measures for possible issues which could arise during implementation of the Project activities;
- Eliciting community comments and feedback on the proposed Project;
- Facilitate and maintain dialogue with the stakeholders to gain consent on carrying out Project activities in the area;
- Encourage transparency and inculcate trust among various stakeholders to gain cooperation and partnership from the communities, local leadership, and NGOs.
- Record concerns regarding the various aspects of the Project, including the existing situation, Project area/area of influence, construction works and the potential impacts of the construction-related activities and operation of the Project.
- Incorporate mitigations measures to address concerns with Project design and implementation.

5.2 Stakeholder Identification and Analysis

The Stakeholders refers to the Project Affected Personal (PAPs)/ local community, associated departments/agencies, Non-Governmental Organizations (NGOs) and others, whose assets/land, business, structures, installations, interests may be impacted due to the Project activities. The influence or impact of stakeholders on the Project is elaborated in the form of a matrix and the mitigation measures are proposed accordingly. The stakeholder identification is a dynamic process as both stakeholders and their interests can change over the Project life.³⁸⁷ Stakeholders can be classified as primary and secondary stakeholders depending on the influence of the Project activities:

- Primary Stakeholders: People, groups or institutions directly affected by the Project and can influence the Project outcome.

³⁸⁷ Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets, 2007, International Finance Cooperation, PDF, http://www1.ifc.org/wps/connect/938f1a0048855805beacfe6a6515bb18/IFC_StakeholderEngagement.pdf?MOD=AJPERES (Date Accessed: March 22, 2018)

- Secondary Stakeholders: People, groups, or institutions that are indirectly affected by the Project and can influence Project delivery process.

Following stakeholders were identified as those who may likely to be influenced by the Project activities or would like to participate in the Project.

- Project Beneficiaries and Communities
- Government Departments and Implementation Partners;
- Regulatory Agencies;
- NGOs;

The stakeholders are identified below:

5.2.1 Primary Stakeholders

Primary Stakeholders are people; groups or institutions directly affected by the project and can influence the Project outcome. The identified primary stakeholders are as follows.

5.2.1.1 Communities and Project Beneficiaries

Community members that are likely to benefit from the project or be impacted by the Project activities Killa Abdullah, Killa Saifullah, Chagai, Sherani, Pishin, Mastung, Zhob and Nushki. The project interventions are likely to be carried out in these eight districts. The residents of the districts are primary stakeholders and were informed and consulted.

5.2.1.2 Planning and Development (P&D) Department, Balochistan

P&D department is a premier planning body in the province. It formulates all development, planning policy matters and plans to execute the policy. Provincial Five Years Plans (FYP) contains development policy while annual Public Sector Development Programmes (PSDPs) are planned to implement FYP policies concerning social, infrastructure and productive sectors. Small and medium range projects are accommodated in PSDP. There are eleven sections in the department, including administration section, which looks into development matters concerning different sectors, sub-sectors and other development packages. Each section, except administration section, is run by Chief of Section. The following sections of P&D are directly related to the project:

- Forest, Agriculture and Livestock Section
- Environment Section
- Mines and Minerals Development Section
- Foreign Aid Section

5.2.1.3 The Agriculture and Cooperatives Department

Agriculture Research in Balochistan was initiated during 1891 with Plant Protection and Horticulture. The area under cultivation in Balochistan has reached up to 814512

hectares over the years with more than 31 crops grow in the province³⁸⁸. Component 2 emphasizes on full spectrum of value chains (including agriculture, livestock, vocational training, horticulture, traditional handicrafts etc.) to cover on-farm activities at the community level as well as household level income generation activities. Therefore agriculture and cooperative department holds stake.

5.2.1.4 Livestock and Dairy Development Department Balochistan

Livestock and Dairy Development Department has vision to promote livestock in order to provide safe and quality products at competitive prices, covering entire value chain with focus on market & poverty reduction. The project interventions also envisage livestock development initiative therefore the concerned department will act as stakeholder in Balochistan Integrated Growth and Services Delivery Project.

5.2.1.5 The Forest and Wildlife Department Balochistan

The forest and wildlife department Balochistan deals with Conservation and Development of natural living resources on sustainable use basis through stakeholders' participation to ensure healthy environment and continue supply of goods and services for the benefit of people. The department is served as a stakeholder due to project intervention to promote medicinal plants and in order to ensure project activities are not carried out in protected areas.

5.2.1.6 Mines and Mineral Development Department

In pursuance of National Mineral Policy 1995, the Government of Balochistan has created the department of Mines and Mineral Development Department in March 2002. With the implementation of National Mineral Policy and formulation of Balochistan Mineral Rules 2002, several National / Multinational Foreign Mining Companies have responded favourable for the exploration and development of Mineral potential of the province. Since the project interventions are likely to be carried out in mines and minerals sector through investment in processing plants of various minerals extracted from project districts.

5.2.1.7 Small Industries Directorate

The department aims to develop, promote and support industrialization with the aim to uplift living standard of common people. The Directorate of Industries Small Industries Wing has dual functioning with regard to its official activities. At one side it is providing skill developing training in the art traditional handicrafts and on the other hand it is striving to preserve, promote and protect the rich heritage of the province. Since the project is likely to create opportunities for small business therefore the department is identified as a stakeholder.

5.2.1.8 Culture, Tourism and Archives Department

³⁸⁸ http://balochistan.gov.pk/index.php?option=com_content&view=category&id=1091&Itemid=52

The Department of Culture, Archives and Tourism therefore, strives to protect the cultural heritage of Balochistan, both tangible as well as intangible, and promote tourism in the province. The project activities are lively to enhance tourism infrastructure in select districts therefore the department will serve as a stakeholder.

5.2.1.9 Urban Planning & Development Department

In 2008 Government of Balochistan established Urban Planning & Development Department with its six divisional field offices at Quetta, Sibi, Dera Murad Jamali, Khuzdar, Kech & Loralai provincial headquarter of the department is in Quetta. The Department is entrusted the task to oversee all Urban and housing facilities for the people of Balochistan. It has initiated master planning of all major cities of the province so that the future civic needs could be catered with systematic planning. The project interventions will develop infrastructure in identified districts therefore the department may act as a stakeholder in identification and allocation of land.

5.2.1.10 Environment Sports and Youth Affairs Department

The Environment, Sports & Youth Affairs Department was established in the year 2004 and presently looking after Balochistan Environmental Protection Agency, Balochistan Sports and Youth Affairs directorates. The department is a stakeholder as there are environmental implications related to the project interventions and Balochistan Environmental Protection Agency is a regulatory agency for environmental law of the province.

5.2.2 Secondary Stakeholders

5.2.2.1 International Union for Conservation of Nature (IUCN)

IUCN's program in Asia aims to mobilize communities working for biodiversity conservation, sustainable development and poverty reduction in common efforts to halt biodiversity loss and apply nature-based solutions to conserve biodiversity, enhance resilience, strengthen equity and reduce poverty.

5.2.2.2 Small and Medium Enterprise Authority (SMEDA)

SMEDA is working in close coordination with all relevant provincial and federal government organizations, chambers, associations, donors, multinationals etc. to facilitate and provide required support to the investors in general and SMEs in particular. Since the project will support small businesses, therefore, SMEDA will also act as stakeholder working in same sector.

5.2.2.3 United Nations Food and Agriculture Organization (UNFAO)

The FAO Balochistan Agricultural Program helps Balochistan's communities improve their livelihoods. FAO is considered a stakeholder due to its investment in agriculture and food department which are focus areas of the project.

5.2.2.4 United Nations Development Program (UNDP)

UNDP supports the government, institutions and people of Pakistan to improve livelihoods by building capacities for climate change mitigation and adaptation, providing sustainable energy solutions and maintaining the integrity of ecosystems. UNDP also supports government and civil society partners to empower women and achieve gender equality.

5.2.2.5 AHAN - Aik Hunar Aik Nagar

With an objective to alleviate poverty in rural and peri-urban areas of Pakistan by supporting rural based micro and small enterprises engaged in the production of non-farm goods, Aik Hunar Aik Nagar (AHAN) is operating as a not-for-profit Company since 2007. AHAN also aims on enabling environment for the targeted poor producer groups in non-farm sector, particularly women, landless and wage earners in rural and peri-urban areas. Since the project interventions also relate to handicraft production for women, therefore, AHAN is considered a stakeholder for the project.

5.3 Consultations During Project Planning and Implementation

As per Project ISDS, a Behavioural Change Communications Strategy which will cover citizens engagement, beneficiary monitoring and feedback, gender mainstreaming and grievance redressal. This strategy once implemented will ensure continuous engagement throughout project planning and implementation.

5.4 Consultations with Communities

5.4.1 Consultation Material

A presentation, project brief and questionnaire were prepared for stakeholder consultations. The Project brief contained information on the Project activities while the presentation contained information on BLP objectives and its components, ESMF purpose, stakeholder consultation process and implementation arrangements. An ESMF questionnaire was used to enquire about the environmental and social concerns of the project.

5.4.2 Communities Consulted

Consultations were conducted with community members within their settlements to encourage and facilitate their participation. Locals were hired from the project districts and trained for the consultation purpose. Local facilitators were explained the Project brief and the consultation process, so that they were well equipped to communicate on the consultation process with communities in an informed and knowledgeable manner. Representatives, notables and other interested groups from the communities were invited. A total of 29 settlements were consulted in eight Project districts of Balochistan.

Responses were recorded in the form of a questionnaire given in **Annexure 6**. Total 45 questionnaires were filled and stakeholders were also given an opportunity to raise any other queries or concerns regarding the Project. Queries were responded to and concerns were documented. List of communities consulted are as shown in **Table 5.1**. The concerns of the communities have been included in the consultation findings/summary.

Table 5.1: List of Communities Consulted

Village	Disctrict	Tehsil	Union Council	Number of Participants	Date
Amin Abad	Chagai	Dalbandin	Chagai	12	4 th June 2018
Chagai	Chagai	Chagai	Chagai	15	4 th June 2018
Dalbandin	Chagai	Dalbandin	Dalbandin Town	12	5 th June 2018
Padag	Chagai	Dalbandin	Padag	11	5 th June 2018
Killi Fateh Khan	Killa Abdullah	Chaman	Daman Mir Alizai	11	6 th June 2018
Murda Kareez	Killa Abdullah	Chaman	Purana Chaman	12	6 th June 2018
Pado	Killa Abdullah	Chaman	Pado Karez	12	7 th June 2018
Ghulan	Killa Abdullah	Chaman	Murda Karez	11	7 th June 2018
Saddar	Killa Saifullah	Killa Saifullah	Saddar	17	7 th June 2018
Molvi Bakhtiar	Killa Saifullah	Muslim Bagh	Nasai	12	8 th June 2018
Haji Amir Khan	Killa Saifullah	Killa Saifullah	Bandar Mizai	13	8 th June 2018
Mullah Fzai	Killa Saifullah	Muslim Bagh	Murgha Faqirzai	14	9 th June 2018
Kund Umrani	Mastung	Mastung	Kad Kucha	12	8 th June 2018
Pring Abad	Mastung	Mastung	Sorgaz	12	8 th June 2018
Dringar	Mastung	Mastung	Mobi	13	9 th June 2018
Azizabad	Mastung	Mastung	Mastung 1	12	9 th June 2018
Killi Jorakeen	Nushki	Nushki	Mal	13	6 th June 2018
Killi Sarmal	Nushki	Nushki	Mal	11	6 th June 2018
Darzi Chah	Nushki	Nushki	Dak	10	7 th June 2018
Essa Chah 1	Nushki	Nushki	Dak	12	7 th June 2018
Zarghoon	Pishin	Karezath	Khurshab	21	6 th June 2018
Zarghoon	Pishin	Karezath	Khurshab	13	6 th June 2018
Killi Pashe	Pishin	Saranan	Ajram Shadezai	11	6 th June 2018
Daro	Pishin	Saranan	Ajram Shadezai	10	8 th June 2018
Khankai	Sherani	Sherani	Manikhwa	10	5 th June 2018
Killi Sardar Hakeem Khan	Sherani	Sherani	Manikhwa	12	5 th June 2018
Sohai Itwar Khan	Sherani	Sherani	Manikhwa	12	4 th June 2018
Takai No.1	Zhob	Zhob	Takai	25	7 th June 2018
Takai No.2	Zhob	Zhob	Takai	11	7 th June 2018
Viala Pasta	Zhob	Zhob	Omza Viala	12	8 th June 2018

5.4.3 Summary of Community Concerns

The key concerns that emerged from community consultations are summarized in **Table 5.2** below.

Table 5.2: Summary of Concerns Raised by Community Stakeholders

District	Village	Tehsil	Union Council	Comments/Issues raised	Project Response
Chagai	Aminabad	Dalbandin	Chagai	The Project would improve the socioeconomic condition of rural communities by increasing agriculture productivity and also enhance new opportunities in agriculture sector.	The aim of the project is to improve the socioeconomic position of target communities
				There would be no negative impact other than water depletion. Social conflicts among communities might arise in case of biased selection of beneficiaries.	Water depletion and social conflicts will be managed through mitigation measures proposed in the ESMF and relevant ESMPs
				It is important to focus on transparency and right selection of deprived communities.	The community will be involved in this process
				Agriculture productivity will increase. Unemployment would also decrease and it will also improve forest.	This is the aim of the project
				Farmers should be trained and given sprays, seeds and other medicines to increase crops production.	Project will consider these activities
				At household level solar system should be provided. For women, new handicraft machines should be provided.	Project will consider these activities
	Chagai	Chagai	Chagai	The proposed Project would definitely improve the livelihood condition if it is designed according to the needs of people. It is also important that honest people are engaged in implementation of the Project that would change the lives of poor in positive manner.	Community mobilization is part of the project activities
				If merit is not followed the Project could have negative impact on social lives	Community mobilization is part of the project activities
				The negative environmental and social impacts can be mitigated through awareness raising, adequate funds and involvement of educated and credible people. The decision should be taken in consultation with the stakeholders.	Project will address this through ESMF and ESMPs
				The expectations from the Project are very high and it would	

District	Village	Tehsil	Union Council	Comments/Issues raised	Project Response
				contribute in improved livelihood by creating a skilled generation.	
				In Chagai, there is a need to promote minerals and mines by adopting new technologies. For women, gardening should also be promoted at household level.	Project will consider these activities
				Technical and vocational training, use of new technology, awareness about modern agriculture technology and woollen marketing skills are required for people to participate in Project related activities.	Project will consider these activities
	Dalbandin	Dalbandin	Dalbandin Town	The socioeconomic condition of rural poor would improve as it will reduce unemployment.	
				Social conflict might arise in case deserving people did not get involved in the Project. Solar systems should be installed in agriculture sector to minimize the risk of water depletion.	Community mobilization is part of the project activities
				The most deprived and marginalized people should be involved in the Project to get maximum benefit otherwise the Project cannot be successful.	Community mobilization is part of the project activities
				Agriculture and livestock sectors would improve. Social cohesion among communities would increase. It will also increase people skills in handicraft sector and traditional trades.	
				The local communities should be engaged in Project activities and merit should be considered strictly so that everyone can get maximum benefit.	Community mobilization is part of the project activities
				Modern technical and vocational trainings on handicrafts with latest equipment are required. Training on latest techniques of farming and livestock would also be useful for overall development.	Project will consider these activities
	Killa Abdullah	Chaman	Daman Mir Alizai	The Project would be beneficial if vulnerable are entertained. The Project will help to eradicate poverty in the district.	Community mobilization is part of the project activities
				The Project will bring prosperity in the area.	

District	Village	Tehsil	Union Council	Comments/Issues raised	Project Response
				The Project activities should be monitored before and after the implementation.	This will be part of the project design
				Right selection of beneficiaries is very important.	Community mobilization is part of the project activities
	Murda	Chaman	Purana Chaman	The Project will minimize the poverty in the area.	
				Selection of vulnerable people is one of the biggest part of the Project.	Community mobilization is part of the project activities
	Pado	Chaman	Pado Karez	The Project will help the poor people of the area and will promote livelihood. Youth will be empowered through the technical trainings.	
				There is no need of social mobilization as social mobilization has been done in the past.	Noted
	Gulan	Chaman	Murda Karez	The Project will help the rural communities to earn in a respectable livelihood.	
				Right selection of vulnerable communities is very important.	Community mobilization is part of the project activities
Killa Saifullah	Saddar	Killa Saifullah	Saddar	The Project will generate the livelihood opportunities and improve the socioeconomic condition of rural households. The Project will help in the reduction of poverty. The investment in agriculture and livestock will promote the livelihood of the people.	
				Provision of grants and loans should be provided to the poor households.	Project will consider this
				The Project will help the capacity building of communities.	
				Technical and vocational trainings and latest machinery for agriculture should be provided under the Project.	Project will consider this
	Manloi Bakhtiar	Muslim Bagh	Nasai	The Project will help people to improve their livelihood that would eventually contribute in better socioeconomic conditions.	
				The Project should focus on mineral resources of the area as mining is the main source of	Project will consider this

District	Village	Tehsil	Union Council	Comments/Issues raised	Project Response
				livelihood.	
				By the use of modern machinery in mining and toxic gases may affect the humans and environment. The negative impacts should be minimized by adopting preventive measures in mining industry.	Mitigation measures will be proposed in the ESMF and ESMPs
				The expectations from the Project are very high as it would enhance the production of livestock.	
				Various type of livestock management training would help the locals to get maximum benefit.	Project will consider this
				Community should be mobilized to actively participate in Project.	Community mobilization is part of the project activities
	Haji Amir Khan	Killa Saifullah	Bandat Mizai	The Project can play a vital role in improving socioeconomic condition of the locals and contribute in reducing poverty in the district.	
				Excessive use of water during irrigation purpose may cause high depletion in underground water.	Mitigation measures will be proposed in the ESMF and ESMPs
				Trickle drip system should be promoted for irrigation.	Mitigation measures will be proposed in the ESMF and ESMPs
				The locals are expecting that the Project can improve per yield agriculture productivity that would bring positive change in socioeconomic condition of rural inhabitants.	
				Agricultural related trainings should be given to maximum farmers. Provision of small scale loans or grants to needy people will help them to create linkages to nearest market.	Project will consider this
				For women, handicraft interventions would promote household income.	Project will consider this
	Mullah Fzai	Muslim Bagh	Murgha Faqirzai	The Project will be beneficial for the area and it would create positive impact on socioeconomic conditions particularly in livestock section which is the main source	

District	Village	Tehsil	Union Council	Comments/Issues raised	Project Response
				of livelihood.	
				The Project would create new job opportunities for the people if it is implemented according to the needs of the area.	
				There should be some awareness program to minimize various viruses and infections in livestock.	Project will consider this
				If the Project is implemented in transparent manner, it would bring significant improvement not only in economic sector but also in the lives of rural inhabitants.	
				Technical and vocational training should be provided along with financial assistance and provision of modern equipment.	Project will consider this
Mastung	Kwad Umlrai	Mastung	Kad Kuclia	The Project can benefit livestock and agriculture sector of rural areas. If small scale loans are provided to poor people, it can increase employment opportunities in the area.	
				There would be negative impact if the Project will promote favouritism, which must be avoided. The Project should be implemented in transparent manner.	Community mobilization is part of the project activities
				The locals are hopeful that the farmers will get proper irrigation system and will get information about modern agriculture techniques to decrease water wastage in agriculture.	Project will consider this
				Young people should be provided latest agriculture and livestock trainings.	Project will consider this
				Local representatives, councillors and community notables should be involved in the Project so that the benefits of the Project can continue after the completion of the Project.	Community mobilization is part of the project activities
	Swgar	Mastung	Puring Abad	The Project can play important role for women focused skills training to enable them to improve livelihood and promote women empowerment. Women	Project will consider this

District	Village	Tehsil	Union Council	Comments/Issues raised	Project Response
				can be benefited in traditional embroidery and sewing and they can promote their own business at small scale.	
				Local women should be engaged in women focused activities to minimize the social negative aspect of the Project.	Project will consider this
				Women should be awarded loans, latest machinery and equipment of tailoring and embroidery.	Project will consider this
	Mohi	Mastung	Mohi	The Project will help the poor people and create new employment and livelihood opportunities and reduce unemployment.	
				The crime rate would decrease and socioeconomic condition of locals will improve.	
				There should be some training and awareness program about health and hygiene during livestock management.	Project will consider this
				People can be able to access the local market very easily through enhanced networking.	
				The Project should be implemented in both rural and urban areas. In rural areas, people can increase agriculture and livestock productivity whereas in urban areas, they can benefited in various skills and trades i.e. mobile repairing, welding, plumbing etc. to improve their livelihood.	Project will consider this
				Local people should be engaged in Project. Female staff is essential and their mobility should be ensured by providing vehicles.	Project will consider this
	Azizabad	Mastung	City	The Project would be beneficial for men, women and especially youth. It would increase the skilled people in the area and decrease the unemployment.	
				The Project should focus on merit and transparency and local people should be involved in decision making to reduce the	Community mobilization is part of the project activities

District	Village	Tehsil	Union Council	Comments/Issues raised	Project Response
				negative aspect of the Project.	
				Mastung district is an agriculture area therefore the locals should be trained on new agriculture technologies and to improve their access to the local markets.	Project will consider this
				In order to mobilize communities, a comprehensive strategy should be adopted in consultation with community notables so that the under privileged can be made the part of the program.	Community mobilization is part of the project activities
Nushki		Nushki	Baghak Mal	The Project would improve the status of rural poor. Skills training for youth would bring positive change in the area.	
				Social conflict may arise if elders/notables of communities are not involved in decision making.	Community mobilization is part of the project activities
				It is expected that the Project would benefit maximum people in the sector of agriculture, livestock and small enterprises. Human capital would be enhances through customized technical and vocational trainings on various trades/skills.	
				Local people must be involved and identification of beneficiaries should be given consideration so that marginalized people can be benefited.	Community mobilization is part of the project activities
				Adequate resources i.e. staff and vehicles should be provided to mobilize staff.	Project will consider this
				If Project is implemented in transparent manner, it would increase employment opportunities and would help in reducing poverty and increase agriculture and livestock productivity.	
				In order to appropriate use of existing water, trickle drip system should be promoted.	Project will consider this
				The inhabitants should be trained on modern technologies to increase per yield productivity in	Project will consider this

District	Village	Tehsil	Union Council	Comments/Issues raised	Project Response
				agriculture sector and also given financial support to earn their livelihood.	
		Nushki	Dale	The Project can bring positive change in the community and through agriculture and livestock; they would be able to increase their income.	
				Skills training on enterprise development and training on electrician/plumbing is highly recommended. Females should be trained on traditional handicraft and embroidery skills and financial assistance should be provided.	Project will consider this
				If local people are hired for the Project, needy and marginalized people can easily be identified.	Project will consider this
				Community elders and government department should be involved for sustainable development.	Project will consider this
				Women staff especially locals are necessary to mobilize females at household level.	Project will consider this
				The use of modern technologies and enhancing marketing networking would bring significant improvement in livelihood pattern of the area.	Project will consider this
				Awareness training should be provided to promote conservation of forests, rangelands and wildlife, particularly various species of snakes and seasonal/migratory birds i.e. Houbara Bustard etc.	Project will consider this
				Proposed Project will contribute towards balanced ecosystem and safe environment.	
				Young people should be considered as the primary target group so to engage them in productive activities. Moreover, culturally appropriate interventions should be implemented that would ensure the equal participation of men and women in the Project.	Project will consider this

District	Village	Tehsil	Union Council	Comments/Issues raised	Project Response
				Gender specific training programs should be designed. Government department such as forestry and environment and wildlife and consultants/experts should be taken on board on capacity enhancement programs.	Project will consider this
Pishin	Zarghoon	Karezaf	Khushab	The Project will generate employment opportunities and the economic condition of the locals would be better.	
				Same trades should not be opened in the same place. So many small scale business having same trades in the same area might cause problems.	Project will consider this
				Due to the Project, trading opportunities would increase. By utilizing the skills locals can also increase their income.	
	Killi Pashe	Saranan	Ajram Shadeza	The Project would help to improve the socioeconomic condition of the rural households to improve in livelihood, creating a new employment opportunities. The income will increase through livestock and skill development.	
				Due to deforestation, the diseases may increase, the drizzling system is minimized and the level of groundwater is depleting.	Mitigation measures will be provided in ESMF and ESMPs
				By plantation and raising awareness against deforestation the negative impacts can be mitigated.	Project will consider this
				The expectations from the Project are increase in business, skill development, provision of water for the community and prosperity.	
				To maximize the benefits from the Project, tree plantation, rehabilitation of clean drinking water system should be promoted. Also, divert the people mind towards business to increase their income.	Project will consider this
				Skill development and resources are more significant for everyone that could be related with the	Project will consider this

District	Village	Tehsil	Union Council	Comments/Issues raised	Project Response
				Project activities.	
	Daro	Saranan	Ajram Shadeza	The Project will improve the living standard of the households and as a result the poverty will reduce.	
				The only negative environmental impact is that lot of well digging in a very close distance and it may decrease the level of groundwater. It can be mitigated by digging the wells at some distance.	Mitigation measures will be provided in ESMF and ESMPs
				To get maximum benefits from the Project, there should be some interventions that can be started with less investment i.e. plantation of trees, rehabilitation of water system etc.	Project will consider this
Sherani	Khankai	Sherani	Manikhwa	The Project will improve socioeconomic condition and the livelihood of rural households and will generate employment opportunities and also improve the skills, require for the livestock and agriculture.	
				The expectations are to get employment opportunities and resources needed for agriculture, livestock and forests. Also, empower women by providing better opportunities.	
				Project interventions should be based on the needs of the locals. To maximize the benefits of the Project, all the households of the village should be included and especially women.	Community mobilization is part of the project activities
				The social conflicts may arise, if the Project is not transparent. The Project activities should be neutral and transparent.	Community mobilization is part of the project activities
				There should be proper accountability so the maximum benefits can be obtained. Training related to agriculture and livestock and small scale loans should be provided to household levels.	Project will consider this
				The community should be involved in implementation of the	Community mobilization is part of the project activities

District	Village	Tehsil	Union Council	Comments/Issues raised	Project Response
				Project.	
	Killi Sardar Makeen	Sherani	Manikhwa	If training and resources are provided, the locals will get chance to increase their capacities and also improve their life style and get better employment opportunities.	Project will consider this
				There would be a negative impact if Project interventions are not properly managed.	Mitigation measures will be provided in ESMF and ESMPs
				Negative impact should be addressed through accountability and by directly involvement of the community notables.	Mitigation measures will be provided in ESMF and ESMPs
				The Project will provide employment as well as provide skills to the household and communities.	
				The benefits can be maximized by directly providing the equipment and machinery for agriculture, livestock and forest to the locals.	Project will consider this
	Sui Itwar Khan	Sherani	Manikhwa	The Project interventions are helpful to all the community and it will improve the lives and standard of rural households.	
				The Project will help the locals to increase their incomes by generate employment opportunities. The locals will get latest machinery and techniques for agriculture and livestock management.	
				Direct involvement of communities and households are necessary in Project interventions. Financial resources, machinery and latest equipment are also needed.	Community mobilization is part of the project activities
Zhob	Takai No.1	Zhob	Takai	BRSP has the ability to implement the Project in an effective manner. The Project will be beneficial for the locals.	
				The locals are expected that due to the Project interventions, the livelihood and life standard of households and community will be improved.	

District	Village	Tehsil	Union Council	Comments/Issues raised	Project Response
				Olive trees forest can be promoted under this Project. Solar systems can be installed on agricultural lands. Picnic points can be developed at Silyaza.	Project will consider this
				Training on computer skills, handicraft and plantation can be provided under this Project.	Project will consider this
				Due to the Project interventions, the employment opportunities will increase.	
				To improve agriculture production, check dams should be constructed.	Project will consider this
				Silyaza is a tourism place where stall can be established for community to boost up their business.	Project will consider this
	Takai No.2	Zhob	Takai	It is expected that the Project will help poor communities in establishing small business for them.	
				Due to the Project, the livelihood of the communities would be improved and unemployment will be decreased.	
				It is expected that life standard of community would be improved.	
				Under the Project interventions, construction of check dams, provision of solar system and quality seeds should be considered. Trainings for agriculture management and techniques should be given to the farmers and youth.	Project will consider this
				Training on mobile repairing skill, handicraft and solar system installation skills are needed.	Project will consider this
	Viala Pasta	Zhob	Omza Viala	The community elders are hopeful that the Project will help the locals to improve their livelihood and socioeconomic conditions.	
				It is expected that the life standard of the community would be improved/	
				Under the Project interventions, olive trees forest can be	Project will consider this

District	Village	Tehsil	Union Council	Comments/Issues raised	Project Response
				promoted. Solar systems can be installed on agricultural lands. Check dams are needed. Chromite minerals can be explored from rocks.	
				Training on plantation and cropping quality, computer skills and handicraft can be provided under this Project.	Project will consider this

5.5 Consultations with Institutional Stakeholders

5.5.1 Consultation Material

A presentation, project brief and questionnaire were prepared for stakeholder consultations. The Project brief contained information on the Project activities while the presentation contained information on BLEP objectives and its components, ESMF purpose, stakeholder consultation process and implementation arrangements. An ESMF questionnaire was used to enquire about the environmental and social concerns of the project.

5.5.2 Consultation Mechanism for Institutional Consultations

Letters to inform the institutional stakeholders about the objectives of the consultation process and to set up meetings with them were dispatched in advance. The stakeholders were also informed via telephone or email of the objective of the consultation meetings. Where possible, a copy of the Project brief was shared in advance of the consultation meeting to encourage understanding of Project information for discussion during meeting.

An option was also given to stakeholders to provide their additional feedback in the form of emails or letters. The meetings progressed in the following manner:

- An overview of the Project description to the institutional representatives;
- Description of the BLEP objectives and its components and ESMF purpose;
- Stakeholders were given the opportunity to raise queries or concerns regarding the Project. Queries were responded to and concerns were documented for consideration in the ESMF.

List of institutional stakeholders consulted are as shown in **Table 5.3** and photographs of the institutional consultations are given in **Table 5.4**. The detailed log of consultation is given in **Annexure 6**.

Table 5.3: List of Institutional Stakeholders Consulted

Stakeholder	Name of Stakeholder Representative	Designation of Stakeholder Representative	Contact Number	Date Consulted
Group Meeting				

Stakeholder	Name of Stakeholder Representative	Designation of Stakeholder Representative	Contact Number	Date Consulted
Environment, Planning and Development Department	Mr Tabussum Ahmed	Chief of Section	0321 802 4241	April 24, 2018
Livestock and Agriculture, Planning and Development Department	Mr Aminullah Khan	Chief of Section	(081) 920 1145	April 24, 2018
Livestock and Fisheries, , Planning and Development Department	Mr Shah Jehan	Chief of Section	0300 975 3214	April 24, 2018
Forest, Planning and Development Department	Mr Hassan Nouman	Regional Officer	0336 736 1666	April 24, 2018
Production, Planning and Development Department	Mr Shafiqu-ur-Rehman	Joint Chief	0333 782 9225	April 24, 2018
Mines and Minerals, Planning and Development Department	Syed Muhammad Waseem	Assistant Chief	(081) 920 3829	April 24, 2018
EPA, Balochistan/Environment Sports and Youth Affairs Department	Mr Muhammad Tariq	Director General	0333 139 0148	April 24, 2018
Mines and Mineral Development Department	Mr Durra Dashti	Additional Secretary	0343 237 4137	April 24, 2018
Culture, Tourism and Archives Department	Mr Jamil Baloch	Deputy Director	03348531315	April 24, 2018
Urban Planning & Development Department	Mr Amanullah Khan	Director		April 24, 2018
International Union for Conservation of Nature (IUCN)	Mr Faiz Kakar		0344 822 1547 0333 780 3453	April 24, 2018
United Nations Development Program (UNDP)	Mr Abdul Qayyum	Project Manager	0300 975 3214	April 24, 2018
United Nations Food and Agriculture Organization (UNFAO)	Mr Nasir Iqbal Mr Abid Saeed	National Expert National Expert	0300 319 9632 0300 319 9647	April 24, 2018
Livestock and Dairy Development Department	Dr Ghulam Hussain Jaffer	Director General	0333 785 0750	April 24, 2018
Small and Medium Enterprise Authority (SMEDA)	Mr Shakoor Ahmed	Provincial Chief	0331 803 0616	April 24, 2018
World Bank	Ms Mahwish Zeeshan Ms Saira Lehri	Strategic Communication Gender and Learning Specialist	(081) 920 4420 0333 755 3666	April 24, 2018
The Agriculture and Cooperatives Department	Dr Muhammad Javed Tareen	Director General	0334 819 9956	April 24, 2018
One to One Meetings				
Small Industries Directorate	Mr Abdul Aziz Abid	Deputy Secretary	0300 384 0851	April 25, 2018
The Forest and Wildlife Department	Syed Ali Imran	Consrvator Forest	0345 835 0008	April 25, 2018
AHAN - Balochistan	Mr Amjad Rashid		0333 788 8122	April 25, 2018
Balochistan Development Network	Mr Amjad Rashid		0333 788 8122	April 25, 2018



Goup Meeting



Consultation Meeting with Mr Abdul Aziz Abid, Deputy Secretary, Industries Department



Consultation Meeting with Mr Ali Imran, Conservator Forest



Consultation Meeting with Mr Tabbasum Ahmed, Chief Environment Section, Planning and Development Department.

Figure 5.1: Photographs of the Institutional Stakeholder Consultations

5.5.3 Summary of Consultations with Institutional Stakeholders

The key concerns that emerged from consultations are summarized in **Table 5.4** whereas the detailed log of consultations with institutional stakeholders is provided in **Annexure 6**. Forms have been kept for record.

Table 5.4: Summary of Concerns Raised by Institutional Stakeholders

Sectors/ Phase	Concerns Raised	Response Provided
Livestock	In Balochistan, 70-80% households depend on livestock. Will the construction of slaughter houses and tanneries boost the economy? The investment on slaughter houses would not be beneficial. Similar intervention for every districts is not likely to achieve project objectives therefore it is recommended that the Project Proponent should define different strategies for each districts depending on need assessment and previous reports from project implemented by SMEDA, UNDP and PSDP.	The enterprises will be established on the basis of needs of the communities. Local will take loans for businesses.
	Provision of veterinary services, greenhouses and tunnel farming and private/communities game reserves should be the part of this Project. The training component should be added in the Project. The trainings would help the farmers to cultivate crops with less investment. Mulberry trees are good to produce silk and can be a good investment. Sericulture and apiculture activities can be introduced under the Project.	The enterprises will be established on the basis of needs of the communities.
Agriculture	The climate of Balochistan is good for olive plants. About 15 varieties of olive plants have been introduced by the agriculture department. Flowers quality of Balochistan is good and can be a good investment. Nurseries can be setup in Balochistan and can be a good investment.	The enterprises will be established on the basis of needs of the communities.
	Farmers should be trained and given sprays, seeds and other medicines to increase agriculture production.	Trainings will be part of the project
	Technical and vocational trainings, use of new technology, awareness about modern agriculture technology and woolen marketing skills are required for people to participate in project related activities.	Trainings have been proposed in each sector
	The investment in agriculture and livestock will promote the livelihood of the people as these two sectors are the major sources of economic livelihood.	These sectors will be included in the project
Tourism	Tourism sector will not be beneficial in the selected districts as tourism does not exist in these districts. If the objective is to promote or invest in tourism, coastal area of Balochistan including Gwadar, Lasbela have more potential.	The enterprises will be established on the basis of needs of the communities. Coastal areas do not fall in project districts.
Mines and Minerals	In Chagai, there is a need to promote minerals and mines by adopting new technologies and new marketing techniques. For women, gardening should be promoted at household level. Safety measures training should be provided to the people who are involved in mining related activities.	Mining of minerals will not be financed by the project. Making use of mined material may be supported.
	Small scale loans should be provided to the poor people as it will increase employment opportunities in the area.	This is part of the project
Ecology	In order to increase knowledge on environment, awareness among masses to promote conservation of forests, rangelands and wildlife particularly various species of snakes and seasonal/migratory birds i.e. Houbara Bustard etc.	Trainings and awareness will be provided where appropriate
Climate Change	There is no linkage with local adaptation plans. Climate change local adaptation framework should be merged with the project. Due to climate change, Karez system has been dried.	Water conservation plans will be prepared for all supported activities that use water.

Sectors/ Phase	Concerns Raised	Response Provided
Environment	Negative environmental impact of tanneries should be minimized as tannery wastes affect the environment severely, causing ecological imbalance and the spreading of different kinds of fatal and contagious disease among the humans.	Concern noted. Mitigation measures will be adopted to minimize the negative environmental impacts.
	Environmental Assessment of the Project should be mandatory.	Screening Mechanism Included in ESMF
	Regulate the environmental and social wellbeing through contractual binding with the implementing partners and individuals borrowers.	
	Due to the use of modern machinery in mining, toxic gases may affect the environment. To minimize the negative impacts, mitigation measures should be adopted.	Mining activities will not be supported.
Social	Due to influx of 1.4 million livestock with Afghan refugees, grazing lands have been impacted by the overgrazing. Most fields are converted to barren land.	Concern noted and mitigation will be provided in ESMF.
	Without the involvement of the community's notables/Sardars/heads the implementation of the Project activities will be difficult. The notables/Sardars/heads should be involved prior to implement any Project activities in the area. If notables/Sardars/heads are involved, safety and security issues can be minimized.	The Project will be implemented with the help and support of locals. GRM is proposed in ESMF.
	Due to influx of outsiders, the culture of the area can be compromised.	The disturbance of outsiders shall be very minimal as the Project will only benefit the locals.
	The project would improve the socioeconomic condition of rural communities by increasing agriculture productivity and also enhance new opportunities in agriculture sector and will reduce unemployment.	Noted
	Social conflicts among communities might arise in case of bias selection of beneficiaries.	To avoid social conflicts, the locals will be involved through GRM.
	The local communities should be engaged in project activities. If merit is not followed, the project could have negative impacts. Marginalized and vulnerable people should be involved in project to get maximum benefits.	GRM is proposed in ESMF
	Due to the project, the socioeconomic condition of the locals will improve and the crime rate would decrease.	Noted
Water	Water shortage is the main problem in Balochistan. In most of the selected districts, the water level is very low (1,300-1,400 ft.). Water intense activities should be avoided as water table in Balochistan is very low. Before implementing any Project activity, availability of water should be considered.	Concern noted and will be addressed in ESMF. Site specific water conservation plans will be prepared.
	There would be no negative impact other than the water depletion.	
	Drip irrigation techniques should be adapted to conserve water.	
Women Empowerment	What is the mechanism to empower women?	The project will have interventions specifically focused towards women.
	Women are working in education and health sector as a teachers, nurses and LHV's in Balochistan. The minimum purchasing cost of	

Sectors/ Phase	Concerns Raised	Response Provided
	the embroidery stuff should be fixed so the women can get a good price of their items.	
	Mulberry trees are good to produce silk and can be a good investment. In some areas of Balochistan, women are engaged in this business. Raw material of silk is on high demand. Sericulture and apiculture activities can be introduced under the Project.	It is demand driven project. The project will finance activities proposed by the communities.
	New machines should be provided to the women of the communities in handicraft sector.	
	Women focused training should be provided to enable them to improve livelihood and promote women empowerment. Women can be benefitted in traditional embroidery and sewing and they can promote their own business at small scale.	Training programs will be proposed in the project
General	Prior to start the Project, the Project Proponent should create awareness among the people and identify the investment sectors.	Prior to the start of Project and during the implementation, consultations with communities will be conducted.
	In the Project, mobilization cost is very high and it would not be beneficial for Balochistan. During the last ten years, so much expenditure has been made in the name of mobilization in different projects by different NGOs/organizations. Prior to start the work, the Project Proponent should make sure that there should be no repetition of effort.	Communicated to the developers.
	All the refugees shall be leaving the country within according to ISPR. Therefore, the funds should not be allocated for them.	The project will mainly benefit host communities
	It is important to focus on transparency and right selection of deprived communities.	Noted
	Educated and credible people should be involved in the project. The final decision should be made after the consultation with the stakeholders.	Stakeholder consultation framework is proposed on ESMF
	Female staff should be engaged to facilitate the women and their mobility should be ensured by providing vehicles.	Project will hire female staff
	The project would contribute in improving the livelihood of communities by creating jobs.	Yes
	The project should be implemented both in urban and rural areas. In rural areas, people can increase agriculture, livestock etc. whereas in urban areas, they can be supported in various skills and trades such as mobile repairing, welding, plumbing etc.	Project is designed for both urban and rural areas
	The project should not be just on the papers as it would create disturbance and negativity in the area. Local people should be engaged in decision making to reduce the negative impact of the project.	Stakeholder consultation framework is proposed in ESMF
	Human capital can be enhanced through customized technical and vocational trainings.	Noted.
	The project will not only improve the livelihood of inhabitant but it will also contribute towards balanced ecosystem and safe environment. In addition, it will promote peace and stability in the conflict affected areas, especially among youth.	Environmental and ecological safeguards are proposed in ESMF.

Sectors/ Phase	Concerns Raised	Response Provided
Design	<p>Social Sector Investment Fund has been formulated in Balochistan therefore it can be used to channel the investment in the form of grants. Balochistan Livelihood and Entrepreneurship Project shall not consider the option of grants</p> <p>Proposed Business Model for the BLEP project is to provide interest free loans to the individual borrowers who aim to establish a business in the sectors identified. The provision of 20% service charges shall be included and the loan shall be returned through easy installment plan.</p> <p>The businesses shall be strictly structured to use environment friendly technology.</p> <p>BLEP should have provision of loan for NGOs to achieve the project objectives. NGOs can play a vital role in community empowerment. The loans can be interest based.</p> <p>There are risks involved in the business enterprises; therefore, contingencies shall be included in the budget. If the loans are not returned, the organizations and individuals shall be declared as defaulters to ensure the sustainability of the sub-projects.</p> <p>The BLEP should extend loans to individual, private businesses (start up) or any new idea proposed by them and also to individual NGO.</p> <p>Yunus Social business Fund can be a useful input for the design of the project. Yunus Social Fund has been established, registered and coordinating with the yunus social business fund in Dhaka and with professor yunus to roll it out in Balochistan soon.</p> <p>Yunus Center with the objectives to promote livelihood through social entrepreneurship and businesses is already established in university of Balochistan. Inclusion of Yunus Center can play an effective role in the proposed project</p> <p>The communities are already being sensitized with sufficient funds disbursed in the past and districts remain below the poverty line. Therefore component on social mobilization shall be excluded.</p> <p>The bank shall analyze the organizations that had been engaged for social mobilization prior to disbursement of loans. It will provide a clear picture of mismanagement of community mobilization funds.</p> <p>Rural Support Program Network Model for community enablement through grants shall be highly discouraged. The model has failed to address the poverty in Balochistan and the results are indicated in the Multidimensional Poverty Index recently published by Planning Commission of Pakistan.</p> <p>Role of civil society organization should be provided in the institutional arrangements.</p> <p>Intermediate body shall be included for the disbursement of loans e.g. civil society organization which will lend to the individuals for business enterprises</p>	Concerns will be considered at planning stage

6 Impact Assessment and Recommended Mitigation Measures

This Chapter assesses the potential impacts of the proposed project on environment and the social fabric of the project districts. It also provides generic mitigation measures to minimize if not eliminate the potentially negative impacts, in order to ensure that the interventions under the proposed project do not cause environmental and/or social impacts beyond the acceptable level.

6.1 Analysis of Project Alternatives

6.1.1 No Project Option

No implementation or “no project option” prevents the execution of the project and limits socioeconomic development. For BLEP, this option is not considered because of the following reasons:

- BLEP is a social reform project likely to deliver major benefits to the communities in selected districts through creation of employment opportunities, improvement in economy, reduction in poverty and enhancement of technical skills. According to recent study by Planning Commission of Pakistan, most of the project districts are below the poverty line, therefore, concept of addressing poverty while ensuring environmental and social wellbeing will be practiced by the project.
- The environmental and social impacts associated to the BLEP are addressed at an early stage using ESMF. This ESMF will identify the areas of ecological and social sensitivity according to national and international applicable laws and provide a framework of execution for each sector.

For each sector business enterprises, screening will be carried out using screening instruments. No project option will come into effect in following cases:

- If the business enterprises fall in the negative list of activities provided in this ESMF
- If the business enterprises will have irreversible/ drastic/ un-avoidable environmental and social impacts on the physical, socioeconomic and ecological environment, and social fabric of the project area (eight districts)

Practising no project option would require disallowing further development and further financing on the potential business enterprise. Environmental and Social screening documents are included in following sections for further necessary guidance on sustainable execution of the project.

6.1.2 Project Site Alternatives

Alternative project sites will be considered when the business enterprises location is sensitive to environmental and/or social impacts associated due to execution of project intervention in five sectors including Agriculture, Livestock, Mines and Minerals, Handicrafts and Industries, Ecotourism and Forestry. BLEP will be executed in select

eight districts; however, the sites will be identified for the project activities by community groups. An analysis of alternative sites for each sub-project will be included at the sub-project screening level. The concept of the project is to provide loans and trainings to the communities to develop social business enterprises and livelihood skills. An analysis of activities and locations for enterprise development will be included in the project design and implementation through agreements with the loan borrower. The activities and locations for the business enterprises will be selected considering the following:

1. The activity does not fall in the negative list of activities provided in this ESMF
2. Location is at a reasonable distance from Protected Areas;
3. Location is at a safe distance from identified sensitive habitats and natural habitats of animals;
4. Location is at a safe distance from designated Forests;
5. Activity will not result in any resettlement or displacement (economic and physical) of the local communities. All land requirements will be fulfilled through Voluntary Land Donation
6. Activity will not adversely impact vulnerable groups such as women, children and disabled etc.
7. Activity will not result in child labour, forced labour or gender based violence (GBV)
8. Location is away from Protected Sites of Archaeological and cultural significance;
9. Location is well connected to the larger region and close to amenities in previously developed areas for business already served by infrastructure;
10. Location and activity have access to pollution management;
11. Location is way from conflict zones of the project districts.

6.1.3 Project Technology Alternatives

Alternative technology is referred to technologies that are more environmentally friendly than the functionally equivalent technologies dominant in current practice. While choosing the technology options (if any) for business enterprises in each sector, the borrower will be bound to consider environmental friendly technology. Environmentally Sound Technologies (ESTs) criteria will be used to select technologies that have the:

- potential for significantly improved environmental performance relative to other technologies;
- are less polluting;
- use resources in a sustainable manner;
- recycle more of their wastes and products; and

- Handle all residual wastes in a more environmentally acceptable way than the technologies for which they are substitutes³⁸⁹.

ESTs are not just individual technologies. They can also be defined as total systems that include know-how, procedures, goods and services, and equipment, as well as organizational and managerial procedures for promoting environmental sustainability. An analysis of various technology options will be included in the project design and implementation through agreements with the loan borrowers.

6.2 Environmental Code of Practices

Environmental Code of Practices (ECoPs) is to address less significant environmental impacts and all general construction related impacts of the proposed project implementation. The ECoPs provide guidelines for best operating practices and environmental management guidelines to be followed by the contractors for sustainable management of all environmental issues. The ECoPs are ECP 1: Waste Management; ECP 2: Fuels and Hazardous Substances Management; ECP 3: Water Resources Management; ECP 4: Drainage Management; ECP 5: Soil Quality Management; ECP 6: Erosion and Sediment Control; ECP 7: Borrow Areas Development & Operation; ECP 8: Air Quality Management; ECP 9: Noise and Vibration Management; ECP 10: Protection of Flora; ECP 11: Protection of Fauna; ECP 12: Protection of Fisheries; ECP 13: Road Transport and Road Traffic Management; ECP 14: Construction Camp Management; ECP 15: Cultural and Religious Issues; ECP 16: Workers Health and Safety is provided below. Detailed ECoPs can be found in **Annexure 3**.

6.3 BLEP Components Environmental and Social Impacts Assessment

6.3.1 Component 1: Economic Mobilisation

The objective of this component is to support both the refugees and host communities in rural and peri-urban areas of selected districts to collectively access technical and financial resources. The rationale of this component is two-fold: i) support rural communities in taking advantage of the 'collective' in an inclusive manner to mobilise resources at the local level; and, ii) building capacity of existing and potential entrepreneurs to better manage and utilize resources for productive purposes in a transparent manner. As this component will be focusing on mobilizing communities building capacities, there are no perceived environmental and social impacts.

6.3.2 Component 2: Promoting Enterprise Development and Livelihoods

Through this component, BLEP will support small and medium scale livelihood activities and skills development in the following five sectors.

1. Agriculture
2. Livestock

³⁸⁹ UNEP International Environmental Technology Centre

3. Industries and Handicrafts
4. Mines and Minerals
5. Eco-Tourism and Forestry

The overall environmental and social impacts of each sector can be mitigated with the implementation arrangement focusing measures that reduce the impact to as low as possible. The Project will establish around 30 Business Development Facilities (BDF) costing no more than \$300,000. These will be storage facilities, water resource management, facilitation of transport logistics, among others. This chapter will outline the environmental and social impacts associated with each of the five sectors and corresponding mitigation measures. The chapter will also identify under which circumstances sub-projects may require the preparation of an IEE under Schedule I of the Environment Protection Act (EPA). In addition, there will be some small scale construction activities (e.g. sheds, stores etc.) having low scale, reversible environmental and social impacts. Potential environmental impacts to be generated during the construction include dust and air emissions, water quality impacts due to discharge of untreated sewage, solid waste management impacts related to the construction materials and noise impacts due to the construction activities. The impacts associated with construction of facilities will be temporary and confined to construction duration. The social impacts include community and workers health and safety, social conflicts and nuisance. The mitigation measures associated with these impacts during potential development in each sector is given in following sections.

6.3.3 Component 3 Project Management

This component will support the Planning and Development Department (P&DD) within Government of Balochistan to finance project management and related activities including: i) staffing and training of Project Management Unit (PMU), capacity building in the areas of financial management, procurement and technical skills, equipment, operating costs and external and internal audits; ii) establishment of Management Information System (MIS) and effective evaluation system encompassing a baseline survey, rapid evaluations during the lifetime of the project and end line assessment of achievements; and, iii) technical assistance as required including provision for Third Party Monitoring. There are no perceived environmental and social impacts associated with component 3.

6.4 Positive Impacts

The Balochistan Livelihoods and Entrepreneurship Project is likely to have positive environmental and social impacts. It will generate employment opportunities for the residing communities through enterprise support by providing loans, improving value chains and providing trainings, resulting in economic benefits and development at the community and district levels. The support will be provided based on the demand of the community to ensure sustainability and increased positive social impacts. Improved productivity (particularly benefiting women) generated by improvement in agriculture, livestock and handicrafts sector will enable the communities on sustainable livelihoods. The project may also support activities in the eco-tourism and forestry sector, which can make an important contribution to the development of the local economy based on environmentally and socially sound principles. Economic development in handicrafts

production may also result in sustaining and increasing participation in cultural traditions.

The project will support expansion and modification of value chains with a focus on introducing new technologies, leading to sustainable economic and community development. The project will generate employment and associated benefits during the entire implementation stage. BLEP directly responds to the World Bank Group's (WBG) twin goals of ending extreme poverty and promoting shared prosperity through interventions in agricultural, livestock, handicrafts, mines and mineral, tourism and forestry sector thus, improving the status of the poor and vulnerable population.

6.5 Agriculture Sector Impacts and Mitigation Measures

6.5.1 Anticipated Environmental Impacts and Mitigation Measures

In comparison with other sector of the economy, agriculture sector is not a major contributor to environmental pollution. The overall environmental and social impacts of the sector, if not mitigated are considered moderate. The potential impacts associated with agriculture sector primarily include soil degradation and contamination, loss of soil nutrient, crop residue and associated solid waste generation, increase in water usage and pollution, pesticides contamination, use of fertilizers, loss of Biodiversity and Ecosystems, use of Genetically Modified Crops (GM Crops), increased energy use, decline in air quality and rise in Greenhouse Gas (GHG) Emissions.

The exact typology of sub-projects to be financed in the agriculture sector are not known. However, it is expected that the sub-projects may include extension services, kitchen gardening, introduction of techniques to improve productivity and water resource management. While the impact of each sub-project may be minimal, several agriculture sub-projects in one area may have an accumulated moderate impact if not mitigated.

At the initial stages of project implementation, **Agriculture Sector Environmental and Social Management Plan** will be prepared once the typology of sub-projects has been determined. This sectoral ESMP will address specific impacts and suggest management plans for mitigation.

Sub-projects may include the establishment of Business Development Facilities (BDF) on water resource management for agriculture. The establishment of a BDF on water resource management may require the preparation of an IEE instrument under Schedule I of the EPA (see Annexure 1 for IEE requirements under EPA). Preparation of an IEE will be required under the following circumstances:

- Dams and reservoirs with storage volume less than 50 million cubic meters of surface area less than 8 square kilometres
- Irrigation and drainage projects serving less than 15,000 hectares
- Small-scale irrigation systems with total cost less than Rs.50 million
- Water supply schemes and treatment plants with total cost less than Rs.25 million

In such a case, the preparation of the IEE will be the responsibility of the Project Management Unit.

6.5.1.1 Impact on Soil and Mitigation

The terrain of the project districts is very diverse with highlands, lowlands and plain areas. Soil characteristics and texture show significant variation in components including sand silt and clay, similarly variable pH levels of <0.01 to <0.05. Machinery and earth works for the agricultural activities may cause physical degradation of soil whereas, insufficient or inappropriate use of mineral fertilizers and pesticides can results in chemical degradation of soil and loss of nutrients. Similarly soil erosion may result from poor crop cover after land preparation and lack of soil conservation structures on sloping land planted with annual crops. Following Mitigation measures are proposed to reduce and mitigate the impacts:

1. **Soil Management Plans** will be prepared as part of the Agriculture Sector ESMP for sub-project types that may cause extensive soil erosion and contamination. Crop varieties suited or adapted to the local climate and soil conditions will be identified and cultivated. In addition, good agronomic practices³⁹⁰ will be adopted to optimize crop productivity;
2. Appropriate land preparation machinery will be used at the right time of year to minimize soil compaction, damage, or disturbance;
3. Communication system will be established with the help of meteorological department to provide farmers with regular weather forecast of the area through mobile phones. Soil preparation, sowing and harvest shall be scheduled when weather conditions pose the lowest risk of causing environmental damage;
4. Crop rotation will be practiced to maintain the soil coverage during the year;
5. Use of erosion management practices (e.g., contour and strip planting, terracing, discontinuous trenching, intercropping with trees, and grass barriers) will be ensured in sloping areas;
6. Soil organic matter and soil water-holding capacity will be replenished with the use of organic fertilizers by recycling and/or incorporating organic materials (e.g., crop residues, compost, and manures) whenever available and economically viable.
7. **Farmers Training Program** will be launched on nutrient management with the help of agricultural practice manuals and agriculture department.³⁹¹ It will be ensured that all personnel are trained in and use appropriate management procedures for the storage, handling, and application of all types of fertilizers, including organic wastes.
8. Pesticides banned under national law (hazardous substance rules 2000) will be prohibited. However use of pesticides in Annexes A and B of the Stockholm Convention, WHO Hazard Class, and classified as Persistent Organic Pollutants

³⁹⁰ Food and Agriculture Organization (FAO), Good Agricultural Practices Principles, (2007). Among others, good practices include those that select cultivars and varieties on an understanding of their characteristics, including response to sowing or planting time, productivity, quality, market acceptability and nutritional value, disease and stress

³⁹¹ FAO, Guidelines and Reference Material on Integrated Soil and Nutrient Management and Conservation for Farmer Field Schools, (Rome: FAO, 2000) <http://www.fao.org/docs/eims/upload/230157/misc27.pdf>.

(POPs) will be discouraged unless the project has appropriate controls established with respect to the manufacture, procurement, or distribution and/or use of these chemicals. Preferentially, use selective pesticides with low environmental impact quotient (EIQ) where appropriate, rather than broad-spectrum products, to minimize impacts on non-target species.

9. In case of synthetic pesticides, **Integrated Pest Management Plan** will be prepared as part of the Agriculture Sector ESMP. Use of natural pesticides and fertilizers, crop rotation will be encouraged. Use of pesticides will be minimized by implementing a pest and disease early-warning system, by using biological pest and disease control methods, and by implementing control measures before outbreaks require large-scale control.
10. Agriculture Management and Skills Training (AMST) will be established with the Agriculture Extension Department to help farmers in the area.

6.5.1.2 Impacts on Water Resources and Mitigation

Water availability is poor in the project area, specifically in Chagai, Nushki, Killa Abdullah and Mastung districts. The data on water quality is of all the districts show bacterial contamination even at the depth 500 feet. However, the communities are using both ground and surface water for agriculture. Most of the districts are facing drought and rain water is hardly available. The agricultural activities may further increase the water usage imposing strain on water resources of the area. Introduction of water intensive crops and technologies may result in excessive extraction of groundwater and further straining the existing water resources. Excessive use of synthetic pesticides and fertilizers may result in the contamination of water resources. Following Mitigation measures are proposed to reduce and mitigate the impacts:

1. In case of a Business Development Facility (BDF) on water resource management is being established, an IEE under Schedule I will be prepared by PMU in the following cases:
 - Dams and reservoirs with storage volume less than 50 million cubic meters of surface area less than 8 square kilometres
 - Irrigation and drainage projects serving less than 15,000 hectares
 - Small-scale irrigation systems with total cost less than Rs.50 million
 - Water supply schemes and treatment plants with total cost less than Rs.25 million
2. **Regulatory Regime for Water Use and Water Management Plan** will be prepared as part of the Agriculture Sector ESMP. These plans will be prepared for each district with poor water availability. These must be relevant, effective, accurate and in accordance with local customs and site requirements. Sprinkler and drip irrigation system will be installed for crops and fruit orchards;
3. Testing on water quantity and quality will be done for sectoral ESMP
4. It will be ensured that water intensive crops are not introduced through project supported activities;

5. Use of irrigation techniques will be based on water availability and type of crop in each district. Rain or water irrigation requirements of the crop shall be based on internationally recognized guidelines, while recognizing seasonal variations and regional norms.
6. Retention of water through rain water harvesting techniques will be ensured in districts with rainwater and snow e.g established water flow from roads and paths toward crops, thus storing water in the soil and reducing the effect of short dry spells. Storing runoff from rainy periods for use during dry spells by using tanks, ponds, cisterns, and earth dams. Maintaining protective vegetation in drainage systems to reduce canal bank scouring and slow runoff.
7. Site specific water efficiency and conservation measures and technologies such as micro-spraying, drippers, and fertigation will be encouraged. Irrigation system, as well as its associated channels and infrastructure will be regularly maintained.
8. Meteorological data on rainfall shall be used to manage irrigation timing. Avoid evaporation by irrigating at night. Reduce evapotranspiration by using shelterbelts, tunnels and windbreaks.
9. Seepage losses in supply channels shall be reduced by lining them or using closed pipes. Employ a cutback furrow/channel irrigation technique, slowing or stopping irrigation water well before the water reaches the end of the furrow and discharges.
10. If herbicides are used, ensure they are applied at the appropriate time of year to most effectively control undesirable vegetation and reduce water consumption.
11. Avoid over-irrigation, which may result in the leaching of nutrients and contaminants. Soil degradation prevention practices and control at source on use of pesticides and fertilizers are provided in earlier section on the "impacts on soil and mitigation".

6.5.1.3 Impacts of Solid Waste and Mitigation

Agricultural activities generate crop residue, which may be burnt for disposal. Crop residues are valuable sources of organic matter and carbon and can lead to the extended release of nutrients during the development (growth) phase of the next crop cycle. Residues (leaf material, roots, and other plant parts) can be recycled beneficially to improve soil organic matter and soil structure, as well as to reduce soil loss. Under extension services, farmers may be advised to use pesticides. Hazardous wastes such as waste pesticides or pesticide containers if disposed improperly or reused may contribute to adverse health, safety, or environmental impacts. Prevention and control strategies for potential risks and impacts include the following:

1. Residues and other organic materials should be recycled by leaving the materials on site or through composting (and spreading);
2. It is recommended to use crop residues for other beneficial purposes —such as animal feed, bedding, or thatching—when leaving residues in the field is neither practical nor appropriate;
3. Agriculture Sector ESMP will provide guidelines for farmers for storing, handling and disposal pesticide containers and unwanted pesticides as hazardous wastes in

accordance with the General EHS Guidelines and Food and Agriculture Organization (FAO) Guidelines for the Management of Small Quantities of Unwanted and Obsolete Pesticides.³⁹²

6.5.1.4 Impacts on Ecosystem Biodiversity and Mitigation

The project districts have ecological sensitive areas, rangelands, protected areas and notified forest identified in the baseline. There are 9 protected sites in project districts which include 1 national park, 3 wildlife sanctuaries, 5 game reserves and 1 private game reserve covering an area of 582,601 hectares. Total notified forest area in project districts is **397,014** acres. Agricultural activities have the potential to have a direct and indirect impact on biodiversity and ecosystems. Key direct impacts relate to habitat conversion or degradation, water usage, pollution, introduction of invasive species, inappropriate cultivation techniques, and quality and or availability of priority ecosystem services. Indirect impacts relate to in-migration, and induced changes to access for traditional land uses (including hunting, fishing, and recreation). Scaling-up or introducing new agriculture activities may result in the conversion of Forests and Protected Areas, destroying habitats for plants and animals of ecological importance. Use of wood and forest products illegally or unsustainably sourced from Protected Areas and Notified Forests may result in the degradation of these areas and loss of critical habitat for plants and animals. Impacts and associated mitigation activities related to biodiversity and ecosystems are primarily specific to the crops, techniques, and existing land use context at any specific site. However general mitigation measures are proposed as follows:

1. Ensure agricultural activities are not conducted in Protected Areas or Notified Forests
2. As part of Agriculture Sector ESMP, prepare biodiversity/ecosystem management plan in case sub-projects are in proximity to sensitive areas;
3. Ensure wood and forest products for use in agriculture are not sourced from Protected Areas and Notified Forests;
4. Conversion of existing critical or natural habitats for agriculture should be avoided wherever possible and planting on modified habitats or degraded lands should be promoted;
5. Introduction of invasive species and genetically modified plants will be avoided.

6.5.1.5 Impacts on Ambient Air Quality and Mitigation

Changes in air quality impact both people and environment. Air quality data of the project districts is not available. Atmospheric emissions from agriculture sector are primarily associated with emissions of combustion by-products including carbon dioxide (CO₂), sulfur dioxide (SO₂), nitrogen oxide (NO_x), and particulate matter (PM) resulting from the operation of mechanized equipment or from combustion of by-products from the disposal or destruction of crop residues or processing by-products.

³⁹² FAO, Guidelines for the Management of Small Quantities of Unwanted and Obsolete Pesticides, (Rome: UNEP, WHO, and FAO, 1999) http://www.fao.org/fileadmin/user_upload/obsolete_pesticides/docs/small_qties.pdf. In the event that disposal of pesticides involves overseas shipments, the project must ensure compliance with the country's commitments under the Stockholm, Rotterdam, and Basel Conventions.

Cumulative agricultural activities in project districts are not likely to generate large amounts of atmospheric emission. The primary source of GHG emissions during site preparation for annual crops will be carbon dioxide associated with land use change. During the production phase, emissions are NO_x from fertilizer use and CO₂ from on farm fuel and electricity use. Following Mitigations are proposed:

1. Where feasible, use of renewable energy (e.g., solar, wind, biofuel) for crop drying or to power irrigation pumps shall be practiced;
2. Open burning for land preparation, weed control, and post-harvest treatments will be avoided. Where burning is unavoidable, potential impacts should be identified and weather conditions monitored to schedule burning in an effort to minimize impacts.
3. Burning of pesticide-treated agricultural wastes and by-products (e.g., pesticide containers) will be prohibited to avoid unintended emissions of persistent organic pollutants (POPs).

6.5.2 Anticipated Social Impacts and Mitigation Measures

Social impacts related to the agricultural sector include child labor, physical, operational and workplace hazards to farmers including accidental injuries and fire hazards, exposure to organic dust, combustible dust and silo safety, biological and chemical hazards. Hazardous products, including pesticides, may affect community health in the same ways that they affect individual operators: through dermal contact, ingestion, or inhalation of harmful products or chemicals. There may be instances where there is use of child labour or forced labour for agricultural activities. Social and gender conflict may arise due to increase in economic conditions and shared land holdings. Law and order situation is weak in the project district. It is expected that the project interventions requiring participation from non-locals may cause conflicts. Similarly, the communities are dependent on notables and leaders in each district for decision support. Working with the communities without engaging notables may have implications. However, as BLEP is likely to improve the livelihoods and income generation in the local communities, there will be significant positive social impacts.

6.5.2.1 Impacts on Community and Farmers Health and Safety & Mitigation

Community health and safety issues due to agricultural activities may arise due to land use changes causing loss of buffer zones between communities and agricultural fields. The degradation of natural resources may result in health-related risks and impacts. Threshing, handling, and storage of grain by farmers may generate potentially high concentrations of organic dust, including particles from grain, fungi, and bacteria, as well as inorganic material. Hazardous products, including pesticides, may affect community health in the same ways that they affect individual operators; through dermal contact, ingestion, or inhalation of harmful products or chemicals.

The bordering districts of the project area have been notorious for poppy production for illegal drugs. Cultivation of crops such as poppy and other prohibited varieties will lead to legal and social ramifications. Exploitative forms of forced labour can negatively impact the social fabric of the community. Harmful child labour is likely to interfere with the child's education; be harmful to the child's health or physical, mental, spiritual,

moral, or social development. There are a number of historical cultural sites identified in the baseline in the project districts, activities in or near a site that has historic, or cultural importance may offend the local population, damage local social fabric, and generate conflict with the local community. Gender issues may arise due to improvement in socioeconomic conditions of the area. Each population centre in districts is led by a tribal leader. If the project activities are against the local norms, it may fail to proceed. In case of land acquisition, conflict may arise. Following mitigation measures are proposed:

1. Risk of exposure to hazardous products can be minimized by ensuring that guidelines for the safe transportation, storage, handling, usage, and disposal of those products are followed;
2. Do not use pesticides, chemicals, or manure if meteorological conditions (strong winds, storms, rainfall etc.) are likely to result in adverse impacts in surrounding communities;
3. Use of biological or lower-risk-profile products shall be practiced, if available. Respect pre-harvest intervals and post-harvest withholding periods for products that have been treated with pesticides to avoid unacceptable levels of residues.³⁹³
4. Do not store or transport pesticides and fertilizers with food (human or livestock foodstuffs) or beverages (including drinking water). Ensure that animals and unauthorized people are not present in the areas where pesticides or other potentially harmful products are handled, stored, or applied. Store manure and crop protection products as far away from dwellings as possible, and use measures, such as covering the manure, to reduce odours and atmospheric emissions.
5. **Farmers and Community Health and Safety Plan** will be prepared as part of Agriculture Sector ESMP;
6. Encourage the use of natural pesticides and ensure use of masks and protective gear while spraying pesticides, fertilizers and hazardous substance (if any);
1. Cultivation of crops such as poppy and other prohibited varieties listed in the Negative List of Activities (**Annexure 7**) shall be prohibited;
2. It should be ensured that there is no use of exploitative forms of forced labour. Labour for the business enterprise will be hired according to labour law and the contractual binding will be added in the agreement documentation.
3. The project will ensure that no child under the age of 18 is hired to work in hazardous conditions (pesticide sprays, industrial activity); and no child under that age of 15 is hired to do any sort of physical exertive labour (general farm labour); and no child under the age of 12 is hired for ANY type of labour;
4. Activities near identified sites of cultural or religion importance will be disallowed. In case of such an intervention, **PCR Management Plan** will be prepared and followed;

³⁹³ Examples of potentially applicable pesticide tolerance requirements include the FAO/WHO (1962–2005) Codex Alimentarius' Maximum Residue Limits in Foods and 40 CFR Part 180, Tolerances and Exemptions from Tolerances for Pesticide Chemicals in Food, the latter of which applies to crops sold in the United States

5. Local labour will be hired. Local norms and customs shall be practiced for social interaction;
6. Voluntary land donations will be encouraged. For any land acquisition, the enterprise developer will ensure the identification of land in un-disputed area not requiring resettlement. In case of any resettlement, resettlement policy framework will be followed for the preparation of site specific **Resettlement Action Plan**.
7. The district/village/community leaders and notables will be engaged at the start of the project with agreements on various aspects of implementation of project activities;
8. Local facilitators and Grievance Committee will resolve conflicts using grievance redressal mechanism given in chapter 9;
10. Notables and leaders of the communities shall be engaged prior to start of project implementation through stakeholder engagement framework provided in chapter 5;
11. The local police and law enforce agencies shall be engaged prior to the start of the project activities.

6.6 Livestock Sector Impacts and Mitigation Measures

This section describes the potential environmental and social impacts associated with the livestock sector. The impacts associated with construction are covered in the relevant separate sections.

6.6.1 Anticipated Environmental Impacts and Mitigation Measures

The exact typology of sub-projects to be financed in the livestock sector are not known. However, it is expected that the sub-projects may include extension services, introduction of techniques to improve productivity and aquaponics.

At the initial stages of project implementation, **Livestock Sector Environmental and Social Management Plan** will be prepared once the typology of sub-projects has been determined. This sectoral ESMP will address specific impacts and suggest management plans for mitigation.

Potential environmental impacts of Livestock sector are low. Cumulative potential impacts of many livestock sub-projects in one area may include primarily include, loss of habitat, solid waste and hazardous waste generation, animal/vector-borne diseases.

6.6.1.1 Impacts on Land/ Ecosystems and Mitigation

There are a number of notified forest, protected areas and rangelands identified in the baseline of the project districts. Overgrazing of rangelands and pastures can lead to land degradation. Livestock feed sourcing or production in Protected Areas and Notified Forests can lead to deforestation or destruction of grasslands. In addition, overgrazing may contribute to soil losses because of severe erosion, and a reduction in soil productivity caused by alteration of the vegetation composition and associated organisms in rangelands. Livestock access to surface water may also destroy riparian

habitat. Management techniques discussed below are recommended to mitigate potential ecological impacts:

1. Before converting land for livestock production ensure that it is not located in a Protected Area or Notified Forest;
2. Where possible carry out a carrying capacity assessment of rangelands
3. It should be ensured that any natural or modified habitat to be converted for livestock production does not contain critical habitat, including known habitat of critically endangered or endangered species, or important wildlife breeding, feeding, and staging areas;
4. The use of fences, buffer strips or other physical barriers shall be practiced to prevent animals' access to surface water bodies;
5. Ensure livestock feed is not sourced or produced from Protected Areas and Notified Forest.
6. Open grazing and browsing of livestock shall only be allowed using the principles of Rotational Grazing. This is an exercise to divide rangeland/grasslands/pastures into rotation zones based on abundance of vegetation, to restrict overuse of one particular rangeland/grassland/pasture.
7. Livestock trails shall be used for movement to reduce soil trampling and gully formation / erosion near streams;
8. There should be minimum disturbance to surrounding areas when managing livestock.

6.6.1.2 Impacts on Water Resources and Mitigation

There are a limited number of surface water and ground water resources in the project area identified in the baseline. Water availability is a concern especially in Chagai, Nuski, Killa Abdullah and Mastung. Livestock with access to rivers, lakes and other natural water sources may cause environmental damage by contaminating the water with animal waste causing eutrophication, destroying riparian habitat, and eroding the stream banks. Waste from livestock has the potential to contaminate surface water and groundwater with nutrients, ammonia, sediment, pesticides, pathogens and feed additives, such as heavy metals, hormones, and antibiotics.³⁹⁴ Following mitigation measures are proposed:

1. Formulate **Water Management Plans** for districts with water shortages will be prepared as part of the Livestock Sector ESMP to regulate water use;
2. Reduce water use and spills from animal watering by preventing overflow of watering devices and using calibrated, well-maintained self-watering devices;
3. Potential sources of contamination from livestock waste must be located at a safe distance from groundwater and freshwater sources (hand pumps, wells, ponds, karez etc.)

³⁹⁴ Forty percent of antibiotics manufactured are fed to livestock as growth enhancers (Reynolds 2003).

4. Install vegetative filters to trap sediment and surface water diversions to direct clean runoff around areas containing waste;
5. Implement buffer zones to surface water bodies, avoiding land spreading of manure within these areas.

6.6.1.3 Impact on Solid Waste and Mitigation

The total livestock holding of the project districts is 6,679,615 with the largest proportion of sheep and goats (approx. 45 %) followed by cattle, Asses, Camels, Buffaloes, Horses and Mules. Increase in livestock production may increase solid waste generated which includes waste feed, animal waste, and carcasses. Other wastes include various kinds of packaging (e.g. for feed and pesticides), unused / spoilt medications, used cleaning materials, and sludge from wastewater treatment if present (which may contain residual amounts of growth enhancers and antibiotics, among other hazardous constituents). Animal waste also contain large amount of nitrogen, phosphorus and other substances which may result in air emissions of ammonia and other gases and may pose a potential risk of contamination to surface or groundwater resources through leaching and runoff. Manure also contains disease-causing agents such as bacteria, pathogens, viruses, parasites, and prions which may also potentially affect soil, water, and plant resources (for human, livestock, or wildlife consumption). Most of the animal waste is generated at housing, feeding, and watering locations. Solid waste and runoff from livestock can contaminate groundwater and freshwater sources. Following mitigations are proposed:

1. **Solid Waste Management Plan** for livestock waste will be prepared as part of the Livestock Sector ESMP to guide farmers on properly managing animal waste. Plan will take into account the potentially harmful constituents of this waste including potential phytotoxicity levels, potential concentration of hazardous substances in soils and vegetation, as well as nutrient limits and groundwater pollutant limits;
2. Where no authorized collection of carcasses is available, on-site burial may be one of the only viable alternatives, if allowed by the competent authorities. Whether onsite or offsite, the burial area have stable, low-permeability soils with sufficient physical separation from houses and water resources to avoid contamination by vapours or leachate from buried, decaying materials.
3. Design, construct, operate, and maintain waste management and storage facilities to contain all manure, litter, and process wastewater including runoff and direct precipitation;
4. Ensure that manure is applied to agricultural land only during periods that are appropriate for its use as plant nutrient (generally just before the start of the growing season).

6.6.1.4 Impacts on Ambient Air Quality and Mitigation

Ammonia gas and other sources of odour are generated primarily from animal manure and can be released directly into the atmosphere at any stage of the manure handling process, including through ventilation of buildings and manure storage areas. Ammonia gas deposition into surface waters may contribute to their eutrophication. The following mitigation measures are proposed:

1. Consider the siting of new facilities taking into account distances to neighbours and the propagation of odours;
2. Control the temperature, humidity, and other environmental factors of manure storage to reduce emissions;
3. Consider composting of manure to reduce odour emissions;
4. Consider installing biogas plants to make use of waste for power production;

6.6.1.5 Impact of Hazardous Substances and Mitigation

Pesticides may be applied directly to livestock or to structures (e.g. barns and housing units), and to control pests (e.g. parasites and vectors) using dipping vats, sprayers, and forgers. Pesticides and their degradation products may enter groundwater and surface water and may cause health hazards for humans as well as adverse ecological impacts. Following mitigation measures are proposed:

1. If pesticides are used, formulate **Integrated Pest Management Plan** as part of the Livestock Sector ESMP to evaluate the need and effectiveness of the pesticide, as well as potential environmental impacts, to ensure that the pesticide with the least adverse impact is selected (e.g. no leachable pesticides).
2. Avoid the use of pesticides that fall under national Hazardous Substances Rules 2000, World Health Organization Recommended Classification of Pesticides by Hazard Classes 1a and 1b, Pesticides by Hazard Class II and Annexes A and B of the Stockholm Convention, except under the conditions noted in the convention.

6.6.2 Anticipated Social Impacts and Mitigation Measures

6.6.2.1 Community and Beneficiary Health and Safety & Mitigation

Social impacts related to livestock based enterprises include physical injury, biological infections and chemical hazards, use of exploitative labour and child labour, and spread of diseases. Workers may be exposed to disease-agents such as bacteria, fungi, mites, and viruses transmitted from live animals, manure, animal carcasses, and parasites. It can potentially infect communities on or in the vicinity of the farm. Potential exposures to chemicals used include dermal contact and inhalation during their preparation and application as well as ingestion due to consumption of contaminated water.

Child labour if employed by livestock enterprises is likely to interfere with the child's education; be harmful to the child's health or physical, mental, spiritual, moral, or social development. Exploitative forms of forced labor can negatively impact the social fabric of the community. Activities in or near a site that has historic, religious or cultural importance may offend the local population, damage local social fabric, and generate conflict with the local community. Sale of meat, milk and milk products produced using booster medicines (hormones, etc.) may have a negative impact on the health of consumers. Sale of unhygienic meat and milk may have a negative impact on the health of consumers. Law and order situation is weak in the project district. It is expected that the project interventions requiring participation from non-local may cause conflicts. Similarly, the community are dependent on notables and leaders in each district for decision support. Engaging the communities without engaging notables may have implications.

Mitigation measures include:

1. Prepare **Occupational and Community Health and Safety Plan** as part of the Livestock Sector ESMP;
2. Safety equipment and trainings shall be given to workers on physical hazards associated with livestock sector;
3. Facilities involved in livestock production should use a veterinary service on an annual or more frequent basis to review and assess the health of the stock and employees' competence and training;
4. Inform workers of potential risks of exposure to biological agents and provide training in recognizing and mitigating those risks;
5. Chemical exposures to the communities and workers should be prevented and controlled;
6. Recommended vaccination protocols, parasite controls; and medication shall be used;
7. Provision of safe drinking water shall be made available to the workers;
8. If antibiotics are recommended, apply approved antibiotics in strict accordance with the manufacturer's and qualified professional's instructions to ensure responsible and correct use;
9. Prohibit the use of banned booster medicines to improve meat growth and milk production
10. Ensure production and storage areas for milk and meat follow quality standards used by Balochistan Food Authority;
11. It should be ensured that there is no use of exploitative forms of forced labour. Labour for the business enterprise will be hired according to labour law and the contractual binding will be added in the agreement documentation.
12. The project will ensure that no child under the age of 18 is hired to work in hazardous conditions (pesticide sprays, industrial activity); and no child under that age of 15 is hired to do any sort of physical exertive labour (general farm labour, mechanic, etc.); and no child under the age of 12 is hired for ANY type of labour;
13. Activities near identified sites of cultural or religion importance will be disallowed. In case of such an intervention, **PCR Management Plan** will be prepared and followed;
14. Local labour will be hired. Local norms and customs shall be practiced for social interaction;
15. Voluntary land donations will be encouraged. For any land acquisition, the enterprise developer will ensure the identification of land in un-disputed area not requiring resettlement. In case of any resettlement, resettlement policy framework will be followed for the preparation of site specific **Resettlement Action Plan**.

16. The district/village/community leaders and notables will be engaged at the start of the project with agreements on various aspects of implementation of project activities through stakeholder disclosure and engagement framework;
17. Local facilitators and Grievance Committee will resolve conflicts using grievance redressal mechanism given in chapter 9;
18. Site specific **Grievance Redress Mechanism** will be made in case of conflict zones and security sensitive areas;
19. Notables and leaders of the communities shall be engaged prior to start of project implementation through stakeholder engagement framework provided in chapter 5;
20. The local police and law enforcement agencies shall be engaged prior to the start of the project activities;
21. For project staff and interventions, locals shall be given preferences.

6.6.2.2 Impacts on Animal Health and Mitigation

Inadequate methods of livestock rearing and irregular vaccinations may result in a loss for the beneficiary. Animal disease-causing agents can spread rapidly, especially in intensive livestock operations. Animal diseases can enter a facility with new animals, on equipment, and on people. Some diseases can weaken or kill large numbers of animals at an infected facility. In some cases, the only remedy available to an operation is to sacrifice an entire group of animals to prevent the spread of the disease to other parts of the facility or to other facilities. The procedures to protect against the spread of animal diseases will depend on the type of animal at a facility, the way the diseases of concern spread to and infect animals, and the vulnerability of the animals to each specific disease. The key to developing adequate disease-prevention procedures is to find accurate information about animal diseases and how to prevent them. Some of the recommended general types of management methods to reduce the potential for the spread of animal pathogens include the following:

1. Ensure preparation of an animal vaccination and veterinary care plan for the livestock
2. Provide linkages with Livestock Extension Department to learn about better practices for livestock rearing
3. Control farm animals, equipment, personnel, and wild or domestic animals entering the facility;
4. Sanitize animal housing areas;
5. Identify and segregate sick animals and develop management procedures for adequate removal and disposal of dead animals.

6.7 Mines and Minerals Sector Impacts and Mitigation Measures

The exact typology of sub-projects has not been determined. However, the project is not likely to finance the mining of minerals in the project districts. It will potentially finance the storage/ processing/ trading of gems and other mined products for ornamental

purpose. The environmental impact of the processing of gems and mined products is low, while the social impact is moderate. The activities will improve the social wellbeing of the communities by generating income sources. To ensure environmental safeguards, mined products shall be procured from the contractors following obligatory environmental and social safeguards through contractual binding. The environmental and social impacts associated with construction of facilities, if any, are covered in the relevant separate section.

At the initial stages of project implementation, **Mines and Minerals Sector Environmental and Social Management Plan** will be prepared once the typology of sub-projects has been determined. This sectoral ESMP will address specific impacts and suggest management plans for mitigation.

6.7.1 Anticipated Environmental Impacts and Mitigation Measures

Gemstones/ mined products processing does not generally involve the use of toxic or hazardous chemicals and do not generate high impact on environments. The processes will vary from product to product. Generally, the processing of gemstones that occur as distinct crystals, consists of hand sorting with the aid of the visual characteristics of the gems (fluorescence, shine, and colour). Typically, no equipment is used in this process. Processing may also involve chipping (the breaking of crystals along natural fractures into smaller more marketable sized pieces) and sorting (involving grading according to appropriate criteria). There may be use of some machinery and chemicals in the processing gemstones. The project districts located at remote areas where the waste disposal and collection system is not operational therefore waste from processing may contaminate groundwater and freshwater sources. Water quantity and quality is poor in the project area, specifically in Chagai, Nushki and Mastung districts. Introduction of water intensive production processes and excessive extraction of groundwater will further stress the already stressed water resources. Following mitigation measures are proposed:

1. Ensure there is no use or production of hazardous chemicals and substances listed on the Negative List of Activities and hazardous chemicals Rules 2000 (**Annexure 7**);
2. Ensure mines and minerals used are not sourced from mines operating illegally in protected areas or notified forests;
3. The waste water from the process (if any) shall not contaminate the existing groundwater and freshwater sources;
4. Use of water efficiency ,conservation measures and technologies shall be ensured;
5. Use of passive solar design to take advantage of natural sunlight and airflow is recommended for electricity;
6. The solid waste shall be handled and disposed off in a proper manner.

6.7.2 Anticipated Social Impacts and Mitigation Measures

Social impacts may include physical injuries and chemical hazards. Processing of mined product may result in accidents from improper use of tools and negative impacts on the

health of beneficiaries and workers. Improper use of tools and chemicals can result in accidents and health problems. Poor ventilation, especially in production areas can result in health problems (respiratory, eye, etc.) for beneficiaries and workers. Access and quality of health facilities is limited in the project districts. Production or trade of illegal substances will result in legal and social ramifications. Harmful child labour and exploitative forms of forced labour can negatively impact the social fabric of the community. Activities in or near a site that has historic, religious or cultural importance may offend the local population, damage local social fabric, and generate conflict with the local Community. Hazardous liquid and solid waste may impact the health of beneficiaries, workers and the community. Following Mitigation measures are proposed:

1. Activities listed in the Negative List of Activities (**Annexure 7**) shall be prohibited;
2. Prepare **Occupational and Community Health and Safety Plan** as part of sectoral ESMP;
3. It should be ensured that there is no use of exploitative forms of forced labour. Labour for the business enterprise will be hired according to labour law and the contractual binding will be added in the agreement documentation.
4. The project will ensure that no child under the age of 18 is hired to work in hazardous conditions (pesticide sprays, industrial activity); and no child under that age of 15 is hired to do any sort of physical exertive labour (general farm labour, mechanic, etc.); and no child under the age of 12 is hired for ANY type of labour;
5. Activities near identified sites of cultural or religion importance will be disallowed. In case of such an intervention, **PCR Management Plan** will be prepared and followed;
6. Use of personal protective equipment (PPE) such as gloves, masks, goggles, helmets etc. shall be ensured by beneficiaries and while processing workers ;
7. Hazardous liquid and solid waste should be stored separately out of reach of children and be delivered to disposal sites in secure containers for safe disposal
8. Proper ventilation channels shall be installed when working with minerals in confined spaces (e.g. open window, open door, exhaust fan, etc.).
9. The working environment should be monitored for occupational hazards relevant to the specific project. Monitoring should be designed and implemented by accredited professionals;
10. Training should be given to employees on the recognition and prevention of occupational hazards
11. Local labour will be hired. Local norms and customs shall be practiced for social interaction;
12. Voluntary land donations will be encouraged. For any land acquisition, the enterprise developer will ensure the identification of land in un-disputed area not requiring resettlement. In case of any resettlement, resettlement policy framework will be followed for the preparation of site specific **Resettlement Action Plan**.

13. The district/village/community leaders and notables will be engaged at the start of the project with agreements on various aspects of implementation of project activities;
14. Local facilitators and Grievance Committee will be engaged to resolve conflicts using grievance redressal mechanism given in chapter 9;
15. Site specific Grievance Redress Mechanism will be made in case of conflict zones and security sensitive areas;
16. Notables and leaders of the communities shall be engaged prior to start of project implementation through stakeholder engagement framework provided in chapter 5;
17. The local police and law enforce agencies shall be engaged prior to the start of the project activities;
18. For project staff and interventions, locals shall be given preferences.

6.8 Handicrafts and Small Industries Sector Impacts and Mitigation Measures

The exact typology of sub-projects is not determined. Possible activities will include the production of handicrafts including carpets, shoes, clothes, wall hangings and decorative items. Small industries and handicrafts industry does not pose significant environmental and social impacts.

At the initial stages of project implementation, **Handicrafts and Small Industries Sector Environmental and Social Management Plan** will be prepared once the typology of sub-projects has been determined. This sectoral ESMP will address specific impacts and suggest management plans for mitigation.

6.8.1 Anticipated Environmental Impacts and Mitigation Measures

The project is not likely to finance large scale industrial facilities. Small scale home based business are likely to generate liquid and solid waste. The impacts associated with the handicraft and small industries include effluent from production processes using chemicals and dyes that may contaminate groundwater and freshwater sources. Use of illegal wood for handicrafts sourced from Protected Areas and Notified Forests may result in the degradation of these areas and loss of critical habitat for plants and animals. Water quantity and quality is poor in the project area, specifically in Chagai, Nushki and Mastung districts. Use of water in the processing may stress the water resources of the area. The handicrafts industry makes use of energy intensive machinery.

Following mitigation measures are proposed:

1. Ensure there is no use or production of hazardous chemicals and substances listed on the Negative List of Activities (**Annexure 7**);
2. Ensure all effluents containing chemicals and dyes are disposed in a safe manner according to NEQS;

3. Ensure all groundwater and freshwater sources are located at a safe distance from potential sources of contamination;
4. Prohibit illegal extraction of wood from Protected Areas and Notified Forests;
5. Ensure sustainable harvesting of medicinal plants and non-timber forest products (NTFPs)
6. Ensure the use of water efficiency and conservation measures and technologies;
7. Awareness trainings will be conducted for the dangers of using toxic substances or chemicals in handicraft production and use of natural resources in the production of handicrafts.
8. Use of passive solar design to take advantage of natural sunlight and airflow is recommended for electricity;
9. Solid waste shall be handled and disposed off in a proper manner.

6.8.2 Anticipated Social Impacts and Mitigation Measures

Social impacts may include physical injuries and chemical hazards. Handicraft production may result in accidents from improper use of tools and negative impacts on the health of beneficiaries and workers. Improper use of tools and chemicals can result in accidents and health problems. Poor ventilation, especially production areas can result in health problems (respiratory, eye, etc.) for beneficiaries and workers. Hazardous liquid and solid waste (e.g. mercury, biomedical, heavy metals, CFLs (energy savers), tires, oil, batteries, paint, solvents, acidic solutions, etc.) may impact the health of beneficiaries, workers and the community. Use of hazardous dyes and chemicals may cause health problems for the beneficiary, workers and the community. Improper use of tools and chemicals (polishes, paints, thinners etc.) can result in accidents and health problems. Access and quality of health facilities is limited in the project districts. Production or trade of illegal substances will result in legal and social ramifications. Harmful child labour and exploitative forms of forced labour can negatively impact the social fabric of the community. Activities in or near a site that has historic, religious or cultural importance may offend the local population, damage local social fabric, and generate conflict with the local Community. Hazardous liquid and solid waste may impact the health of beneficiaries, workers and the community.

Following mitigation measures are proposed:

1. The activities listed in the Negative List of Activities (**Annexure 7**) shall be forbidden;
2. Prepare **Occupational and Community Health And Safety Plan** as part of the sectoral ESMP;
3. It should be ensured that there is no use of exploitative forms of forced labour. Labour for the business enterprise will be hired according to labour law and the contractual binding will be added in the agreement documentation.
4. The project will ensure that no child under the age of 18 is hired to work in hazardous conditions (pesticide sprays, industrial activity); and no child under that age of 15 is hired to do any sort of physical exertive labour (general farm

labour, mechanic, etc.); and no child under the age of 12 is hired for ANY type of labour;

5. Hazardous liquid and solid waste (e.g. mercury, biomedical, heavy metals, CFLs (energy savers), tires, oil, batteries, paint, solvents, acidic solutions, etc.) shall be stored separately out of reach of children and delivered to disposal sites in secure containers for safe disposal;
6. Hazardous chemicals and dyes shall be stored separately in secure labelled containers out of reach of public and specifically children;
7. Tools and machinery shall be stored out of reach of children;
8. Access to health facilities close to the sites shall be identified to the communities and workers in case of an emergency;
9. Ensure use of personal protective equipment (PPE) such as gloves, masks, goggles, helmets, welding glasses/shields by beneficiary and workers while handling chemical polishes, dyes paints and machinery
10. Ensure installation of proper ventilation channels in workshops and when working with chemicals, paints, and polishes in confined spaces (e.g. open window, open door, exhaust fan, etc.).
11. Activities near identified sites of cultural or religion importance will be disallowed. In case of such an intervention, **PCR Management Plan** will be prepared and followed;
12. The working environment should be monitored for occupational hazards relevant to the specific project. Monitoring should be designed and implemented by accredited professionals;
13. Training should be given to employees on the recognition and prevention of occupational hazards specifically applicable to work in remote areas such as safety with respect to wildlife; protection against the elements; thermal stress; adaptation and disease exposure;
14. Local labour will be hired. Local norms and customs shall be practiced for social interaction;
15. Voluntary land donations will be encouraged. For any land acquisition, the enterprise developer will ensure the identification of land in un-disputed area not requiring resettlement. In case of any resettlement, resettlement policy framework will be followed for the preparation of site specific **Resettlement Action Plan**.
16. The district/village/community leaders and notables will be engaged at the start of the project with agreements on various aspects of implementation of project activities;
17. Local facilitators and Grievance Committee will be engaged to resolve conflicts using grievance redressal mechanism given in chapter 9;
18. Site specific **Grievance Redress Mechanism** will be made in case of conflict zones and security sensitive areas;

19. Notables and leaders of the communities shall be engaged prior to start of project implementation through stakeholder engagement framework provided in chapter 5;
20. The local police and law enforce agencies shall be engaged prior to the start of the project activities;
21. For project staff and interventions, locals shall be given preferences.

6.9 Eco-Tourism Sector Impacts and Mitigation Measures

The exact typology of sub-projects is not known at ESMF stage. Possible activities that the project may finance include homestays, small restaurants, kiosks etc. The environmental and social impacts of tourism and hospitality facilities construction is provided in the subsequent sections. This section covers the impacts associated with tourism activities.

At the initial stages of project implementation, **Eco-Tourism Sector Environmental and Social Management Plan** will be prepared once the typology of sub-projects has been determined. This sectoral ESMP will address specific impacts and suggest management plans for mitigation.

6.9.1 Anticipated Environmental Impacts and Mitigation Measures

The project is likely to finance tourism development in project districts. Environmental impacts include increase in resource consumption, air emissions, wastewater, hazardous materials, solid waste, biodiversity degradation and noise. Tourism industry consumes large amount of water, electricity and other utilities. Availability of water and quality is poor in the project districts, specifically in Chagai, Nushki and Mastung. Therefore, increase in resource consumption of project districts may have major impacts. Extensive tourism activities inside Protected Areas and Notified Forests may result in degradation of the natural habitat. Tourists may generate up to twice as much solid waste per capita as local residents, resulting in increased stress on local waste management infrastructure. Hazardous wastes may include batteries, solvents, paints, antifouling agents, and some packaging wastes. Wastewater generated by tourism and hospitality facilities include domestic sewage from toilet, laundry, housekeeping, and kitchen. In the absence of the solid and liquid waste management in the project districts, the impact is high. The tourist activities may also increase the noise levels of the project districts for a short duration. Following mitigations are proposed:

1. Negative list of activities provided as **Annexure 7** must be disallowed;
2. The tourism actives shall not be allowed in protected areas and notified Forest without **Site Specific Biodiversity/Ecosystem Management Plan**;
3. Timely identification of sensitive habitats and implementation of protective measures (e.g. buffer zones or corridors) to maintain links between natural systems within and beyond the site, limiting habitat fragmentation.
4. All tourism activities must be designed to ensure that there is minimal to no impact on the natural habitat. This will include controlling emissions, safe disposal of wastewater and safe disposal of solid waste.
5. Introduction of new invasive species for landscaping shall be disallowed;

6. Onsite management includes segregation of at source solid waste, use of biological waste for composting and manure formation. Minimising the use of plastic. Hazardous wastes may need to be exported to other locations for disposal. Enterprise specific **Solid Waste Management Plan** shall be prepared for the interventions generating high amounts of solid waste and use of hazardous substances;
7. Ensure that the location for ecotourism shall have access to waste water sanitation and disposal system. In absence of such systems onsite biological treatment should be used to enable reuse of grey water, which can be reused for irrigating grounds or other non-potable purposes. Grey water from bathrooms, sinks, and kitchens has limited toxicity, requiring minimal treatment, has good reuse potential, and can be easily separated into one stream. Wastewater streams used for this purpose should be carefully monitored to ensure that grey water is not mixed with other sewage resulting in potentially hazardous situations;
8. Plants selection for landscaping shall base on its water requirements. Water intensive species shall not be planted;
9. Water saving equipment shall be used in at water consumption sources along with installation of water meters;
10. Encourage use of passive solar design to take advantage of natural sunlight and airflow;
11. Incase of proposed tourism interventions requiring large amounts of water, ensure the use of water efficiency and conservation measures and technologies through site specific **Water Conservation Plan** if required.

6.9.2 Anticipated Social Impacts and Mitigation Measures

Law and order situation is weak in the project districts. It is expected that the project interventions requiring participation from non-local may cause conflicts. Similarly, the community are dependent on notables and leaders in each district for decision support. Engaging the communities without engaging notables may have implications. Harmful child labour and exploitative forms of forced labour can negatively impact the social fabric of the community. Activities in or near a site that has historic, religious or cultural importance may offend the local population, damage local social fabric, and generate conflict with the local Community.

The following mitigation measures are proposed:

1. Activities listed in the Negative List of Activities (**Annexure 7**) shall be prohibited;
2. It should be ensured that there is no use of exploitative forms of forced labour. Labour for the business enterprise will be hired according to labour law and the contractual binding will be added in the agreement documentation.
3. The project will ensure that no child under the age of 18 is hired to work in hazardous conditions (pesticide sprays, industrial activity); and no child under that age of 15 is hired to do any sort of physical exertive labour

- (general farm labour, mechanic, etc.); and no child under the age of 12 is hired for ANY type of labour;
4. Activities near identified sites of cultural or religion importance will be disallowed. In case of such an intervention, **PCR Management Plan** will be prepared and followed;
 5. The working environment should be monitored for occupational hazards relevant to the specific project. Monitoring should be designed and implemented by accredited professionals;
 6. Training should be given to employees on the recognition and prevention of occupational hazards specifically applicable to work in remote areas such as safety with respect to wildlife; protection against the elements; thermal stress; adaptation and disease exposure;
 7. Local labour will be hired. Local norms and customs shall be practiced for social interaction;
 8. Voluntary land donations will be encouraged. For any land acquisition, the enterprise developer will ensure the identification of land in un-disputed area not requiring resettlement. In case of any resettlement, resettlement policy framework will be followed for the preparation of site specific **Resettlement Action Plan**.
 9. The district/village/community leaders and notables will be engaged at the start of the project with agreements on various aspects of implementation of project activities;
 10. Local facilitators and Grievance Committee will resolve conflicts using grievance redressal mechanism given in chapter 9;
 11. Site specific **Grievance Redress Mechanism** will be made in case of conflict zones and security sensitive areas;
 12. Notables and leaders of the communities shall be engaged prior to start of project implementation through stakeholder engagement framework provided in chapter 5;
 13. The local police and law enforce agencies shall be engaged prior to the start of the project activities;
 14. For project staff and interventions, locals shall be given preference.

6.10 Forestry Sector Impacts and Mitigation Measures

6.10.1 Anticipated Environmental Impacts and Mitigation Measures

The exact typology of sub-projects is not known at the ESMF stage. Possible activities that may be financed include use of medicinal plants or non-timber forest products (NTFPs) from forests and rangelands in project districts. There are 9 protected sites in project districts which include 1 national park, 3 wildlife sanctuaries, 5 game reserves and 1 private game reserve covering an area of 582,601 hectares. Total notified forest area in project districts is 397,014 acres. Environmental issues associated with use of forest and rangeland products primarily include habitat alteration and loss of biodiversity, changes in water quality, soil productivity and, use of pesticides. Planting

invasive species of shrubs and trees may result in loss of natural habitats for local plants and animals. Use of wood illegally or unsustainably sourced from Protected Areas and Notified Forests may result in the degradation of these areas and loss of critical habitat for plants and animals. Over-harvesting of medicinal plants and non-timber forest products (NTFPs) such as Chilgoza in Zhob and Sherani may result in ecological degradation or depletion of water resources.

At the initial stages of project implementation, **Forestry Sector Environmental and Social Management Plan** will be prepared once the typology of sub-projects has been determined. This sectoral ESMP will address specific impacts and suggest management plans for mitigation.

Following mitigation measures are proposed:

1. In case the project is using products from notified forests and protected areas, a site-specific **Ecosystem/Biodiversity/Forest Management Plan** will be prepared to avoid over-harvesting and degradation;
2. Prohibit illegal extraction of wood from Protected Areas and Notified Forests;
3. Natural vegetation should not be treated with pesticides;
4. Sustainable harvesting of medicinal plants and non-timber forest products (NTFPs) shall be ensured;
5. Biodiversity reserves should be created, managed, and monitored in each district to protect critical natural habitat, and high conservation value forest as representative samples of existing ecosystems in their natural state;
6. Ensure local species are used in case of plantation. Intentional or accidental introduction of alien, or non-native, species of flora and fauna into areas shall be disallowed;
7. Natural vegetation in the forest area should be managed to ensure a variety of successional stages and roadside strips should be left vegetated with natural cover;

6.10.2 Anticipated Social Impacts and Mitigation Measures

The social impacts envisaged with forestry sector primarily include occupational and community health and safety. There are number of sites of historic, religious or cultural importance in the project districts. Project activities near those sites may offend the local population, damage local social fabric, and generate conflict among the local community. Harmful child labour and exploitative forms of forced labour can negatively impact the social fabric of the community.

Following mitigation measures are proposed:

1. Activities listed in the Negative List of Activities (**Annexure 7**) shall be prohibited.
2. The business enterprise owner shall train labour on the safe use of cutting equipment, including work group coordination and safety measures. Equipment should be properly maintained and include all necessary safety devices (e.g. blade

- guards on saws). Workers should be required to use, all necessary personal protective equipment (e.g. gloves, footwear, protective clothing, helmets). On-site first aid equipment and trained personnel should be available, as well as procedures for emergency;
3. Wildfires caused by natural events (e.g. lightning strikes) or human error are one of the most significant risks. Workers shall not smoke and use fire in or near the forests. Fire response and management plans should be prepared with the participation of local authorities and potentially affected communities;
 4. It should be ensured that there is no use of exploitative forms of forced labour. Labour for the business enterprise will be hired according to labour law and the contractual binding will be added in the agreement documentation.
 5. The project will ensure that no child under the age of 18 is hired to work in hazardous conditions (pesticide sprays, industrial activity); and no child under that age of 15 is hired to do any sort of physical exertive labour (general farm labour, mechanic, etc.); and no child under the age of 12 is hired for ANY type of labour;
 6. Activities near identified sites of cultural or religion importance will be disallowed. In case of such an intervention, **PCR Management Plan** will be prepared and followed;
 7. The district/village/community leaders and notables will be engaged at the start of the project with agreements on various aspects of implementation of project activities;
 8. Local facilitators and Grievance Committee will resolve conflicts using grievance redressal mechanism given in chapter 9;
 9. Site specific **Grievance Redress Mechanism** will be made part of ESMP in case of conflict zones and security sensitive areas;
 10. Notables and leaders of the communities shall be engaged prior to start of project implementation through stakeholder engagement framework provided in chapter 5;
 11. The local police and law enforcement agencies shall be engaged prior to the start of the project activities;
 12. For project staff and interventions, locals shall be given preferences.
 13. Voluntary land donations will be encouraged. For any land acquisition, the enterprise developer will ensure the identification of land in un-disputed area not requiring resettlement. In case of any resettlement, resettlement policy framework will be followed for the preparation of site specific **Resettlement Action Plan**.

6.11 Construction Activities Impact Assessment and Mitigation

6.11.1 Anticipated Environmental Impacts and Mitigation Measures

There are numerous sources of water, soil and air pollution at construction sites. However, the project is not likely to finance large scale construction activities. Small scale construction including sheds and storage facilities may be supported that will have

low impacts on the environment if mitigation plan is followed. The impacts may include effluent and liquid waste from diesel and other fossil fuels, paints, solvents, and toxic chemicals. Similarly there may be gaseous and dust emissions from construction equipment and civil works, as well as noise and solid waste generation.

6.11.1.1 Impacts on Atmospheric Environment and Mitigation

During the construction period, pollutants on ambient air mainly include dusts from surface levelling at the construction site, movements of transportation vehicles and their loading/unloading of construction materials, earthwork by construction machinery and temporary piling of spoils. Engineering dusts may increase dust content in the air at certain parts within the area, and may also be transported to neighbouring areas by wind, thus affecting livelihood and working of employees of adjacent entities. In addition, exhaust gas from engineering machinery and transportation vehicles may increase concentration of carbon monoxide and other pollutants in the air of certain parts of the area; furthermore, as such exhaust gas is emitted at intervals, it will completely disappear upon completion of the proposed project. Measures to be taken during the construction period include the following:

1. Enclosure walls with a height of 2 meters or above will be built around the construction site in areas close to the residing communities;
2. On-site mixing shall be carried out at enclosed space, cement, lime powder and other construction materials shall be stored at storage yard or tightly covered. Discrete materials such as sand and soil must be covered, the building materials to be loaded, unloaded and/or handled shall be covered, closed or sprinkled with water, and none of them shall be thrown or spread into the air;
3. A water channel with its width at 3.5 meter, length at 10 meters and depth at 0.2 meter shall be made at the exit to and from the construction site, in which crushed stones with a diameter at 50 millimetres will be laid, so as to reduce the amount of earth on tires of vehicle to and from the construction site;
4. Materials to be transported shall be covered or transported by enclosed vehicles, routes of transportation vehicles shall avoid residential areas and other environmentally sensitive areas, and vehicle speed shall also be limited;
5. The equipment and construction vehicles shall be regularly maintained to avoid gas emissions;
6. The construction vehicles vehicular exhaust emissions shall comply with EURO II standards adopted by Balochistan EPA.

All the above measures will help to reduce impacts of dust during construction period to its minimum.

6.11.1.2 Impacts on Water and Mitigation Measures

Wastewater from the proposed project during construction period mainly includes cleaning water for engineering equipment and water from concrete mixing. Water availability is limited in all project districts and Mastung, Chagai, Noshki are suffering from water scarcity. During the construction period, on-site activities and workers may

use certain amount domestic wastewater, of which the main part is washing water and construction water.

Following mitigations are proposed:

1. Formulate site specific **water conservation plans** to regulate water use;
2. A simplified sedimentation tank shall be built on the construction site, through which, the construction wastewater may be collected and settled, and then be used for site sprinkling to reduce fugitive dust;
3. The domestic wastewater will be discharged into the existing wastewater pipelines or septic tanks;
4. Since the some of the project districts are located in remote areas, septic tanks can be coupled with other onsite wastewater treatment units such as bio filters or aerobic systems involving artificially forced aeration incase of large amount of waste.

6.11.1.3 Impacts on Acoustic Environment and Mitigation

Noise sources during the construction period are mainly engineering machinery and vehicles, and they are featured by their intermittent nature with mobility and high noise level (which is 80~90 dB (A) from a distance of 5 meters). The impact is moderate in case the construction is carried out near residential or ecologically sensitive areas. However, construction noise is temporary and will disappear upon completion of the proposed project. The following measures are to be taken during construction work to reduce impacts on acoustic environment:

1. Construction contractor shall use advanced equipment and technologies of low noise, and this requirement shall be a principal criterion for selecting contractors during the bidding process;
2. The use of high noise generating equipment such as a percussion piling machine or pneumatic hammer shall be prohibited;
3. The working time and construction schedule must be arranged rationally, construction contractor shall make reasonable arrangements to ensure machinery is not used during night time near residential areas.

6.11.1.4 Impact of Solid Waste and Mitigation

During the construction period, small scale construction may generate construction refuse/waste from the civil works and domestic waste from the workers. Small scale construction activities are not expected to generate high amounts of solid waste. Project areas where solid waste disposal system is not in place will suffer a higher impact. Hazardous material if used requires segregation and proper disposal. The following mitigation measures are proposed:

1. Prepare a site specific **Solid Waste Management and Disposal Plan**;
2. All solid waste from the construction site must be transported to a specified outside storage yard for construction refuse for centralized disposal.

3. Domestic waste of will be collected and transported to designated landfill site for land-filling. Ensure domestic waste is not burnt or dumped into forests, streams or natural water bodies.
4. In absence of disposal system, the waste will be segregated at source into kitchen waste, plastic, glass, paper and metal separately. The kitchen waste will be composted with and all other dry waste shall be given to the local dealers for reuse and recycling;
5. Construction workers will be trained on segregation, storage and disposal of domestic and hazardous waste;
6. Hazardous material listed in the World Bank Guidelines and Hazardous Substances Rules 2000 shall not be used in construction. It will be ensured through contractual binding with the construction contractor.

6.11.1.5 Impacts of Resource Consumption and Mitigation

Increase in Water /Electricity/ Fuel Consumption due to construction work may limit the available resources in the area. Following mitigation measures are proposed:

1. Site specific **Water Conservation Plan** will be prepared if the water consumption is high during construction. The plan must include installation of water meters and Eco-cabins (e.g. rainwater harvesting, waterless or low or sensor activated flush urinals, water saving devices [taps] and effluent management system). On-site batching using closed-loop water recycling. Onsite treatment and reuse of water for civil works. A new product by the name of 'Dry fix' can be used as an alternative for cement. This adhesive product is environment-friendly and sustainable solution that gives same results without using water in construction.
2. The workers will be trained on sustainable use of water.
3. Visual inspections will be carried out for leaks and water usage.
4. Installation of solar panels is recommended for electricity considering terrain of Balochistan;
5. Provision of Low Voltage electrical appliances will be made in procurement procedures;
6. Prepare site and enterprise specific energy and water conservation plan for construction be made part of contract with enterprise owner.

6.11.1.6 Impact of Natural Hazards and Mitigation

The project districts are prone to natural disasters including earthquakes. Following mitigation measures are proposed:

1. Building Codes of Pakistan with Seismic provision and international best practices will be made part of construction contractors agreement for designing buildings according to earthquake zones;
2. Provision of structural engineering measures like shear walls, braced frames, moment resisting frames, and diaphragms, base isolation, energy dissipating

devices and bracing of non-structural components are proposed. Simpler techniques include avoiding soft stories and bolting the sill plate of houses to the foundation;

3. Inclusion of emergency exits and alarm system in building design.

6.11.1.7 Impacts on Biodiversity/Ecosystem and Mitigation

None of the sub-project activities will be carried out within the sensitive areas as per Balochistan Environmental Protection Act and Forest and Wildlife Protection Act. The business enterprises are expected to be established at a reasonable distance from critical and sensitive receptors including reserve forests, national parks, wetlands, marine protected areas and wildlife sanctuaries. Similarly, sites will be selected away from existing sensitive habitats present within the project districts that support endangered mammal or bird species. However development may require tree cutting and vegetative clearing therefore mitigations are proposed to avoid maximum damage. The following mitigation measures are proposed:

1. Ensure construction activities do not take place in protected areas or notified forests;
2. Ensure wood used for construction has not been sourced illegally from protected areas and notified forests;
3. Incorporate technical design measures to minimize unnecessary removal of trees and vegetative cover;
4. Compensatory planting of eight trees shall be practices against each fallen tree of similar floral function;
5. Use of invasive/ exotic species for shall be disallowed and native species will be recommended for plantation.
6. Locations for business enterprises shall be selected outside/at a reasonable distance from the environmentally sensitive areas and archeological/cultural and religious sites of importance.

6.11.2 Anticipated Social Impacts and Mitigation Measures

6.11.2.1 Impacts on Workers Health and Safety and Mitigation

Use of heavy machinery and handling of hazardous waste and chemicals may result in health impacts for workers on the construction site. Physical injuries and biological hazards related to the site may impact the workers. The following mitigation measures are proposed:

1. Health kits, first aid kits and emergency medical supplies shall be made available at construction sites. Location of the nearest medical facility to the construction sites and accessibility will be ensured;
2. Provision of clean drinking water will be ensured for the construction crew;
3. Hygiene inspections will be carried out to avoid disease epidemic;

4. Construction Contractor must prepare a site specific **Fire Safety Plan**. In case of unlikely incidents (fire, vandalism) the workers will be evacuated and emergency response and law enforcement agencies will be engaged;
5. Fire extinguisher will be placed at construction sites, whereas, fire safety and emergency response trainings will be conducted ;
6. Construction contractor must prepare a **Workers Occupational Health and Safety Plan**
7. The construction crew shall be trained on important aspects of workplace/confined space safety;
8. Construction machinery operators and drivers shall be trained to avoid associated accidents with inappropriate use of machines and vehicles;
9. Flammables and other toxic materials will be marked and stored at secured location;
10. First aid kits will be kept at randomly moving vehicles\machinery;
11. Provision of useful Personal Protective Equipment (PPE) will be given to workers such as gloves, vests, hard-hats, masks etc.

6.11.2.2 Impacts on Community Health and Safety and Mitigation

The construction activities and movement of heavy vehicles may impact public safety. Similarly, emissions and noise from the construction site may impact the residing communities. There might be conflict among the workers and residing communities. Child labour is likely to interfere with the child's education; be harmful to the child's health or physical, mental, spiritual, moral, or social development. Exploitative forms of forced labor can negatively impact the social fabric of the community. Activities in or near a site that has historic, religious or cultural importance may offend the local population, damage local social fabric, and generate conflict with the local community. Following mitigation measures are proposed:

1. Train drivers operating heavy vehicles on road and pedestrian safety. Set appropriate speed limits to avoid accidents;
2. If schools, hospital and communities are present near construction sites, use of heavy vehicles on public roads will be avoided. Provision of alternate routes for use by the public;
3. Placement of construction and diversion signage, particularly at urban areas and at sensitive/accident-prone spots, in accordance to a **Public Safety Plan**;
4. Local labour will be hired. Local norms and customs shall be practiced for social interaction;
5. Prepare **Site Specific Occupational and Community Health and Safety Plan** shall be prepared;
6. It should be ensured that there is no use of exploitative forms of forced labour. Labour for the business enterprise will be hired according to labour law and the contractual binding will be added in the agreement documentation.

7. The project will ensure that no child under the age of 18 is hired to work in hazardous conditions (pesticide sprays, industrial activity); and no child under that age of 15 is hired to do any sort of physical exertive labour (general farm labour, mechanic, etc.); and no child under the age of 12 is hired for ANY type of labour;
8. Notables and leaders of the communities shall be engaged prior to start of project implementation through stakeholder engagement framework provided in chapter 5;
9. The local police and law enforce agencies shall be engaged prior to the start of the project activities;
10. For project staff and interventions, locals shall be given preferences.

6.11.2.3 Impacts on Physical Cultural Resources and Mitigation

The location of construction activities may be close to religiously and culturally important sites. Excavation work during construction may result in the uncovering of ancient sites or artefacts. Following mitigation measures are proposed:

1. In case the project site is near identified sites of cultural or religion importance, a **PCR Management Plan** will be prepared and followed;
2. If graveyards/ cultural sites are present in the vicinity of construction site, the construction work will be rescheduled.
3. Construction staff will be trained and informed on identifying the evidence of archaeological/historic remains;
4. In case evidence of archaeological remains is found during construction activities, the actions listed below will be undertaken:
 - Excavation work in the vicinity of the find will be stopped;
 - Assistance will be sought from the nearest office of the Department of Archaeology and Museums to identify the remains;
 - If the department decides to salvage the find, the developer will provide assistance.

Detailed procedure for Archaeological Chance Finds is included in **Annexure 8**.

6.11.2.4 Impacts on Land Acquisition and Resettlement and Mitigation

In case community or private land is required for construction activities, all efforts will be taken to encourage voluntary land donation, in accordance with the Voluntary Land Donation Framework provided in Chapter 8. For any land acquisition, the enterprise developer will ensure the identification of land in un-disputed area not requiring resettlement. In case of any resettlement, Resettlement Policy Framework will be followed for the preparation of site specific **Resettlement Action Plan**. Detailed guidelines on Voluntary Land Donation mechanisms and preparation of Resettlement Action Plan are presented in the Resettlement Planning Framework in Chapter 8.

7 Framework for Anticipated Environmental and Social Impacts Mitigation and Management

This Chapter presents the Framework for managing and mitigating anticipated environmental and social impacts identified in the previous chapter.

7.1 Environmental and Social Screening and Safeguards Procedure

Implementation of environmental and social safeguard requirements in this ESMF will follow the following steps closely linking with activity planning, design and implementation.

Step 1: Screening of Business Enterprise according to general and relevant sectoral screening checklists

Step 2: Preparation and Submission of Environmental and Social Assessment/or sectoral Environmental and Social Management Plans

Step 3: Approval of Environmental and Social Assessment/or sectoral Environmental and Social Management Plans

Step 4: Compliance and Monitoring

7.2 Business Enterprise Environmental and Social Screening Process

According to the World Bank OP 4.01 all potential adverse impacts on human populations or environmentally important areas— including wetlands, forests, grasslands, and other natural habitats are site-specific; reversible; and mitigation measures can be readily designed. To ensure that all subprojects comply with this criterion, two levels of screening will be carried out for each subproject:

- General Screening against negative list of activities
- Screening for sector specific environmental and social impacts

In addition, if required, subprojects will be screened for involuntary resettlement, and physical cultural resources.

7.2.1 General Screening

General screening will be carried out ensure that the activities supported by BLEP do not have any irreversible environmental and social impacts during and after implementation. The activities must not be listed in the Negative List of Activities for BLEP (**Annexure 7**) and must not have any adverse impacts environmentally important areas or the social fabric of the communities. The subprojects will be screened using the General Screening Checklist given in **Annexure 9** which will screen to ensure the following:

1. The activity does not fall in the negative list of activities provided in this ESMF
2. Location is at a reasonable distance from Protected Areas;

3. Location is at a safe distance from identified sensitive habitats and natural habitats of animals;
4. Location is at a safe distance from designated Forests;
5. Activity will not result in any resettlement or displacement (economic and physical) of the local communities. All land requirements will be fulfilled through Voluntary Land Donation;
6. Activity will not adversely impact vulnerable groups such as women, children and disabled etc;
7. Activity will not result in child labour, forced labour or gender based violence (GBV);
8. Location is away from Protected Sites of Archaeological and cultural significance.

7.2.2 Sectoral Screening

While executing subprojects under BLEP, sectoral screening will be followed to activities to determine their environmental and social impacts and identify appropriate mitigation measures required in line with the World Bank Operational Policies. The following main sectors will be supported through this project; Agriculture; Livestock, Handicrafts & Small Industries, Mines & Minerals, Ecotourism and Forestry. Sectoral checklists outlining major anticipated impacts for each sector have been prepared and are provided in **Annexure 10**. These checklists will be used to guide the development of sector specific detailed Environmental and Social Management Plans (ESMPs) once the nature of activities to be supported has been identified.

Environmental and Social Management Plans (ESMPs) in accordance with World Bank OP 4.01 will need to be prepared by the Project Management and Implementation Unit for each sector and clearance obtained from the Bank prior to implementation of the project. The details of the Methodology and Structure of Environmental and Social Management Plans is given as **Annexure 11**. The ESMPs will examine the potential negative and positive environmental and social impacts and recommend any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental and social performance. The ESMPs will include a description of adverse effects, description of mitigation measures, description of monitoring program, responsibilities, capacity development and training, implementation schedule, cost estimates and sources of funds, and monitoring methods.

In case a subproject requires the preparation of an IEE instrument (please see section 6.5 and Annexure 1 for details) under EPA Schedule I, the IEE will be prepared by the PMIU and submitted to the relevant EPA for obtaining No Objection Certificate (NOC) before commencing the subprojects implementation, in line with the provincial regulatory requirements.

7.2.3 Land Acquisition and Resettlement Screening

If social impacts related to land, resettlement, livelihood, infrastructure damage are identified during screening process, the sub-projects will also be screened for need of land acquisition and resettlement using Involuntary Resettlement Screening Checklist

Attached as **Annexure 12**. All efforts will be taken to ensure that land required for the project is donated by the beneficiary individual/community through Voluntary Land Donation. However, if land acquisition is necessary, planning efforts will be carried out to develop mitigation measures in accordance with RPF presented in Chapter-8 of this ESMF.

7.2.4 Physical Cultural Resources Screening

All projects/subprojects will be screened for impacts on physical cultural resources and necessary mitigation measures. An outline of Physical Cultural Resource Management Framework providing a roadmap for preparing a Management Plan for the protection of cultural property and chance discovery of archaeological artefacts, unrecorded graveyards and burial sites are outlined in **Annexure 8**.

7.3 Planning Review and Approval

Project Management and Implementation Unit will be responsible for the screening and preparation of any safeguards instrument required in line with this Framework. The PMIU will submit the all sectoral and sub projects ESMPs and related safeguard documents to the World Bank prior to implementation of sub projects for approval and clearance to maintain the quality control and consistency. The implementation agencies will not approve the proposed operations until the required environmental and social safeguard action plans are cleared for compliance with the Framework by the World Bank.

The implementing agency will implement the projects in close coordination with the relevant line departments, local governments, and political agents. The implementing agency will be responsible for applying the safeguard screening and mitigation requirements to its own sub-projects. It should also be ensured that other necessary NOCs should also be obtained from all other departments before commencing works of any sub-project. This section defines the organizational roles and responsibilities of the key players in the project and provides a mechanism for implementation of ESMF.

7.4 Institutional Arrangements for the Project

The project will adopt a multi-tiered and private-sector orientated approach towards implementation.

7.4.1 Executing Agency

Balochistan Planning and Development Department P&DD is the executing agency of the project. The overall responsibility for ESMF implementation will be with P&DD through project management and implementation unit (PMIU). The PMIU will supervise the implementation of ESMF in order to facilitate the following tasks:

- Ensure availability of budget for all activities;
- Form PMIU and other necessary committees;
- Monitor the effectiveness of programs; and
- Cross-agency coordination.

7.4.2 Project Management and Implementation Unit (PMIU)

PMIU headed by a Project Director will be established P&DD will also provide oversight and coordination for the project, ensuring alignment to the priorities of the Government of Balochistan. The PMIU will be responsible to liaise with the World Bank, coordinate all project implementation and monitoring, convene meetings of the Project Steering Committee (PSC), manage implementation of technical assistance including procurement, prepare regular reports on project implementation status and achievements, consolidate plans and budget estimates, prepare periodic financial reports and audited financial statements of project expenditures, prepare budget execution reports and ensure quality and consistency of data collected through the Third Party Monitoring Agents.

7.4.3 Project Steering Committee

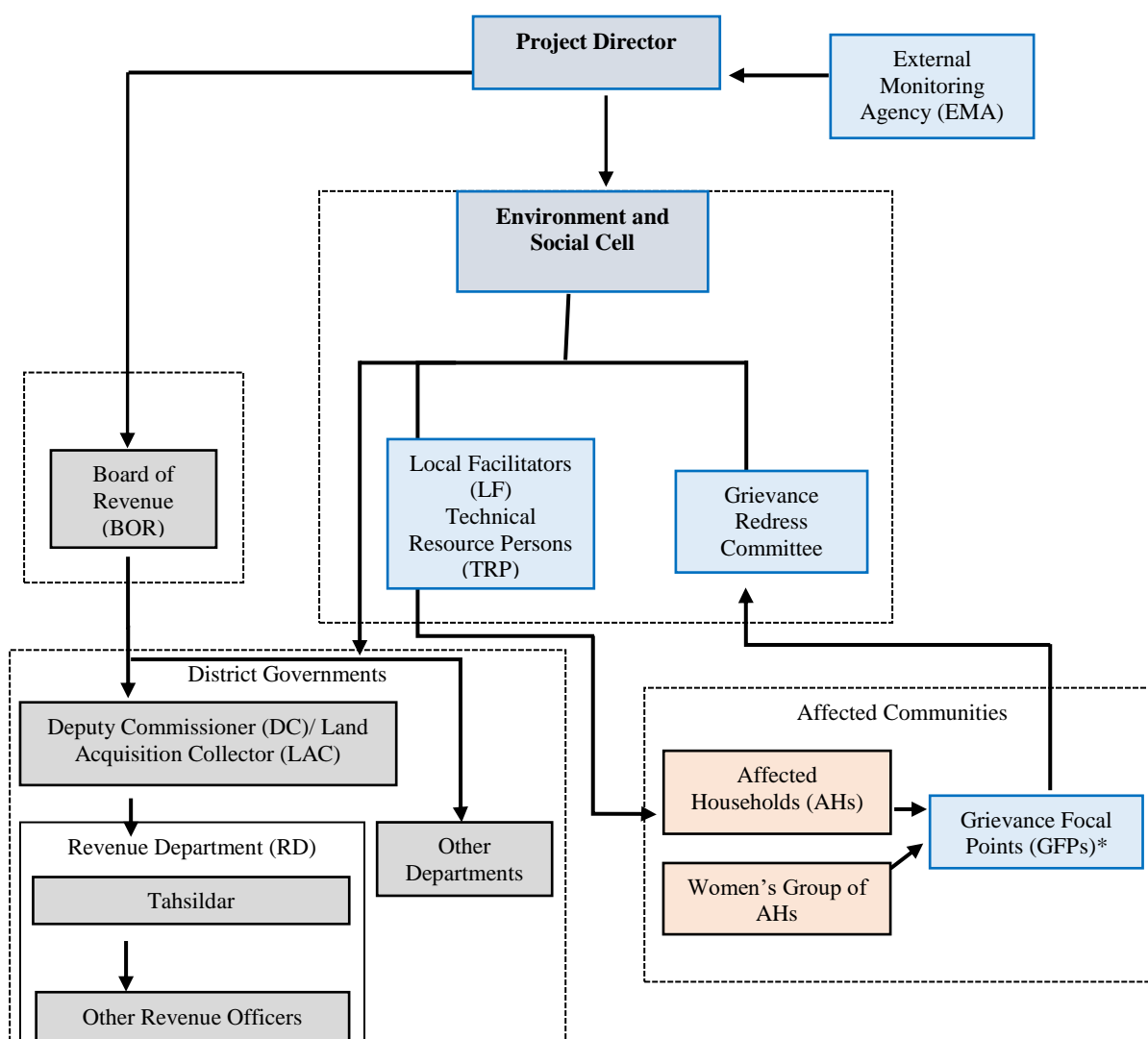
The PMIU will be managed by a Project Steering Committee (PSC), which will provide overall strategic direction to the project and its stakeholders. The PSC will be chaired by the Additional Chief Secretary (ACS) and is expected to meet on a quarterly basis. The PSC will consist of representatives of technical line departments, who are relevant to the project, including livestock, agriculture, industries, forestry, mines and minerals etc. as well as the Commissioner for Afghan Refugees in Balochistan. The PSC will also conduct biannual reviews of policy and programme implementation progress and will support the PIU team in resolving implementation bottlenecks in a timely and effective manner.

7.4.4 Project Facilitation Committee

A Project Facilitation Committee (PFC), headed by the Secretary Planning and Development Department (P&DD) will be established comprising of representatives from relevant line departments to provide sector-specific expertise, depending upon local priorities and as required. These focal points will also provide operational support and facilitate day-to-day operations specific to the departments they represent.

7.5 Institutional Arrangements for the ESMF

The ESMF will be implemented under the overall supervision PMIU. The designated Project Director (PD) and Director Implementation will be the overall in-charge of the Project. They will engage, hire and delegate the supervisory responsibilities to the staff. For the efficient implementation and management of resettlement activities an Environment and Social Cell will be established within the PMIU. The Environment and Social Cell will be accountable and responsible for the implementation of the ESMF and preparation of sectoral ESMPs and RAPs. The Cell will implement, monitor and report ESMF through the Environmental specialist, Social Safeguards Specialists and the Gender Specialist to be appointed by the PMIU. An organogram of institutional arrangements is presented in **Figure 7.1**.

Figure 7.1: Institutional Arrangement for ESMF Implementation**Note:**

*GFPs: One literate male and one literate female from each community

*CLO: Community Liaison Officer (male & female)

7.5.1 Role of Environmental and Social Cell

Environment Safeguards Specialist will ensure the implementation of mitigation related to environmental impacts in ESMF and preparation of sectoral ESMPs. The Social Safeguards Specialist will ensure implementation of the Resettlement Policy Framework and other social safeguards related measures defined in ESMP along with implementation of Grievance Redress Mechanism (GRM). The Gender Specialist will ensure gender mainstreaming and implementation of the Gender Action Plan at the PMIU, consultants, contractor and community level. The specialists will be assisted by Local Facilitators and Technical Resource Persons for continuous monitoring of activities on field. PMIU will be responsible for hiring of Construction Contractor and

supervision of contractors work on the sites in accordance with ESMPs. Roles and responsibilities of the designated Specialists and project team have been detailed in **Table 7.1** below.

Table 7.1: Roles and Responsibilities

Organization	Position	Responsibility
PMIU	Project Director	Ensure ESMF Implementation
PMIU	Environment Safeguards Specialist	<p>Carry out environmental screening of enterprises defined in ESMF;</p> <p>Coordinate preparation of ESMPs for sectors;</p> <p>Ensure that the construction contracts include clauses for ESMP implementation;</p> <p>Ensure implementation of the ESMPs during various stages of design and construction;</p> <p>Certify timely and robust environmental monitoring in the field by local facilitators and technical resource persons;</p> <p>Ensure that environmental trainings are planned and implemented;</p> <p>Overall monitoring and reporting of environmental impacts;</p> <p>Coordinate and ensure development of awareness material;</p> <p>Commission annual third party validations of the project;</p> <p>Prepare Environmental Bi-Annual Progress Reports for the project.</p> <p>ToRs included as Annexure 13</p>
PMIU	Social Safeguards Specialist	<p>To carry out the screening of the enterprises with respect to the social aspects as defined in the ESMF;</p> <p>Monitor and check the proper implementation of all social mitigation measures as suggested in ESMF/ESMPs;</p> <p>Monitoring and evaluation of social related matters of the project and maintain a social complaint register to document social issues;</p> <p>Certify timely and robust social monitoring in the field by local facilitators and technical resource persons</p> <p>Ensure inclusion of ESMP guidelines in project designs.</p> <p>Screen sub-projects for Involuntary Resettlement, gender focus and citizen engagement</p> <p>Ensure Resettlement Policy Framework (RPF) is implemented and RAP is prepared if required</p> <p>Remain the focal point for managing the project GRM, and maintain analysis and reports on types of complaints received, resolved, time taken to action, etc.</p> <p>Prepare Required Reports biannually.</p> <p>ToRs included as Annexure 13</p>
PMIU	Gender Specialist	<p>Ensure implementation of all gender related mitigation measures within the Environmental and Social Management Framework (ESMF) of the Project at the PMIU, consultants, contractor and community level</p> <p>Ensure a relevant, practical and easy to implement Gender Action Plan and structure is in place and applied</p> <p>Ensure gender-based inclusion of beneficiaries in the</p>

Organization	Position	Responsibility
		<p>project interventions</p> <p>Provide technical lead to the field teams regarding gender mainstreaming activities of the project</p> <p>Monitor and report the implementation of responsibilities of respective stockholders based on Gender Action Plan.</p> <p>Prepare training plans for staff and stockholders regarding fundamental concepts of Gender Action Plan.</p> <p>Train the Local Facilitators in gender mainstreaming for project interventions.</p> <p>Coordinate and monitor the beneficiary selection process for various project activities under a developed gender criterion.</p> <p>Linkages development with NGOS and public-sector entities working on empowerment of women and marginalized segments of society.</p> <p>Ensure the grievance redressal mechanism (GRM) is gender friendly</p> <p>Keep track of gender related grievances reported by M&E consultants for resolution.</p> <p>Provide assistance and advice to field staff for resolving grievances related to gender arising on account of project implementation</p> <p>Collect analyses and interpret field data regarding gender aspect of the project initiatives.</p> <p>ToRs included as Annexure 13</p>
PMIU	Third Party Monitoring consultants	Evaluation of ESMF implementation

7.5.2 Role of Local Facilitators and Technical Resource Persons

The project will rely heavily on local facilitators and technical resource persons who will be representing the project at the community level. Local Facilitators (LFs) and Technical Resources Persons (TRPs) will be remunerated based on deliverables and will support the Project Management and Implementation Unit (PMIU) in project implementation. While LFs will provide communities with overall support, the TRPs will provide specialized business development support to entrepreneurs supported through the project. LFs and TRPs are individuals (male and female to ensure adequate coverage of and support to female beneficiaries) from the community who are both active and committed to the development of their area. They will be hired on a short-term contract by the Project to organize beneficiary groups in the project area. The roles and responsibilities will include i) formation of new groups and revitalization/reactivation of existing groups; ii) attending meetings in order to help beneficiaries and the project in monitoring performance; iii) monthly reporting to PMIU; and, iv) training group members in basic group management skills. The cadre of local facilitators and technical resources persons created through the project are expected to ensure continuity of the enterprise development process after project completion.

The Local Facilitators and Technical Resource Persons will collect data from the field on a monthly basis, including compliance with environmental and social safeguards. These facilitators will be trained by the PMIU staff to perform these duties.

7.5.3 Role of Enterprise Owner

With the assistance of Local Facilitators and Technical Resource Persons, enterprise owner will ensure compliance with mitigation measures that have been proposed in the ESMPs in all interventions. They will also be involved in the preparation of EOIs for contractors and ensure that ESMF/ESMP requirements are integrated in EOI and BOQ documents in the case of construction activities. These activities will be assisted by the Local Facilitators and Technical Resource Persons.

7.5.4 Role of Construction Contractors

In case of construction work, the construction contractor will be required to submit all relevant plans for mitigating environmental and social impacts to attain approval in case the enterprise is in the categories defined by Balochistan Environmental Protection Act and falls in high risk through ESMF screening checklist. The construction contractor will also ensure that ESMF/ESMPs/RAPs requirements are part of the design and implemented at the field level. A list of relevant plans based on size and scale of the project to be implemented by contractors in case of construction is given below:

1. Emergency Response Plan
2. Public Safety Plan
3. Workers Health & Safety Plan
4. Energy and Water Conservation Plans
5. Environmental Management Plan
6. Biodiversity Management Plan

7.6 Environmental and Social Mitigation and Monitoring Plan

Table 7.2 describes the implementation of mitigation measures for potential environmental and social impacts of each sector and their monitoring plan of each sector.

The environmental and social impacts of construction and their monitoring are included separately in **Table 7.3**.

Table 7.2: Sector Specific Environmental and Social Mitigation and Monitoring Framework

Implementation Plan			Monitoring Plan			
Aspect /Impact	Proposed Mitigation Measures	Responsibility	Monitoring Parameter(s)	Frequency	Responsibility	Compliance Criteria
Agriculture Sector						
Soil	<ol style="list-style-type: none"> Soil Management Plans will be prepared as part of sectoral ESMP for the project activities that may cause extensive soil erosion and contamination. Crops varieties suited or adapted to the local climate and soil conditions will be identified and cultivated. In addition, good agronomic practices³⁹⁵ will be adopted to optimize crop productivity; Appropriate land preparation machinery will be used at the right time of year to minimize soil compaction, damage, or disturbance; Communication system will be established with the help of meteorological department to provide farmers with regular weather forecast of the area through mobile phones. Soil preparation, sowing and harvest shall be scheduled when weather conditions pose the lowest risk of causing environmental damage; Crop rotation will be practiced to maintain the soil coverage during the year; Use of erosion management practices (e.g., contour and strip planting, terracing, discontinuous trenching, intercropping with trees, and grass barriers) will be ensured in sloping areas; Soil organic matter and soil water-holding capacity will be replenished with the use of organic fertilizers by recycling and/or incorporate organic materials (e.g., crop residues, compost, and manures) whenever available and economically viable. Farmers Training Program will be launched on nutrient management with the help of agricultural practice manuals and agriculture department.³⁹⁶ It will be ensured that all personnel are trained in and use appropriate management procedures for the storage, handling, and application of all types of fertilizers, 	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	ESMP Soil testing (pesticides residue) , Crop varieties in each district Number of trainings Soil Management Plans Farmers Training Program Integrated Pest Management Plan	Biannual	Environmental Specialist/ Local Facilitators/ Technical Resource Persons	Hazardous Substances Rules 2000, WHO Hazard Classifications for pesticides, ECoP 4 and 5 soil quality and erosion control (Annexure-3) List of protected areas, wetland and notified forest, World Bank Agriculture sector OHS Guidelines,

³⁹⁵ Food and Agriculture Organization (FAO), Good Agricultural Practices Principles, (2007). Among others, good practices include those that select cultivars and varieties on an understanding of their characteristics, including response to sowing or planting time, productivity, quality, market acceptability and nutritional value, disease and stress

³⁹⁶ FAO, Guidelines and Reference Material on Integrated Soil and Nutrient Management and Conservation for Farmer Field Schools, (Rome: FAO, 2000) <http://www.fao.org/docs/eims/upload/230157/misc27.pdf>.

Implementation Plan			Monitoring Plan			
Aspect /Impact	Proposed Mitigation Measures	Responsibility	Monitoring Parameter(s)	Frequency	Responsibility	Compliance Criteria
	<p>including organic wastes.</p> <p>8. Pesticides banned under national law (hazardous substance rules 2000) will be prohibited. Specifically use of pesticides in Annexes A and B of the Stockholm Convention, WHO Hazard Class, and classified as Persistent Organic Pollutants (POPs) will be discouraged unless the project has appropriate controls established with respect to the manufacture, procurement, or distribution and/or use of these chemicals. Preferentially, use selective pesticides with low environmental impact quotient (EIQ) where appropriate, rather than broad-spectrum products, to minimize impacts on non-target species.</p> <p>9. In case of synthetic pesticides, site specific Integrated Pest Management Plan will be prepared as part of the Agriculture Sector ESMP. Use of natural pesticides and fertilizers, crop rotation will be encouraged. Use of pesticides will be minimized by implementing a pest and disease early-warning system, by using biological pest and disease control methods, and by implementing control measures before outbreaks require large-scale control.</p> <p>10. Agriculture Management and Skills Training (AMST) will be established with the Agriculture Extension Department to help farmers in the area.</p>					
Water Resources	<p>1. In case of a Business Development Facility (BDF) on water resource management is being established, an IEE under Schedule I will be prepared by PMU in the following cases:</p> <ul style="list-style-type: none"> ○ Dams and reservoirs with storage volume less than 50 million cubic meters of surface area less than 8 square kilometres ○ Irrigation and drainage projects serving less than 15,000 hectares ○ Small-scale irrigation systems with total cost less than Rs.50 million ○ Water supply schemes and treatment plants with total cost less than Rs.25 million <p>2. Regulatory Regime for Water Use and Water Management Plan will</p>	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	<p>ESMP</p> <p>Runoff water</p> <p>EQS parameters for effluent</p> <p>Water Management Plan</p>	Biannual	Environmental Specialist/ Local Facilitators /Technical Resource Persons	<p>ECOP 3 and 4 on waste water and drainage management (Annexure 3)</p> <p>EQS for Effluent ,</p> <p>World Bank Agriculture sector OHS Guidelines,</p>

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	<p>be prepared as part of the Agriculture Sector ESMP. These plans will be prepared for each district with poor water availability. These must be relevant, effective, accurate and in accordance with local customs and site requirements. Sprinkler and drip irrigation system will be installed for crops and fruit orchards;</p> <p>3. Testing on water quantity and quality will be done for sectoral ESMP</p> <p>4. It will be ensured that water intensive crops are not introduced through project supported activities;</p> <p>5. Use of irrigation techniques will be based on water availability and type of crop in each district. Rain or water irrigation requirements of the crop shall be based on internationally recognized guidelines, while recognizing seasonal variations and regional norms.</p> <p>6. Retention of water through rain water harvesting techniques will be ensured in districts with rainwater and snow e.g established water flow from roads and paths toward crops, thus storing water in the soil and reducing the effect of short dry spells. Storing runoff from rainy periods for use during dry spells by using tanks, ponds, cisterns, and earth dams. Maintaining protective vegetation in drainage systems to reduce canal bank scouring and slow runoff.</p> <p>7. Site specific water efficiency and conservation measures and technologies such as micro-spraying, drippers, and fertigation will be encouraged. Irrigation system, as well as its associated channels and infrastructure will be regularly maintained.</p> <p>8. Meteorological data on rainfall shall be used to manage irrigation timing. Avoid evaporation by irrigating at night. Reduce evapotranspiration by using shelterbelts, tunnels and windbreaks.</p> <p>9. Seepage losses in supply channels shall be reduced by lining them or using closed pipes. Employ a cutback furrow/channel irrigation technique, slowing or stopping irrigation water well before the water reaches the end of the furrow and discharges.</p> <p>10. If herbicides are used, ensure they are applied at the appropriate time of year to most effectively control undesirable vegetation and reduce water</p>					

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	consumption. 11) Avoid over-irrigation, which may result in the leaching of nutrients and contaminants. Soil degradation prevention practices and control at source on use of pesticides and fertilizers are provided in earlier section on the "impacts on soil and mitigation".					
Solid Waste Generation	1) Residues and other organic materials should be recycled by leaving the materials on site or through composting (and spreading) 2) It is recommended to use crop residues for other beneficial purposes—such as animal feed, bedding, or thatching—when leaving residues in the field is neither practical nor appropriate; 3) Agriculture Sector ESMP will provide guidelines for farmers for storing, handling and disposal pesticide containers and unwanted pesticides as hazardous wastes in accordance with the General EHS Guidelines and Food and Agriculture Organization (FAO) Guidelines for the Management of Small Quantities of Unwanted and Obsolete Pesticides.	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	ESMP Solid waste collection, reuse, and disposal practices at sites Solid Waste Management Plans	Biannual after harvest	Environmental Specialist/ Local Facilitators /Technical Resource Persons	Hazardous Substances rules 2000, ECoP 1 and 2 on solid and hazardous waste management (Annexure 3) World Bank Agriculture sector OHS Guidelines,
Biodiversity/ Ecology	1) Ensure agricultural activities are not conducted in Protected Areas or Notified Forests 2) As part of Agriculture Sector ESMP, prepare biodiversity/ecosystem management plan in case sub-projects are in proximity to sensitive areas 3) Wood and forest products for use in agriculture should not be sourced from Protected Areas and Notified Forests; 4) Conversion of existing critical or natural habitats for agriculture should be avoided wherever possible and planting on modified habitats or degraded lands should be promoted; 5) Introduction of invasive species and genetically modified plants will be avoided	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	Location of agriculture enterprises and cropping sites	Biannual	Environmental Specialist/ Local Facilitators /Technical Resource Persons	World Bank Agriculture sector OHS Guidelines, ECoP 10, 11 and 12 on Flora Fauna and fish. (Annexure 3) Balochistan Forest and Wildlife Protection Act
Air Quality	1) Where feasible, use of renewable energy (e.g., solar, wind, biofuel) for crop drying or to power irrigation pumps shall be practiced;	Project Management Implementation	EQS for Ambient Air Quality NOx	Biannual	Environmental Specialist/	Ambient Air quality Standards

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	2) Open burning for land preparation, weed control, and post-harvest treatments will be avoided. Where burning is unavoidable, potential impacts should be identified and weather conditions monitored to schedule burning in an effort to minimize impacts. 3) Burning of pesticide-treated agricultural wastes and by-products (e.g., pesticide containers) will be prohibited to avoid unintended emissions of persistent organic pollutants (POPs).	n Unit (PMIU) and enterprise owners/beneficiaries	SO _x C _x		Local Facilitators / Technical Resource Persons	(EQS) ECoP 8 on Air quality management (Annexure 3) World Bank OHS Guidelines on Agriculture,
Social Impacts: Communities health and safety Farmers health and safety Archaeological, cultural, religious resources	1) Risk of exposure to hazardous products can be minimized by ensuring that guidelines for the transportation, storage, handling, usage, and disposal of those products are followed; 2) Do not apply pesticides, chemicals, or manure if meteorological conditions (strong winds, storms, rainfall etc.) are likely to result in adverse impacts in surrounding communities; 3) Use of biological or lower-risk-profile products shall be practiced, if available. Respect pre-harvest intervals and post-harvest withholding periods for products that have been treated with pesticides to avoid unacceptable levels of residues. ³⁹⁷ 4) Do not store or transport pesticides and fertilizers with food (human or livestock foodstuffs) or beverages (including drinking water). Ensure that animals and unauthorized people are not present in the areas where pesticides or other potentially harmful products are handled, stored, or applied. Store manure and crop protection products as far away from dwellings as possible, and use measures, such as covering the manure, to reduce odours and atmospheric emissions. 5) Farmers and Community Health and Safety Plan will be prepared; 6) Encourage the use of natural pesticides and ensure use of masks	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	ESMP Complaint/Accident Record Health and Safety Management Plan and trainings Medical record of workers PCR Management Plan	Biannual	Social Safeguard Specialist/ Local Facilitators / Technical Resource Persons	EQS for drinking water PCR Management (Annexure 8) Antiquities Act List of Archaeological Sites World Bank OHS Guidelines on Agriculture ECoP 16 on Workers Health and Safety ECoP 15 On Cultural and

³⁹⁷ Examples of potentially applicable pesticide tolerance requirements include the FAO/WHO (1962–2005) Codex Alimentarius' Maximum Residue Limits in Foods and 40 CRF Part 180, Tolerances and Exemptions from Tolerances for Pesticide Chemicals in Food, the latter of which applies to crops sold in the United States

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	<p>and protective gear while spraying pesticides , fertilizers and hazardous substance(If any);</p> <p>7) Cultivation of crops such as poppy and other prohibited varieties listed in the Negative List of Activities (Annexure 7) shall be prohibited;</p> <p>8) It should be ensures that there is no use of exploitative forms of forced labour. Labour for the business enterprise will be hired according to labour law and the contractual binding will be added in the agreement documentation.</p> <p>9) The project will ensure that no child under the age of 18 is hired to work in hazardous conditions (pesticide sprays, industrial activity); and no child under that age of 15 is hired to do any sort of physical exertive labour (general farm labour, mechanic, etc.); and no child under the age of 12 is hired for ANY type of labour;</p> <p>10) Activities near identified sites of cultural or religion importance will be disallowed. Incase of such an intervention, PCR Management Plan will be prepared and followed;</p> <p>11) Local labour will be hired. Local norms and customs shall be practiced for social interaction;</p> <p>12) Voluntary land donations will be encouraged. For any land acquisition, the enterprise developer will ensure the identification of land in un-disputed area not requiring resettlement. In case of any resettlement, resettlement policy framework will be followed for the preparation of site specific Resettlement Action Plan.</p> <p>13) The district/village/community leaders and notables will be engaged at the start of the project with agreements on various aspects of implementation of project activities;</p> <p>14) Local facilitators and Grievance Committee will resolve conflicts using grievance redressal mechanism given in chapter 9;</p> <p>15) Site specific Grievance Redress Plan will be made incase of conflict zones and security sensitive areas;</p> <p>16) Notables and leaders of the communities shall be engaged prior to start of project implementation through stakeholder engagement framework provided in chapter 5;</p> <p>17) The local police and law enforce agencies shall be engaged prior</p>					religious conflicts management (Annexure 3)

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	to the start of the project activities; 18) For project staff and interventions, locals shall be given preferences.					
Livestock Sector						
Land/Ecosystem	<ol style="list-style-type: none"> Before converting land for livestock production ensure that it is not located in a Protected Area or Notified Forest; Where possible carry out a carrying capacity assessment of rangelands It should be ensured that any natural or modified habitat to be converted for livestock production does not contain critical habitat, including known habitat of critically endangered or endangered species, or important wildlife breeding, feeding, and staging areas; The use of fences, buffer strips or other physical barriers shall be practiced to prevent animals' access to surface water bodies; Ensure livestock feed is not sourced or produced from Protected Areas and Notified Forest. Open grazing and browsing of livestock shall only be allowed using the principles of Rotational Grazing. This is an exercise to divide rangeland/grasslands/pastures into rotation zones based on abundance of vegetation, to restrict overuse of one particular rangeland/grassland/pasture. Livestock trails shall be used for movement to reduce soil trampling and gully formation / erosion near streams; There should be minimum disturbance to surrounding areas when managing livestock. 	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	Erosion pattern visual inspection Soil tests Biodiversity Management Plan	Biannual	Environmental Specialist/Local Facilitators/Technical Resource Persons	Balochistan Forest and Wildlife Protection Act List of protected Areas, endangered species and notified forest ECoP 10,11 and 12 (Annexure 3); OHS Guidelines on Livestock
Water Resources	<ol style="list-style-type: none"> Formulate Water Management Plans for districts with water shortages will be prepared as part of the Livestock Sector ESMP to regulate water use; Reduce water use and spills from animal watering by preventing overflow of watering devices and using calibrated, well-maintained 	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	EQS parameters of effluent from drains Sectoral Water conservation	Biannual	Environmental Specialist/Local Facilitators/Technical Resource Persons	EQS for Effluents ECoP on Water Resources and Drainage

Implementation Plan			Monitoring Plan			
Aspect /Impact	Proposed Mitigation Measures	Responsibility	Monitoring Parameter(s)	Frequency	Responsibility	Compliance Criteria
	self-watering devices; 3) Potential sources of contamination from livestock waste must be located at a safe distance from groundwater and freshwater sources (hand pumps, wells, ponds, karez etc.) 4) Install vegetative filters to trap sediment and surface water diversions to direct clean runoff around areas containing waste; 5) Implement buffer zones to surface water bodies, avoiding land spreading of manure within these areas.	ciaries	plans ESMP			Management OHS Guidelines on Livestock
Solid Waste	1) Solid Waste Management Plan for livestock waste will be prepared as part of the Livestock Sector ESMP to guide farmers on properly managing animal waste. Plan will take into account the potentially harmful constituents of this waste including potential phytotoxicity levels, potential concentration of hazardous substances in soils and vegetation, as well as nutrient limits and groundwater pollutant limits; 2) Where no authorized collection of carcasses is available, on-site burial may be one of the only viable alternatives, if allowed by the competent authorities. Whether onsite or offsite, the burial area have stable, low-permeability soils with sufficient physical separation from houses and water resources to avoid contamination by vapours or leachate from buried, decaying materials. 3) Design, construct, operate, and maintain waste management and storage facilities to contain all manure, litter, and process wastewater including runoff and direct precipitation; 4) Ensure that manure is applied to agricultural land only during periods that are appropriate for its use as plant nutrient (generally just before the start of the growing season)	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	Amount of solid waste reuse and disposal system Sectoral Nutrient and solid waste management plan ESMP	Biannual	Environmental Specialist/Local Facilitators/Technical Resource persons	OHS Guidelines on Livestock ECOP 1 on waste Management (Annexure 3)
Air Quality	1) Consider the siting of new facilities taking into account distances to neighbours and the propagation of odours; 2) Control the temperature, humidity, and other environmental factors of manure storage to reduce emissions; 3) Consider composting of manure to reduce odour emissions; 4) Consider installing biogas plants to make use of waste for power	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	Ambient Air Quality	Biannual	Environmental Specialist/Local Facilitators/Technical Resource	EQS for Ambient Air quality and Noise ECOP 8 and 9 for air quality

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Aspect /Impact	Proposed Mitigation Measures	Responsibility	Monitoring Parameter(s)	Frequency	Responsibility	Compliance Criteria
	production;	ciaries			persons	and noise management (Annexure 3) OHS Guidelines on Livestock
Hazardous Substances	<p>1) If pesticides are used, formulate Integrated Pest Management Plan as part of the Livestock Sector ESMP to evaluate the need and effectiveness of the pesticide, as well as potential environmental impacts, to ensure that the pesticide with the least adverse impact is selected (e.g. no leachable pesticides).</p> <p>2) Avoid the use of pesticides that fall under national Hazardous Substances Rules 2000, World Health Organization Recommended Classification of Pesticides by Hazard Classes 1a and 1b, Pesticides by Hazard Class II and Annexes A and B of the Stockholm Convention, except under the conditions noted in the convention</p>	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	Hazardous substances list Integrated Pest Management Plan	Biannual	Environmental Specialist/ Local Facilitators Technical Resource Persons	Hazardous Substance Rules; WHO Classification of Hazardous Substances; ECOP 2 on fuel and hazardous substance Management (Annexure 3)
Social Impact: Community health and safety , Archaeological, Religious and Cultural Sites Workers Health and Safety	<p>1) Prepare Occupational and Community Health And Safety Plan shall be prepared;</p> <p>2) Safety equipment and trainings shall be given to workers on physical hazards associated with livestock sector;</p> <p>3) Facilities involved in livestock production should use a veterinary service on an annual or more frequent basis to review and assess the health of the stock and employees' competence and training;</p> <p>4) Inform workers of potential risks of exposure to biological agents and provide training in recognizing and mitigating those risks;</p> <p>5) Chemical exposures to the communities and workers should be prevented and controlled;</p> <p>6) Recommended vaccination protocols, parasite controls; and , medication shall be used;</p> <p>7) Provision of safe drinking water shall be made available to the workers;</p>	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	Complaint/ Accident Record ESMP Health and Safety Management Plan and trainings Annual medical record of workers EQS parameters for drinking water	Biannual	Social Safeguard Specialist/ Local Facilitators Technical Resource Persons	EQS for drinking water General OHS Guidelines OHS Guidelines on Livestock ECoP 16 on Workers Health and Safety Antiquities Act List of Archaeological Sites

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	<p>8) If antibiotics are recommended, apply approved over-the-counter antibiotics in strict accordance with the manufacturer's and qualified professional instructions to ensure responsible and correct use;</p> <p>9) It should be ensured that there is no use of exploitative forms of forced labour. Labour for the business enterprise will be hired according to labour law and the contractual binding will be added in the agreement documentation.</p> <p>10) The project will ensure that no child under the age of 18 is hired to work in hazardous conditions (pesticide sprays, industrial activity); and no child under that age of 15 is hired to do any sort of physical exertive labour (general farm labour, mechanic, etc.); and no child under the age of 12 is hired for ANY type of labour;</p> <p>11) Activities near identified sites of cultural or religion importance will be disallowed. In case of such an intervention, PCR Management Plan will be prepared and followed;</p> <p>12) Voluntary land donations will be encouraged. For any land acquisition, the enterprise developer will ensure the identification of land in un-disputed area not requiring resettlement. In case of any resettlement, resettlement policy framework will be followed for the preparation of site specific Resettlement Action Plan.</p> <p>13) Prohibit the use of banned booster medicines to improve meat growth and milk production</p> <p>14) Ensure production and storage areas for milk and meat follow quality standards used by Balochistan Food Authority;</p> <p>15) The district/village/community leaders and notables will be engaged at the start of the project with agreements on various aspects of implementation of project activities through stakeholder disclosure and engagement framework;</p> <p>16) Local facilitators and Grievance Committee will resolve conflicts using grievance redressal mechanism given in chapter 9;</p> <p>17) Site specific Grievance Redress Mechanism will be made in case of conflict zones and security sensitive areas;</p> <p>18) Notables and leaders of the communities shall be engaged prior to start of project implementation through stakeholder engagement</p>					ECOP 15 On Cultural and religious conflicts management (Annexure 3)

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Aspect /Impact	Proposed Mitigation Measures	Responsibility	Monitoring Parameter(s)	Frequency	Responsibility	Compliance Criteria
	framework provided in chapter 5; 19) The local police and law enforce agencies shall be engaged prior to the start of the project activities; 20) For project staff and interventions, locals shall be given preferences.					
Animal Health	1) Ensure preparation of an animal vaccination and veterinary care plan for the livestock 2) Provide linkages with Livestock Extension Department to learn about better practices for livestock rearing 3) Control farm animals, equipment, personnel, and wild or domestic animals entering the facility; 4) Sanitize animal housing areas; 5) Identify and segregate sick animals and develop management procedures for adequate removal and disposal of dead animals.	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	Medical check-up records Visual inspection of cattle shed	Biannual	Social Safeguard Specialist/ Local Facilitators /Technical Resource Persons	OHS Guidelines on Livestock
Mines and Minerals						
Environmental Impacts: Solid Waste Liquid Waste Hazardous Substance	1) Ensure there is no use or production of hazardous chemicals and substances listed on the Negative List of Activities and hazardous chemicals Rules 2000 (Annexure 7) 2) Ensure mines and minerals used are not sourced from mines operating illegally in protected areas or notified forests; 3) The waste water from the process(if any) shall not contaminate the existing groundwater and freshwater sources; 4) Use of water efficiency ,conservation measures and technologies shall be ensured; 5) Use of passive solar design to take advantage of natural sunlight and airflow is recommended for electricity; 6) The solid waste shall be handled and disposed of in a proper manner;	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	EQS parameters for effluent ESMP	Biannual	Environmental Specialist/ Local Facilitators /Technical Resource Persons	Balochistan Forest and Wildlife Protection Act List of protected Areas, endangered species and notified forest ; EQS for Effluent and Noise ECoP 1 to 12 ; World Bank General OHS

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						Guidelines
Social Impacts: Communities and workers Health and safety Archaeological, Religious and Cultural Sites	1) Activities listed in the Negative List of Activities (Annexure 7) shall be prohibited;	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	Complaint/Accident Record ESMP Health and Safety Management Plan and trainings Annual medical record of workers EQS parameters for drinking water	Biannual	Social Safeguard Specialist/Local Facilitators/Technical Resource persons	EQS for drinking water PCR Management (Annexure 8) Antiquities Act List of Archaeological Sites World Bank OHS Guidelines ECoP 15 On Cultural and religious conflicts management ECoP 16 on Workers Health and Safety (Annexure 3)
	2) Prepare Occupational and Community Health And Safety Plan;					
	3) It should be ensured that there is no use of exploitative forms of forced labour. Labour for the business enterprise will be hired according to labour law and the contractual binding will be added in the agreement documentation.					
	4) The project will ensure that no child under the age of 18 is hired to work in hazardous conditions (pesticide sprays, industrial activity); and no child under that age of 15 is hired to do any sort of physical exertive labour (general farm labour, mechanic, etc.); and no child under the age of 12 is hired for ANY type of labour;					
	5) Activities near identified sites of cultural or religion importance will be disallowed. In case of such an intervention, PCR Management Plan will be prepared and followed;					
	6) Use of personal protective equipment (PPE) such as gloves, masks, goggles, helmets etc. shall be ensured by beneficiaries and while processing workers ;					
	7) Hazardous liquid and solid waste is stored separately out of reach of children and is delivered to disposal sites in secure containers for safe disposal					
	8) Proper ventilation channels shall be installed when working with minerals in confined spaces (e.g. open window, open door, exhaust fan, etc.).					
	9) The working environment should be monitored for occupational hazards relevant to the specific project. Monitoring should be designed and implemented by accredited professionals;					
	10) Training should be given to employees on the recognition and prevention of occupational hazards;					
	11) Local labour will be hired. Local norms and customs shall be practiced for social interaction;					
	12) Voluntary land donations will be encouraged. For any land acquisition, the enterprise developer will ensure the identification of land in un-disputed area not requiring resettlement. In case of any					

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	<p>resettlement, resettlement policy framework will be followed for the preparation of site specific Resettlement Action Plan.</p> <p>13) The district/village/community leaders and notables will be engaged at the start of the project with agreements on various aspects of implementation of project activities;</p> <p>14) Local facilitators and Grievance Committee will be engaged to resolve conflicts using grievance redressal mechanism given in chapter 9;</p> <p>15) Site specific Grievance Redress Mechanism will be made in case of conflict zones and security sensitive areas;</p> <p>16) Notables and leaders of the communities shall be engaged prior to start of project implementation through stakeholder engagement framework provided in chapter 5;</p> <p>17) The local police and law enforce agencies shall be engaged prior to the start of the project activities;</p> <p>18) For project staff and interventions, locals shall be given preferences.</p>					
Handicraft and Small Industries						
Environmental Impacts Solid Waste Liquid Waste Hazardous substances	1) Ensure there is no use or production of hazardous chemicals and substances listed on the Negative List of Activities (Annexure 7); 2) Ensure all effluents containing chemicals and dyes are disposed in a safe manner according to EQS; 3) Ensure all groundwater and freshwater sources are located at a safe distance from potential sources of contamination; 4) Prohibit illegal extraction of wood from Protected Areas and Notified Forests; 5) Ensure sustainable harvesting of medicinal plants and non-timber forest products (NTFPs) 6) Ensure the use of water efficiency and conservation measures and technologies; 7) Awareness trainings will be conducted for the dangers of using	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	EQS parameters for effluent ESMP	Biannual	Environmental Specialist/ Local Facilitators /Technical Resource persons	EQS for Effluent and Noise Balochistan Forest and Wildlife Protection Act List of protected Areas, endangered species and notified forest ;

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Aspect /Impact	Proposed Mitigation Measures	Responsibility	Monitoring Parameter(s)	Frequency	Responsibility	Compliance Criteria
	toxic substances or chemicals in handicraft production and use of natural resources in the production of handicrafts. 8) Use of passive solar design to take advantage of natural sunlight and airflow is recommended for electricity; 9) Solid waste shall be handled and disposed off in a proper manner					ECoP 1 to 12 ; World Bank General OHS Guidelines
Social Impacts Community health and safety , Archaeological, Religious and Cultural Sites Workers Health and Safety	1) The activities listed in the Negative List of Activities (Annexure 7) shall be forbidden; 2) Prepare Occupational and Community Health And Safety Plan; 3) It should be ensured that there is no use of exploitative forms of forced labour. Labour for the business enterprise will be hired according to labour law and the contractual binding will be added in the agreement documentation. 4) The project will ensure that no child under the age of 18 is hired to work in hazardous conditions (pesticide sprays, industrial activity); and no child under that age of 15 is hired to do any sort of physical exertive labour (general farm labour, mechanic, etc.); and no child under the age of 12 is hired for ANY type of labour; 5) Hazardous liquid and solid waste (e.g. mercury, biomedical, heavy metals, CFLs (energy savers), tires, oil, batteries, paint, solvents, acidic solutions, etc.) shall be stored separately out of reach of children and is delivered to disposal sites in secure containers for safe disposal; 6) Hazardous chemicals and dyes shall be stored separately in secure labelled containers out of reach of public and specifically children; 7) Tools and machinery shall be stored out of reach of children; 8) Access to health facilities close to the sites shall be identified to the communities and workers in case of an emergency; 9) Ensure use of personal protective equipment (PPE) such as gloves, masks, goggles, helmets, welding glasses/shields by beneficiary and workers while handling chemical polishes, dyes paints and machinery 10) Ensure installation of proper ventilation channels in workshops and when working with chemicals, paints, and polishes in confined	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	Complaint/Accident Record ESMP Health and Safety Management Plan and trainings Annual medical record of workers EQS parameters for drinking water Archaeological , Religious and Cultural Sites near each project site	Biannual	Social Specialist/ Local Facilitators (Technical Resource Persons)	EQS for drinking water PCR Management (Annexure 8) Antiquities Act List of Archaeological Sites World Bank general OHS Guidelines ECoP 15 On Cultural and religious conflicts management (Annexure 3) ECoP 16 on Workers Health and Safety

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	<p>spaces (e.g. open window, open door, exhaust fan, etc.).</p> <p>11) Activities near identified sites of cultural or religion importance will be disallowed. Incase of such an intervention, PCR Management Plan will be prepared and followed;</p> <p>12) The working environment should be monitored for occupational hazards relevant to the specific project. Monitoring should be designed and implemented by accredited professionals;</p> <p>13) Training should be given to employees on the recognition and prevention of occupational hazards specifically applicable to work in remote areas such as safety with respect to wildlife; protection against the elements; thermal stress; adaptation and disease exposure;</p> <p>14) Local labour will be hired. Local norms and customs shall be practiced for social interaction;</p> <p>15) Voluntary land donations will be encouraged. For any land acquisition, the enterprise developer will ensure the identification of land in un-disputed area not requiring resettlement. In case of any resettlement, resettlement policy framework will be followed for the preparation of site specific Resettlement Action Plan.</p> <p>16) The district/village/community leaders and notables will be engaged at the start of the project with agreements on various aspects of implementation of project activities;</p> <p>17) Local facilitators and Grievance Committee will be engaged to resolve conflicts using grievance redressal mechanism given in chapter 9;</p> <p>18) Site specific Grievance Redress Mechanism will be made in case of conflict zones and security sensitive areas;</p> <p>19) Notables and leaders of the communities shall be engaged prior to start of project implementation through stakeholder engagement framework provided in chapter 5;</p> <p>20) The local police and law enforce agencies shall be engaged prior to the start of the project activities;</p> <p>21) For project staff and interventions, locals shall be given preferences.</p>					

Implementation Plan			Monitoring Plan			
Aspect /Impact	Proposed Mitigation Measures	Responsibility	Monitoring Parameter(s)	Frequency	Responsibility	Compliance Criteria
Eco Tourism						
Environmental Impacts: Solid Waste Liquid Waste Hazardous substances Ecosystems	1) Negative list of activities provided as Annexure 7 must be disallowed; 2) The tourism activities shall not be allowed in protected areas and notified Forest without Site Specific Biodiversity/Ecosystem Management Plan; 3) Timely identification of sensitive habitats and implementation of protective measures (e.g. buffer zones or corridors) to maintain links between natural systems within and beyond the site, limiting habitat fragmentation. 4) All tourism activities must be designed to ensure that there is minimal to no impact on the natural habitat. This will include controlling emissions, safe disposal of wastewater and safe disposal of solid waste. 5) Introduction of new invasive species for landscaping shall be disallowed; 6) Onsite management includes segregation of at source solid waste, use of biological waste for composting and manure formation. Minimising the use of plastic. Hazardous wastes may need to be exported to other locations for disposal. Enterprise specific Solid Waste Management Plan shall be prepared for the interventions generating high amounts of solid waste and use of hazardous substances; 7) Ensure that the location for ecotourism shall have access to waste water sanitation and disposal system. In absence of such systems onsite biological treatment should be used to enable reuse of grey water, which can be reused for irrigating grounds or other non-potable purposes. Grey water from bathrooms, sinks, and kitchens has limited toxicity, requiring minimal treatment, has good reuse potential, and can be easily separated into one stream. Wastewater streams used for this purpose should be carefully monitored to ensure that grey water is not mixed with other sewage resulting in potentially hazardous situations; 8) Plants selection for landscaping shall base on its water requirements. Water intensive species shall not be planted;	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	Solid waste management plan EQS for effluent Compliance to list of hazardous substance as per hazardous substances rules 2000 Biodiversity/Ecosystem Management Plan Water Conservation Plan ESMP	Biannual	Environmental Specialist/ Local Facilitators Technical Resource persons	EQS for Effluent Noise and vehicular emissions Balochistan Forest and Wildlife Protection Act List of protected Areas, endangered species and notified forest ; ECOP 1 to 12 ; World Bank General OHS Guidelines

Implementation Plan			Monitoring Plan			
Aspect /Impact	Proposed Mitigation Measures	Responsibility	Monitoring Parameter(s)	Frequency	Responsibility	Compliance Criteria
	9) Water saving equipment shall be used in at water consumption sources along with installation of water meters; 10) Use of passive solar design to take advantage of natural sunlight and airflow; 11) Incase of proposed tourism interventions requiring large amounts of water, ensure the use of water efficiency and conservation measures and technologies through site specific Water Conservation Plan if required.					
Social Impacts Community health and safety , Archaeological, Religious and Cultural Sites Workers Health and Safety	1) Activities listed in the Negative List of Activities (Annexure 7) shall be prohibited; 2) It should be ensured that there is no use of exploitative forms of forced labour. Labour for the business enterprise will be hired according to labour law and the contractual binding will be added in the agreement documentation. 3) The project will ensure that no child under the age of 18 is hired to work in hazardous conditions (pesticide sprays, industrial activity); and no child under that age of 15 is hired to do any sort of physical exertive labour (general farm labour, mechanic, etc.); and no child under the age of 12 is hired for ANY type of labour; 4) Activities near identified sites of cultural or religion importance will be disallowed. Incase of such an intervention, PCR Management Plan will be prepared and followed; 5) The working environment should be monitored for occupational hazards relevant to the specific project. Monitoring should be designed and implemented by accredited professionals; 6) Training should be given to employees on the recognition and prevention of occupational hazards specifically applicable to work in remote areas such as safety with respect to wildlife; protection against the elements; thermal stress; adaptation and disease exposure; 7) Local labour will be hired. Local norms and customs shall be practiced for social interaction; 8) Voluntary land donations will be encouraged. For any land acquisition, the enterprise developer will ensure the identification of land in un-disputed area not requiring resettlement. In case of any	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	Complaint/Accident Record Health and Safety Management Plan and trainings Annual medical record of workers ESMP EQS parameters for drinking water List of archaeological, religious and Cultural Sites near each project site		Social Safeguard Specialist/ Local Facilitators /Technical Resource persons	PCR Management (Annexure 8) Antiquities Act List of Archaeological Sites World Bank OHS Guidelines and EQS for drinking water ECoP 15 On Cultural and religious conflicts management ECoP 16 on Workers Health and Safety(Annexure 3)

Implementation Plan			Monitoring Plan			
Aspect /Impact	Proposed Mitigation Measures	Responsibility	Monitoring Parameter(s)	Frequency	Responsibility	Compliance Criteria
	<p>resettlement, resettlement policy framework will be followed for the preparation of site specific Resettlement Action Plan.</p> <p>9) The district/village/community leaders and notables will be engaged at the start of the project with agreements on various aspects of implementation of project activities;</p> <p>10) Local facilitators and Grievance Committee will resolve conflicts using grievance redressal mechanism given in chapter 9;</p> <p>11) Site specific Grievance Redress Mechanism will be made in case of conflict zones and security sensitive areas;</p> <p>12) Notables and leaders of the communities shall be engaged prior to start of project implementation through stakeholder engagement framework provided in chapter 5;</p> <p>13) The local police and law enforce agencies shall be engaged prior to the start of the project activities;</p> <p>14) For project staff and interventions, locals shall be given preference.</p>					
Forestry Sector						
Environmental Impacts: Solid Waste Liquid Waste Hazardous substances Ecosystems	<p>1) In case the project is using products from notified forests and protected areas, a site specific Ecosystem/Biodiversity/Forest Management Plan will be prepared to avoid over-harvesting and degradation;</p> <p>2) Prohibit illegal extraction of wood from Protected Areas and Notified Forests;</p> <p>3) Natural vegetation should not be treated with pesticides;</p> <p>4) Sustainable harvesting of medicinal plants and non-timber forest products (NTFPs) shall be ensured;</p> <p>5) Biodiversity reserves should be created, managed, and monitored in each district to protect critical natural habitat, and high conservation value forest as representative samples of existing ecosystems in their natural state;</p> <p>6) Ensure local species are used in case of plantation. Intentional or accidental introduction of alien, or non-native, species of flora and fauna into areas shall be disallowed;</p> <p>7) Natural vegetation in the forest area should be managed to ensure a variety of successional stages and roadside strips should be left</p>	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	Ecosystem/Biodiversity/Forest Management Plan List of protected areas and notified forests ESMP	Biannual	Environmental Safeguard Specialist/Local Facilitators/Technical Resource persons	EQS for Effluent and Noise Balochistan Forest and Wildlife Protection Act List of protected Areas, endangered species and notified forest ; ECoP 1 to 12(Annexure 3) ; World Bank

Implementation Plan			Monitoring Plan			
Aspect /Impact	Proposed Mitigation Measures	Responsibility	Monitoring Parameter(s)	Frequency	Responsibility	Compliance Criteria
	vegetated with natural cover;					General OHS Guidelines
Social Impacts Community health and safety , Archaeological, Religious and Cultural Sites Workers Health and Safety	1) Activities listed in the Negative List of Activities (Annexure 7) shall be prohibited.	Project Management Implementation Unit (PMIU) and enterprise owners/beneficiaries	Health and Safety Management Plan and trainings Archaeological, Religious and Cultural Sites near each project site ESMP	Biannual	Social Safeguard Specialist/ Local Facilitators Technical Resource persons	List of Archaeological Sites PCR Management (Annexure 8) Antiquities Act World Bank OHS Guidelines ECoP 15 On Cultural and religious conflicts management ECoP 16 on Workers Health and Safety (Annexure 3)
	2) The business enterprise owner shall train labour on the safe use of cutting equipment, including work group coordination and safety measures. Equipment should be properly maintained and include all necessary safety devices (e.g. blade guards on saws). Workers should be required to use, all necessary personal protective equipment (e.g. gloves, footwear, protective clothing, helmets). On-site first aid equipment and trained personnel should be available, as well as procedures for emergency;					
	3) Wildfires caused by natural events (e.g. lightning strikes) or human error are one of the most significant risks. Workers shall not smoke and use fire in or near the forests. Fire response and management plans should be prepared with the participation of local authorities and potentially affected communities;					
	4) It should be ensured that there is no use of exploitative forms of forced labour. Labour for the business enterprise will be hired according to labour law and the contractual binding will be added in the agreement documentation.					
	5) The project will ensure that no child under the age of 18 is hired to work in hazardous conditions (pesticide sprays, industrial activity); and no child under that age of 15 is hired to do any sort of physical exertive labour (general farm labour, mechanic, etc.); and no child under the age of 12 is hired for ANY type of labour;					
	6) Activities near identified sites of cultural or religion importance will be disallowed. In case of such an intervention, PCR Management Plan will be prepared and followed;					
	7) The district/village/community leaders and notables will be engaged at the start of the project with agreements on various aspects of implementation of project activities;					
	8) Local facilitators and Grievance Committee will resolve conflicts using grievance redressal mechanism given in chapter 9;					
	9) Site specific Grievance Redress Mechanism will be made in case					

Implementation Plan			Monitoring Plan			
Aspect /Impact	Proposed Mitigation Measures	Responsibility	Monitoring Parameter(s)	Frequency	Responsibility	Compliance Criteria
	<p>of conflict zones and security sensitive areas;</p> <p>10) Notables and leaders of the communities shall be engaged prior to start of project implementation through stakeholder engagement framework provided in chapter 5;</p> <p>11) The local police and law enforce agencies shall be engaged prior to the start of the project activities;</p> <p>12) For project staff and interventions, locals shall be given preferences.</p> <p>13) Voluntary land donations will be encouraged. For any land acquisition, the enterprise developer will ensure the identification of land in un-disputed area not requiring resettlement. In case of any resettlement, resettlement policy framework will be followed for the preparation of site specific Resettlement Action Plan.</p>					

Table 7.3: Construction Specific Environmental and Social Mitigation and Monitoring Framework

Aspect /Impacts	Mitigation Plan		Monitoring Plan			
Aspect /Impacts	Proposed Mitigation Measures	Responsibility	Monitoring Parameters	Frequency	Responsibility	Compliance Criteria
Construction Activities (Agriculture and Livestock, Handicrafts and Industries, Mines and Minerals, Eco-Tourism and Forestry Sectors)						
Air Quality Decline in ambient air quality and increase in noise levels and vehicular emissions due to construction activities in project district	<ol style="list-style-type: none"> 1. Enclosure walls with a height of 2 meters or above will be built around the construction site in areas close to the residing communities; 2. On-site mixing shall be carried out at enclosed space, cement, lime powder and other construction materials shall be stored at storage yard or tightly covered. Discrete materials such as sand and soil must be covered, the building materials to be loaded, unloaded and/or handled shall be covered, closed or sprinkled with water, and none of them shall be thrown or spread into the air; 3. A water channel with its width at 3.5 meter, length at 10 meters and depth at 0.2 meter shall be made at the exit to and from the construction site, in which crushed stones with a diameter at 50 millimetres will be laid, so as to reduce the amount of earth on tires of vehicle to and from the construction site; 4. Materials to be transported shall be covered or transported by enclosed vehicles, routes of transportation vehicles shall avoid residential areas and other environmentally sensitive areas, and vehicle speed shall also be limited; 5. The equipment and construction vehicles shall be regularly maintained to avoid gas emissions; 6. The construction vehicles vehicular exhaust emissions shall comply with EURO II standards adopted by Balochistan EPA. 	Project Management Implementation Unit (PMIU) Construction Contractor	EQS parameters for ambient air quality NO _x , SO _x and CO _x	Biannual	Environmental Specialist/ Local Facilitators /Technical Resource Persons	World Bank/IFC applicable Guidelines for each sector, ECoP for air quality and Noise (Annexure 3) Management and EQS for Ambient Air Quality Annexure 2 EQS Euro II standards for vehicular emissions

Aspect /Impacts	Mitigation Plan		Monitoring Plan			
Aspect /Impacts	Proposed Mitigation Measures	Responsibility	Monitoring Parameters	Frequency	Responsibility	Compliance Criteria
Construction Activities (Agriculture and Livestock, Handicrafts and Industries, Mines and Minerals, Eco-Tourism and Forestry Sectors)						
Water Deterioration of water bodies due to sewerage and effluent disposal	7. Formulate site specific water conservation plans to regulate water use; 8. A simplified sedimentation tank shall be built on the construction site, through which, the construction wastewater may be collected and settled, and then be used for site sprinkling to reduce fugitive dust; 9. The domestic waste water will be discharged into the existing wastewater pipelines or septic tanks; 10. Since the some of the project districts are located in remote areas, septic tanks can be coupled with other onsite wastewater treatment units such as bio filters or aerobic systems involving artificially forced aeration incase of large amount of waste.	Project Management Implementation Unit (PMIU) Construction Contractor	EQS parameters for effluent Water Conservation Plan	Biannual	Environmental Specialist/ Local Facilitators /Technical Resource Persons	EQS for Effluent ECOP 3 and 4 for water and drainage management
Noise Increase in noise level is expected due to construction activities	1. Construction contractor shall use advanced equipment and technologies of low noise, and this requirement shall be a principal criterion for selecting contractors during the bidding process; 2. The use of high noise generating equipment such as a percussion piling machine or pneumatic hammer shall be prohibited; 3. The working time and construction schedule must be arranged rationally, construction contractor shall make reasonable arrangements to ensure machinery is not used during night time near residential areas.	Project Management Implementation Unit (PMIU) Construction Contractor	EQS for Noise levels during day and night time	Biannual	Environmental Specialist/ Local Facilitators /Technical Resource Persons	EQS for noise ECOP 9 for Noise and vibration (Annexure 3)
Solid Waste Improper solid waste disposal can result in increased air pollution through burning of waste, vector borne diseases, contamination of water sources and ambient aesthetics for surrounding communities. The impacts are likely to be high.	1. Prepare a site specific Solid Waste Management and Disposal Plan; 2. All solid waste from the construction site must be transported to a specified outside storage yard for construction refuse for centralized disposal. 3. Domestic waste of will be collected and transported to designated landfill site for land-filling. Ensure domestic waste is not burnt or dumped into forests, streams or natural water bodies. 4. In absence of disposal system, the waste will be segregated at source into kitchen waste, plastic, glass, paper and metal separately. The kitchen waste will be composted with and all other dry waste shall be given to the local dealers for reuse and recycling; 5. Construction workers will be trained on segregation, storage and disposal of domestic and hazardous waste; 6. Hazardous material listed in the World Bank Guidelines and	Project Management Implementation Unit (PMIU) Construction Contractor	Solid Waste Management and Disposal Plan List of hazardous substance	Biannual	Environmental Specialist/ Local Facilitators /Technical Resource Persons	Hazardous Substance Rules 2003 ECOP 1 for solid waste management (Annexure 3)

Aspect /Impacts	Mitigation Plan		Monitoring Plan			
Aspect /Impacts	Proposed Mitigation Measures	Responsibility	Monitoring Parameters	Frequency	Responsibility	Compliance Criteria
Construction Activities (Agriculture and Livestock, Handicrafts and Industries, Mines and Minerals, Eco-Tourism and Forestry Sectors)						
	Hazardous Substances Rules 2000 shall not be used in construction. It will be ensured through contractual binding with the construction contractor.					
Resource Consumption Increase in Water /Electricity / Fuel Consumption due to project activities promoting businesses	<ol style="list-style-type: none"> 1. Site specific Water Conservation Plan will be prepared if the water consumption is high during construction. 2. The workers will be trained on sustainable use of water; 3. Visual inspections will be carried out for leaks and water usage. 4. Installation of solar panels is recommended for electricity considering terrain of Balochistan; 5. Provision of Low Voltage electrical appliances will be made in procurement procedures; 6. Prepare site and enterprise specific energy and water conservation plan for construction be made part of contract with enterprise owner. 	Project Management Implementation Unit (PMIU) Construction Contractor	Water Conservation Plan Water, electricity and fuel consumption plan	Biannual	Environmental Specialist/ Local Facilitators /Technical Resource Persons	Water , Electricity and Fuel Consumption
Natural Hazards	<ol style="list-style-type: none"> 1. Building Codes of Pakistan with Seismic provision and international best practices will be made part of construction contractors agreement for designing buildings according to earthquake zones; 2. Provision of structural engineering measures like shear walls, braced frames, moment resisting frames, and diaphragms, base isolation, energy dissipating devices and bracing of non-structural components are proposed. Simpler techniques include avoiding soft stories and bolting the sill plate of houses to the foundation; 3. Inclusion of emergency exits and alarm system in building design. 	Project Management Implementation Unit (PMIU) Construction Contractor	Earthquake resistant building design	At the time of construction/ design	Environmental Specialist/ Local Facilitators /Technical Resource Persons	Building Codes of Pakistan with Seismic provision
Biodiversity/Ecosystem There are number of biodiversity sensitive areas, endangered species and habitats in the project districts	<ol style="list-style-type: none"> 1. Ensure construction activities do not take place in protected areas or notified forests; 2. Ensure wood used for construction has not been sourced illegally from protected areas and notified forests; 3. Incorporate technical design measures to minimize unnecessary removal of trees and vegetative cover; 4. Compensatory planting of eight trees shall be practices against each 	Project Management Implementation Unit (PMIU) Construction	List of protected area, endangered species near project sites	Biannual	Environmental Specialist/ Local Facilitators / Technical Resource	ECOP 10, 11 and 12 on Flora Fauna and fish. (Annexure 3) Balochistan Forest and

Aspect /Impacts	Mitigation Plan		Monitoring Plan			
Aspect /Impacts	Proposed Mitigation Measures	Responsibility	Monitoring Parameters	Frequency	Responsibility	Compliance Criteria
Construction Activities (Agriculture and Livestock, Handicrafts and Industries, Mines and Minerals, Eco-Tourism and Forestry Sectors)						
	fallen tree of similar floral function; 5. Use of invasive/ exotic species for shall be disallowed and native species will be recommended for plantation. 6. Locations for business enterprises shall be selected outside/at a reasonable distance from the environmentally sensitive areas and archeological/cultural and religious sites of importance.	Contractor			Persons	Wildlife Protection Act
Workers Health and Safety Use of heavy machinery and handling of chemicals by workers can result in health impacts and accidents.	1. Health kits, first aid kits and emergency medical supplies shall be made available at construction sites. Location of the nearest medical facility to the construction sites and accessibility will be ensured; 2. Provision of clean drinking water will be ensured for the construction crew; 3. Hygiene inspections will be carried out to avoid disease epidemic; 4. Construction Contractor must prepare a site specific Fire Safety Plan. In case of unlikely incidents (fire, vandalism) the workers will be evacuated and emergency response and law enforcement agencies will be engaged; 5. Fire extinguisher will be placed at construction sites, whereas, fire safety and emergency response trainings will be conducted ; 6. The construction crew shall be trained on important aspects of workplace/confined space safety; 7. Construction machinery operators and drivers shall be trained to avoid associated accidents with inappropriate use of machines and vehicles; 8. Flammables and other toxic materials will be marked and stored at secured location; 9. First aid kits will be kept at randomly moving vehicles\machinery; 10. Provision of useful Personal Protective Equipment (PPE) will be given to workers such as gloves, vests, hard-hats, masks etc.	Project Management Implementation Unit (PMIU) Construction Contractor	Complaint / Accident Record Health and Safety Management Plan and trainings Annual medical record of workers EQS parameters for drinking water	Biannual	Social Safeguard Specialist/ Local Facilitators	World Bank general OHS Guidelines; ECOP 16 Workers Health and Safety Management Annexure 3

Aspect /Impacts	Mitigation Plan		Monitoring Plan			
Aspect /Impacts	Proposed Mitigation Measures	Responsibility	Monitoring Parameters	Frequency	Responsibility	Compliance Criteria
Construction Activities (Agriculture and Livestock, Handicrafts and Industries, Mines and Minerals, Eco-Tourism and Forestry Sectors)						
Public health and safety The project is not going to finance large scale infrastructure. However the construction activities and movement of heavy vehicles may impact public safety. Similarly emissions and noise from the site may impact the health of residing communities	1. Train drivers operating heavy vehicles on road and pedestrian safety. Set appropriate speed limits to avoid accidents; 2. If schools, hospital and communities are present near construction sites, use of heavy vehicles on public roads will be avoided. Provision of alternate routes for use by the public; 3. Placement of construction and diversion signage, particularly at urban areas and at sensitive/accident-prone spots, in accordance to a Public Safety Plan; 4. Notables and leaders of the communities shall be engaged prior to start of project implementation through stakeholder engagement framework provided in chapter 5; 5. The local police and law enforce agencies shall be engaged prior to the start of the project activities; 6. For project staff and interventions, locals shall be given preferences.	Project Management Implementation Unit (PMIU) Construction Contractor	Public Safety Plan	Biannual	Social Safeguard Specialist/ Local Facilitators / Technical Resource Persons	World Bank general OHS Guidelines ECoP
Archaeological, Religious and Cultural Sites The project sites may include religiously and culturally important sites. Excavation work during construction may result in the uncovering of ancient sites or artefacts.	1. The construction work will be stopped at the time of the funeral and burial at the grave yard. 2. Construction staff will be trained and informed on identifying the evidence of archaeological/historic remains; 3. In case evidence of archaeological remains is found during construction activities, the actions listed below will be undertaken. 4. Excavation work in the vicinity of the find will be stopped; 5. Assistance will be sought from the nearest office of the Department of Archaeology and Museums to identify the remains; 6. If the department decides to salvage the find, PMD will provide assistance. 7. Detailed procedure for Archaeological Chance Finds included in Annexure 8 .	Project Management Implementation Unit (PMIU) Construction Contractor	List of archaeological, Religious and Cultural Sites near each project site	At the start of Construction	Social Safeguard Specialist/ Local Facilitators / Technical Resource Persons	RPF and WB OP 4.12 ECoP 15 On Cultural and religious conflicts management (Annexure 3)

7.7 Monitoring and Reporting

This section presents the monitoring and reporting (M&R) system which is a continuous process of collecting, collating and analysing information about the progress of ESMF and RPF implementation and a tool for identifying strengths and weaknesses of the process. Periodic evaluation of the process and the outcomes will enable P&DD to identify deficiencies and implement corrective measures to achieve the desired goals and objectives of the ESMF.

7.7.1 Internal Monitoring

Implementation of ESMF activities will be internally monitored by the Environmental and Social Safeguards Specialists at PMIU, Local Facilitators and Technical Resource Persons on a regular basis. Project Director will ensure that mitigation measures which require administrative approval remain under his/her direct reporting. In addition, Monitoring and Evaluation Officer can also be requested to conduct random monitoring of supported enterprises during visits. Monitoring reports by M&E Officer, Local Facilitators and Technical Resource Persons will be submitted to the Environmental and Social Safeguard Specialists in PMIU for necessary corrective action. The objectives of the internal monitoring will be to:

- Monitor the timely progress of key activities;
- Verify the compliance with safeguard measures;
- Document and disclose the monitoring results and identify necessary corrective and preventive actions in the periodic monitoring reports; and
- Follow up on the corrective and preventive actions to ensure progress toward the desired outcomes.

If RAPs are prepared for sub-projects, internal monitoring will be carried out routinely by PMIU and their results will be communicated to concerned Project Affected Persons and to World Bank through the quarterly project implementation reports. Indicators for the internal monitoring will be those related to process and immediate outputs and results. This information will be collected directly from the field by PMIU and reported monthly to the P&DD to assess the progress and results of RAP implementation, and to adjust the work program accordingly (if necessary). The monthly progress reports will be consolidated on quarterly basis and will be submitted to World Bank every six months. Specific monitoring indicators will be as follows:

- Information campaign and consultation with PAPs;
- Status of land acquisition and payments on land compensation;
- Status of payments on affected structures and other assets compensation;
- Status of payments for resettlement allowances;
- Relocation of AHs;
- Payments for loss of income and income restoration activities;
- Ensure the mitigation measures adopted for gender issues; and
- Ensure the resettlement activities are implemented following a planned time frame.

Information on the status and effectiveness of the key activities from the Project site will be collected by PMIU through following instruments:

- Review of census information of PAPs;
- Consultation and informal interviews with PAPs;
- Interviews with key informants; and
- Community public meetings.

7.7.2 External Monitoring

External Monitoring will be used to ensure that project activities are being conducted in line with this ESMF. Third Party Validation (TPV) exercises, conducted through an independent monitoring agency will be carried out on annual basis to evaluate the overall compliance of the ESMF, implementation progress, and to ensure that the mitigation measures are implemented as per the mitigation plan. In case of any deviation, corrective actions will be taken where necessary. For the TPV, environmental and social consultants with relevant expertise and previous experience will be engaged. The PMIU may hire the services of environmental or social experts (consultants), if required, to address issues related to environmental and social impact mitigation or non-conformity that emerge from monitoring activities.

7.7.3 Reporting Requirements

The Environment and Social Safeguards Specialists will compile and evaluate monitoring reports from Local Facilitators, Technical Resource Persons and third party monitoring. The compiled reports and mid-course correction actions will be shared with the Project Director and World Bank. The Environment and Social Safeguards Specialists will be responsible to prepare and circulate ESMF progress reports on a bi-annual basis. These bi-annual Progress Reports will provide progress on implementation of mitigation measures, safeguard monitoring, capacity building, and any other ESMF implementation activity carried out during the reporting quarter. These reports will be shared with, among others, the World Bank within one month of the completion of the six months. The M&E documents and other social reports will also be publicly available, including posting in project website. A Third-Party Validation will be conducted annually to assess ESMF compliance.

7.8 Capacity Development and Trainings

To ensure the successful implementation of the environmental and social precautions and mitigation measures, a strengthening of relevant and fundamental competencies is essential. Therefore, a training and capacity building training framework is proposed for BLEP. These trainings will lay the foundation of a sustainable outreach for the BLEP projects and its facilitators. The objectives of the environmental and social trainings include providing basic knowledge and information on the key environmental and social issues associated with the proposed interventions to the key project personnel including the Contractors, Local Facilitators, Technical Resource Persons and general project staff. Specific trainings on environmental and social impacts and mitigation will be arranged for the district level project staff, local facilitators and technical resource persons. The main objective of the trainings is to enhance the technical capacity of staff

associated with ESMF implementation and to keep the PMIU Team aware of the emerging environmental and social issues.

Table 7.4 gives a tentative program for capacity building and trainings. The workshops will focus on environmental and social issues arising during ESMF implementation, mitigation measures, and health & safety. They will also focus on sensitizing the participants about environmental and social responsibility, managing the on-ground problems, and ensuring implementation of the ESMF. Each workshop will have no more than 40 participants. In case of extra participants, extra workshops will be conducted. Total of 125 annual and biannual trainings will be conducted over 5 years.

Table 7.4: Capacity Building and Training Framework

Description of Training	Training Module	Responsibility	Frequency	Participation
Environment and Social Management Framework	Objectives, need and use of ESMF; Legal requirements of the ESMP (Legislations and World Bank Operational Policies) ; Management of environmental and social issues and mitigation strategies as per ESMF; Monitoring Mechanism Documentation and reporting procedures.	Environment Specialist, Social Specialist, and Gender Specialist	Annual workshops	PMIU staff
Sector and District Specific Environmental and Social Safeguards Trainings	Subproject screening; Subproject monitoring and reporting; Sector specific ESMPs and their components; ESMP implementation; GRM; RPF; Community consultations; Child and forced labour; Gender Based Violence	PMIU with the assistance of Environment Specialist, Social Specialist, and Gender Specialist	Biannual in each district	Government departments of each sector present in each district Local Facilitators Technical Resource Persons
Sector and District Specific Environmental and Social Safeguards Trainings	Subproject screening; Subproject monitoring and reporting; Sector specific ESMPs and their components; ESMP implementation; GRM; RPF; Community consultations; Child and forced labour; Gender Based Violence	Technical Resource Persons and Local Facilitators	Ongoing as part of project mobilization and implementation of activities	Beneficiaries
Environmental and Social Impacts of Construction	ESMF with special focus on mitigation measures during construction stage; Community and occupational Health and	PMIU with the assistance of Environment Specialist, Social	Annual in each district	Contractors, sub-contractors, and supervision consultants

Description of Training	Training Module	Responsibility	Frequency	Participation
	Safety	Specialist, and Gender Specialist		

8 Resettlement Policy Framework

This section provides the resettlement policy framework to address issues related to land acquisition and resettlement as required by World Bank OP/BP 4.12 Involuntary Resettlement. Component 2 'Promoting Enterprise Development and Livelihoods' may include the construction or rehabilitation of infrastructure, however at a small scale. Since these interventions will be through community groups and social mobilization, all possible efforts will be taken by the project to construct these facilities on land voluntarily donated by an individual, a group of individuals or the community as a whole. It is confirmed that the project will not require medium or large scale land acquisition. This chapter provides a framework for Voluntary Land Donation in addition to the Resettlement Policy Framework. Where there are gaps between national laws and WB's policy on Involuntary Resettlement, a practical approach has been designed which is consistent with Government practices as well as WB's Policy.

8.1 Voluntary Land Donation (VLD) Framework

This Voluntary Land Donation (VLD) Framework has been prepared to ensure that due diligence will be conducted by the project before the implementation of any interventions/sub-projects that involve construction or require land. A sub-project requiring land on a permanent or temporary basis will be dropped if the VLD related criteria provided in this framework are not met.

Voluntary donation of land is an act of free and informed consent. Project staff must ensure that voluntary contributions are obtained without coercion or duress. Project Affected Persons (PAPs) have the right to refuse to donate assets and receive their entitlement and compensation for their land and assets lost. They will be fully informed of their rights and access to grievance mechanisms described in this RPF.

8.1.1 Due Diligence

Due diligence for Voluntary Land Donation will be conducted and documented during the screening phase of each sub-project/intervention requiring land. Due diligence will cover at least the following:

- i. Verification and documentation that land required for the sub-project is given voluntarily and the land to be donated is free from any dispute on ownership or any other encumbrances;
- ii. The land must be jointly identified by the Revenue Department, beneficiary community and project representative. Project team must ensure that the land is appropriate for sub-project purposes and that the sub-project will not result in any adverse social or environmental impacts by using this land;
- iii. To avoid elite capture of the sub-project, efforts must be taken to spread land donation over a number of owners rather than one influential land owner;
- iv. The Titleholder donating land should be made to understand that they will have equal access to the infrastructure built on the donated land like any other community member and that they cannot claim for any priority treatment;

- v. Verification that the donated land does not cause any physical or economic displacement
- vi. Verification that the donated land/assets are no more than 10% of the total assets of the individual;
- vii. In case of communal land, acquire consent of 90% of land owners through a consultative process;
- viii. The land titleholder should not belong to vulnerable sections of society, unless he/she is a direct beneficiary of the subproject (i.e., donated parcel of land would result in net gains in that person's livelihood). Vulnerable sections are:
 - households below the poverty line (with a valid government issued proof);
 - Women headed households with women as sole earners who may lose their shelter or livelihood due to land donation;
 - Handicapped persons who may lose their shelter or livelihood due to land donation,
- ix. Ensure free and informed consent through meaningful consultations conducted in good faith with all potential land donors. Documented verification that land donors are in agreement with the sub-project and its benefits;
- x. Ensure separate discussions are held with vulnerable donors such as women, elderly and orphans to facilitate meaningful participation and ensure there is no coercion by other land donors;
- xi. Verification that land is free from any encroachments;
- xii. Verification that land donation will not displace tenants or bonded labour, if any, from the land;
- xiii. Verification that land donated is not land used by indigenous/local peoples either traditionally or customarily;
- xiv. Assurance that a community mechanism for sub-project implementation is operational and has a fair system of grievance redress, as well as a system for project monitoring and reporting.

8.1.2 VLD Documentation

Project staff will document the voluntary land donation due diligence for each sub-project that requires donation of private or communal land through the following means:

- i. Completion of VLD Screening Checklist at sub-project planning/screening stage (format provided as **Annexure 14**);
- ii. Completion and signing of the written consent form for voluntary land donation on Stamp Paper of Rs.100 verified by notary public, by all donors (in Urdu) (format provided as **Annexure 15**);
- iii. Verification of donation and signing of consent form by two witnesses who are community leaders but not beneficiaries of the sub-project to ensure that the land was voluntarily donated without any form of coercion or duress;

- iv. The voluntary land donation due diligence information will be verified during detailed design preparation of the sub-project and updated as necessary.

8.1.3 Voluntary Land Donation Monitoring

Voluntary land donation will be monitored by BLEP project staff and periodically reviewed by the World Bank. During review missions, WB will verify that land donation due diligence has been conducted in accordance with the above procedures.

8.1.4 Grievance Redress Mechanism

Anticipated grievances may relate to coercion for land donation or a donation of more than 10% of private land holding. Any complaint will go to the grievance redress committee (GRC) established for the project and detailed in this ESMF.

8.2 Objectives of Resettlement Policy Framework

In case of land acquisition by the project, this RPF is prepared to establish resettlement principles and to provide guidance for assessment and resettlement planning. The RPF fulfils the requirements of local laws and World Bank's Operational Policy on Involuntary Resettlement, OP 4.12.

The RPF establishes the resettlement and compensation principles, the organizational arrangements and the resettlement planning for the affected population during the Project implementation stage. All efforts will be deployed to avoid resettlement and reduce disruption at the Project implementation stage.

8.3 Requirement of Resettlement Policy Framework

Component 2 of the project may include construction of new infrastructure, and/or reconstruction/rehabilitation of existing infrastructure which may require land acquisition (however at small scale). Though every effort will be taken to prioritize Voluntary Land Donation, there is a chance that resettlement may be required. Therefore, World Bank's Operational Policy on Involuntary Resettlement, OP 4.12 is triggered. As sub project locations are not known at this stage, this Resettlement Policy Framework (RPF) has been developed. If there is a need for land acquisition at the sub-project stage, the IA (PMIU) will be responsible for preparing a Resettlement Action Plan (RAP) in line with this RPF and submit to the World Bank for review and clearance prior to project Implementation. The Resettlement Policy Framework covers the following:

8.3.1 Avoid Land Acquisition and Involuntary Resettlement

Land Acquisition and Involuntary Resettlement will be avoided where feasible, or minimized, by identifying possible alternative project designs that have the least adverse impact on the communities in the project area. Where displacement of households is unavoidable, all PAPs losing assets, livelihoods or resources will be fully compensated and assisted so that they can improve, or at least restore, their former economic and social conditions. Compensation and rehabilitation support will be provided to any PAPs, that is, any person or household or business which on account of project implementation would have his, her or their:

- Standard of living adversely affected;
- Right, title or interest in any house, interest in, or right to use, any land (including premises, agricultural and grazing land, commercial properties, tenancy, or right in annual or perennial crops and trees or any other fixed or moveable assets, acquired or possessed, temporarily or permanently;
- Income earning opportunities, business, occupation, work or place of residence or habitat adversely affected temporarily or permanently; or
- Social and cultural activities and relationships affected or any other losses that shall be identified during the process of resettlement planning.

8.3.2 Eligibility for Compensation

All affected people will be eligible for compensation and rehabilitation assistance, irrespective of tenure status, social or economic standing and any such factors that may discriminate against achievement of the objectives outlined above. OP 4.12 defines eligibility criteria as the following:

Displaced persons may be classified in one of the following three groups:

1. those who have formal legal rights to land (including customary and traditional rights recognized under the laws of the country);
2. those who do not have formal legal rights to land at the time the census begins but have a claim to such land or assets--provided that such claims are recognized under the laws of the country or become recognized through a process identified in the resettlement plan; and
3. those who have no recognizable legal right or claim to the land they are occupying.

Persons covered under the first two categories are provided compensation for the land they lose, and other assistance in accordance with OP4.12. Persons in the third category are provided resettlement assistance in lieu of compensation for the land they occupy, and other assistance, as necessary, to achieve the objectives set out in OP4.12.

8.3.3 Entitlements without Legal Claims to Land

Lack of legal rights to the assets lost or adversely affected tenure status and social or economic status will not bar the PAPs from entitlements to such compensation and rehabilitation measures or resettlement objectives. All PAPs residing, working, doing business and/or cultivating land within the project impacted areas as of the date of the latest census and Inventory of Lost assets, are entitled to compensation for their lost assets (land and/or non-land assets), at replacement cost, if available and restoration of incomes and businesses, and will be provided with rehabilitation measures sufficient to assist them to improve or at least maintain their pre-project living standards, income-earning capacity and production levels. Encroachers will not be eligible for compensation of land however they will be entitled for the compensation of structures.

PAPs that lose only part of their physical assets will not be left with a portion that will be inadequate to sustain their current standard of living. The minimum size of

remaining land and structures will be agreed during the resettlement planning process. People temporarily affected are to be considered as PAPs and resettlement plans address the issue of temporary acquisition. Where a host community is affected by the development of a resettlement site in that community, the host community shall be involved in any resettlement planning and decision-making. All attempts shall be made to minimize the adverse impacts of resettlement upon host communities.

8.3.4 Compensation and Rehabilitation

Payment for land and/or non-land assets will be based on the principle of replacement cost. Solely cash compensation will be avoided as an option if possible, as this may not address losses that are not easily quantified, such as access to services and traditional rights, and may eventually lead to those populations being worse off than without the project. Compensation for PAPs dependent on agricultural activities will be land-based wherever possible. Land-based strategies may include provision of replacement land, ensuring greater security of tenure, and upgrading livelihoods of people without legal land titles. If replacement land is not available, other strategies may be built around opportunities for re-training, skill development, wage employment, or self-employment, including access to credit. Replacement lands, if the preferred option of PAPs, should be within the immediate vicinity of the affected lands wherever possible and be of comparable productive capacity and potential³⁹⁸. As a second option, sites should be identified that minimize the social disruption of those affected; such lands should also have access to services and facilities similar to those available in the lands affected.

8.3.5 Livelihood Restoration

Losses of livelihoods due to land acquisition will be assessed during field surveys. In case land acquisition affects commercial structures, in addition to the compensation of affected assets, PAPs will be compensated for lost net income during the transition period, and for the costs of the transfer and reinstallation of the plant, machinery, or other equipment. Moreover, PAPs will get priority in Project-related jobs and labour according to their education and skills.

8.3.6 Resettlement Assistance

Resettlement assistance will be provided not only for immediate loss, but also for a transition period needed to restore livelihood and standards of living of PAPs. Such support could take the form of short-term jobs, subsistence support, salary maintenance, or similar arrangements.

8.3.7 Vulnerable Groups

The resettlement plan must consider the needs of those most vulnerable to the adverse impacts of resettlement including the poor, those without legal title to land, ethnic minorities, women, children, elderly and disabled and ensure they are considered in

³⁹⁸ Agricultural land for land of equal productive capacity means that the land provided as compensation should be able to produce the same or better yield the AP was producing on his/her land prior to the project. The production should be in the planting season immediately following the land acquisition. It can be for a future period if transitional allowance equal to the household's previous yield is provided to the AP household while waiting for the land to get back to the same productivity as the previous land.

resettlement planning and mitigation measures identified. Assistance should be provided to help them improve their socioeconomic status PAPs will be involved in the process of developing and implementing resettlement plans

8.3.8 Consultation

Communities will be consulted about the project, the rights and options available to them, and proposed mitigation measures for adverse effects, and to the extent possible be involved in the decisions that are made concerning their resettlement.

8.3.9 Measures to Avoid Adverse Impacts

Adequate budgetary support will be fully committed and made available to cover the costs of land acquisition (including compensation and income restoration measures) within the agreed implementation period. The funds for all resettlement activities will come from the Government.

8.3.10 Timing of Relocation

Displacement does not occur before provision of compensation and of other assistance required for relocation. Sufficient civic infrastructure must be provided in resettlement site prior to relocation. Acquisition of assets, payment of compensation, and the resettlement and start of the livelihood rehabilitation activities of PAPs, will be completed prior to any construction activities, except when a court of law orders so in expropriation cases. (Livelihood restoration measures must also be in place but not necessarily completed prior to construction activities, as these may be ongoing activities.)

8.3.11 Organization and Administrative Arrangements

Organization and administrative arrangements will be identified and in place prior to the commencement of the process; this will include the provision of adequate human resources for supervision, consultation, and monitoring of land acquisition and rehabilitation activities.

8.3.12 Monitoring and Reporting

Appropriate reporting (including auditing and redress functions), monitoring and evaluation mechanisms, will be identified and set in place as part of the resettlement management system. The RAP implementation will be monitored internally as well as externally. The PMIU's Environment and Social Cell will internally monitor and evaluate the resettlement process during the pre-construction and construction stages of Project. An external monitoring agency with the consent of WB may also be hired by the project and will evaluate the resettlement process and final outcome. Such groups may include qualified Non-governmental Organization (NGOs), research institutions or universities.

8.3.13 Cut-off Date

The cut-off-date of eligibility refers to the date prior to which the occupation or use of the project area makes residents/users of the same eligible to be categorized as PAPs

and be eligible to Project entitlements. The establishment of the eligibility cut-off date is intended to prevent the influx of ineligible non-residents who might take advantage of Project entitlements. However, project cannot force the owners of the land not to make any transactions unless section 4 is announced. After the announcement of the section 4, final inventory of the affected assets will be prepared by the respective line departments and RAP will be updated accordingly.

Normally, this cut-off date is the date the census begins. The cut-off date could also be the date the project area was delineated, prior to the census, provided that there has been an effective public dissemination of information on the area delineated, and systematic and continuous dissemination subsequent to the delineation to prevent further population influx.

8.3.14 Linking Resettlement Activities to Civil Work

All resettlement related activities, particularly payments of compensation and relocation site development, will be completed prior to project civil works. The acquired land and other assets for example, housing/commercial structures will not be demolished without compensation being paid and/or alternative housing/ resettlement sites being provided. For project activities requiring relocation or resulting in loss of shelter, the affected persons will be informed of the project activities and schedule such as (a) target dates for start and completion of civil works; (b) timetables for transfers and possession of land from the affected households; and (c) a full schedule of project work, including specific project activity involving land acquisition, relocation and resettlement. Thus, the framework will ensure proper timing and coordination of the civil works so that no affected person will be displaced (economically or physically) due to civil works activity, before compensation is paid and before any project construction works can begin.

8.3.15 Eligibility and Entitlements

The eligibility and entitlement will follow the approved entitlement matrix which covers a wide range of losses. The following table summarizes various entitlements against losses.

Table 8.1: Entitlements Matrix

No	Type of loss	Entitled Persons (Beneficiaries)	Entitlement (Compensation Package)	Implementation issues/Guidelines	Responsible Organization
1.	Loss of agricultural land, pond, ditches and orchards etc.	Legal owner(s) of land	Market value of land including 15% compulsory land acquisition surcharge.	Market price of the land will be computed by the District price assessment committee keeping in view the recent transactions in the area, quality of land and demand of the land owners. The Project through District Collector will pay cash compensation through crossed cheque.	All the funds will be provided by the project however land acquisition and disbursement of payments is the responsibility of Revenue Department
2.	Loss of access to cultivable	Tenants/sharecropper/ Legal	Based on current market value of land	Market price of the land will be computed by the District	All the funds will be provided by the

No	Type of loss	Entitled Persons (Beneficiaries)	Entitlement (Compensation Package)	Implementation issues/Guidelines	Responsible Organization
	land by owner cultivator/ tenant/ sharecropper	owner/grower/ socially recognized owner/ lessee/ unauthorized occupant of land	including 15% compulsory land acquisition surcharge.	price assessment committee keeping in view the recent transactions in the area, quality of land and demand of the land owners. The Project through District Collector will pay cash compensation through crossed cheque.	project however land acquisition and disbursement of payments is the responsibility of Revenue Department
3.	Loss of homestead/ residential/ commercial/ CPR plots by owners/authorities	Legal owner(s) of the land	Market value of land including 15% compulsory land acquisition surcharge Lump sum dislocation allowance per household. Provision of basic infrastructures at new resettlement area such as access road, drinking water supply, sanitation, schools, electricity, mosque, health facility and commercial area free of cost. Those households moving on their own (i.e., self-managed relocation) will receive an additional amount as allowances for self-managed relocation.	Market price of the land will be computed by the District price assessment committee keeping in view the recent transactions in the area, quality of land and demand of the land owners. Project through District Collector will pay for the land. Project will develop the resettlement sites with provision of basic amenities as electricity, potable water, roads	Project through District Collector will pay for the land. Relocation site development will be the responsibility of the project.
4.	Loss of trees	Person with legal ownership of the land Socially recognized owner/ unauthorized occupant of the trees/ fishes	Market value of the lost item	Values of lost items computed based on RFS and rates taken from local market	Compensation of trees and other land based assets will be included in the land award and will be paid by the revenue department Compensation of fish stock will be paid directly by the project
5.	Loss of residential /commercial structure by owner(s)	Legal titleholder Owner(s) of structures	Replacement value of residential structure. Lump sum Relocation grant per affected Household. Special assistance of one-time payment for each female, disabled, elderly headed and very poor households. Owner will be	Applicable to all structures located within the acquisition areas. District Collector with expertise from Works and Services Department will determine the replacement value	Replacement value, Relocation grant and special assistance will be paid directly by the project

No	Type of loss	Entitled Persons (Beneficiaries)	Entitlement (Compensation Package)	Implementation issues/Guidelines	Responsible Organization
			allowed to take away all salvageable materials free of cost.		
6.	Loss of residential /commercial structure by squatters and unauthorized occupants	Informal settlers / squatters / non-tilted APs occupying public land without title/ or squatting on Govt. land	Replacement value of residential structure. Relocation grant per affected structure. Special assistance of one-time payment for each female, disabled, elderly headed and very poor households. Owner will be allowed to take away all salvageable materials free of cost.	Applicable to all structures located within the acquisition areas. District Collector with expertise from Works and Services Department will determine the replacement value	Replacement value, relocation grant and special assistance will be paid directly by the project
7.	Loss of access to residential houses/ commercial structures (Owners/rented or leased)	Tenants of rented/ leased properties	Structures will be compensated based on Replacement Value of residential structure. Relocation grant per affected structure. Special assistance of one-time payment for each female, disabled, elderly headed and very poor households. Owner will be allowed to take away all salvageable materials free of cost.	Applicable to all structures located within the acquisition areas. District Collector with expertise from Works and Services Department will determine the replacement value	Replacement value, relocation grant and special assistance will be paid directly by the project
8.	Loss of standing crops	Cultivators identified by District Collector through land acquisition survey	Market value of standing crops. Owners will be allowed to harvest of standing crops prior to be affected.	Applicable for all crops standing on land within the acquisition area at the time of dispossession. Project will pay through District Collector for crops. District Collector with assistance from Department of Agriculture will recommend resettlement value of crops at harvest.	Compensation of crops will be included in the land award and will be paid by the revenue department
9.	Loss of business by CBEs due to dislocation	Owner/operator of the business as recorded by RFS	Compensation equivalent to Three months income from the business calculated during RFS One time Moving Assistance	Business owners will be paid the entitlements after award of compensation by District Collector to the owner of premises.	P&DD will directly pay the entitlement to the eligible affected persons.
10	Loss of Income and work days	Household head /	Grant to cover temporary loss of	Affected person must have been an employee of	P&DD will directly pay the entitlement

No	Type of loss	Entitled Persons (Beneficiaries)	Entitlement (Compensation Package)	Implementation issues/Guidelines	Responsible Organization
	due to displacement	employees identified by the RFS	regular wage income for three months	landowner or business located in the acquired lands for at least twelve months, as identified by the RFS.	to the eligible affected persons.
11	Poor and vulnerable households	Poor and vulnerable households including informal settler, squatters /women headed household without elderly son/ non-titled APs identified by RFS	Special assistance through additional amount included in their compensation package.	Vulnerable household must be identified during RFS.	P&DD will directly pay the entitlement to the eligible affected persons.
12	Displacement of community structure	Community structure representative as identified by the RFS	The project will construct the structures for common properties in the self-managed resettlement sites selected by the PAPs.	Land for common structures will be purchased/ acquired by the Project.	Project will directly pay the entitlement to the eligible affected persons.
13	Temporary impact during construction	Community / Individual	Compensation equal to loss during construction	Temporary impact during construction will be computed by Project Management Unit on request of affected person.	Project will directly pay the entitlement to the eligible affected persons.
14	Unforeseen impact	Concerned impacted persons	Entitlements will be determined as per the resettlement policy framework	The unforeseen impacts will be identified through special survey by the PMIU. The entitlements will be approved by P&DD and concurred by the WB.	Compensation of land based assets will be included in the land award and will be paid by the revenue department Compensation of other assets will be paid directly by the project.
15	Public Structure	Concerned Department	Replacement of affected structures	P&DD and concerned department with the help of LAC will be responsible for the replacement of the affected public structures with the financial assistance of the project at appropriate site.	Project will be responsible for financial assistance
16	Severe impact	Persons losing more than 10% of their income from all sources	One time severe impact allowance per household. One person from the household will be eligible for labor work or job according to its	The one time severe impact allowance will be paid by Project.	Project will be responsible to pay the severe impact allowance.

No	Type of loss	Entitled Persons (Beneficiaries)	Entitlement (Compensation Package)	Implementation issues/Guidelines	Responsible Organization
			skills and education.		

8.4 Preparing Resettlement Action Plans (RAP)³⁹⁹

8.4.1 Methodology of Screening

Following the RPF, P&DD will undertake assessment of all impacts of different projects, any unanticipated impacts or additional land acquisition required during the implementation of the projects. The steps to be followed for screening include:

1. A rapid assessment of the impacts and consultation with the affected persons and communities.
2. Considerations to minimize impacts and or options to reduce impacts.
3. Conduct full assessment of impacts by involving all stakeholders, particularly the affected persons, and establish a full inventory of all assets to be acquired.
4. Prepare Resettlement Action Plan (RAP) for all the sub-projects requiring land acquisition.
5. The approved Entitlement matrix will guide the planning and compensation for all losses incurred due to the unanticipated impacts and/ or acquisition of additional properties. New entitlements may be developed depending the scale of any specific impacts caused by the construction of the project.
6. The RAPs prepared will be disclosed to the affected persons and shared with WB for concurrence and approval.

All affected households will be identified using complete census of population and affected households, the structures in different uses, the different trees, and public facilities as separate survey of all affected land of different type will also be under taken.

8.4.2 Community Participation and Consultations

The RAP will include the following to ensure involvement and consultations with resettlers and host communities;

1. a description of the strategy for consultation with and participation of resettlers and hosts in the design and implementation of the resettlement activities.
2. a summary of the views expressed and how these views were taken into account in preparing the resettlement plan;
3. a review of the resettlement alternatives presented and the choices made by displaced persons regarding options available to them, including choices related to forms of compensation and resettlement assistance, to relocating as individuals families or as parts of preexisting communities or kinship groups, to sustaining existing patterns of group organization, and to retaining access to cultural property (e.g. places of worship, pilgrimage centers, cemeteries);and

³⁹⁹ Outline for RAP is provided as Annexure 16

4. institutionalized arrangements by which displaced people can communicate their concerns to project authorities throughout planning and implementation, and measures to ensure that such vulnerable groups as indigenous people, ethnic minorities, the landless, and women are adequately represented.

8.4.3 Field Surveys

Field surveys for the RAP consists of five different but interrelated surveys. In **Table 8.2** the description and scope of the surveys are provided.

Table 8.2: Description of Field Surveys

Survey	Objective	Scope
Census of Affected Persons and Project Impacts	Census Identify all persons and households that are likely to be affected by the land acquisition Identify the type of impacts	All owners of land, structures, businesses on the AL All person otherwise associated with the land and businesses such as tenants and employees in the businesses
	Affected Structures Measure the dimension of the structure Ascertain its use Identify persons associated with the structure	All structures on the AL
	Affected Land Identify the owners of the agricultural land Identify non-resident owners of the land	All agricultural land within the AL
	Household Profile Collect information on the socioeconomic conditions of the AH Identify vulnerable affected households	All owners of land, structures, businesses on the AL All person otherwise associated with the land and businesses such as tenants and employees in the businesses
Affected Business	Collect information on the nature and volume of the business Identify persons whose livelihood is associated with the business	All business within the project footprint.
Public and Community Infrastructure	Measure the dimension of the structure Ascertain its use	All structures on the AL

8.4.4 Valuation of Assets

The methodology for assessing unit compensation values of different items is as follows:

- Productive land (agricultural, aquaculture, garden and forest) based on actual current market prices that reflect recent land sales in the area, and in the absence of such recent sales, based on recent sales in comparable locations with comparable attributes, fees and taxes or in the absence of such sales, based on productive value;

- Houses and structures will be valued at replacement cost based on the current market rates;
- Loss of livelihood will be valued according to the actual loss of wages or business income up to a maximum period of three months;
- Crops will be valued at current open market rates;
- For timber trees, cash compensation at replacement cost that should be in line with local government regulations, if available, will be equivalent to current market value for each type, age and relevant productive value at the time of compensation based on the diameter at breast height of each tree; and
- Livelihoods will be valued as per actual loss.

8.4.5 Compensation, Income Restoration and Relocation

This section describes the measures proposed for income restoration, including compensation and special measures to help vulnerable households improve their living standards, explains measures to provide replacement land, if planned; and describes support to be provided for host populations.

8.4.6 Compensation

Compensation for lost assets can be provided in two ways, i.e. cash compensation and land for land compensation. Based on the community consultations and availability of land in the area PMIU will decide the approach of compensation for every project. Compensation approach and its basis will be described in every RAP under the Project.

8.4.7 Land for Land Compensation

Land for land compensation is a good practice especially in the same area as people can continue their pre project livelihood activities and they can maintain their living standard. Moreover APs can also get benefits from the project implementation like labour opportunities, increased business opportunities and opportunity to get jobs in the project. However, in many locations there is limited land and it is not possible to provide land for lost land to all the APs. In cases where DPs desire land for land compensation, effort will be made to locate suitable land in the area (state land or private land) consulting affected communities and host communities. Land may be acquired to relocate APs.

When land for land compensation will be used, RAPs will include costs for site preparation and for the provision of basic facilities like water supply, sanitation, roads, drainage and electricity. The RAPs will clearly detail site preparation and resettlement schedules and tenure arrangements. In managing the land for land relocation, the socio-cultural and religious characteristics of the displaced persons, gender considerations and host communities will be taken into consideration and the distance between the old and new locations should be minimized as far as is possible.

8.4.8 Cash Compensation

The PMIU will finalize all requirements for compensation in consultation with Revenue Department and affected communities prior to land acquisition. P&DD, will be

responsible for the timely allocation of funds to implement the RAP. The budget for the RAPs will be disbursed in cash by the PMIU. Component of the compensation budget which is covered in the award of the land will be disbursed through LAC while remaining compensation will be disbursed directly by the PMIU before taking physical possession of the affected assets.

8.4.9 Income and Livelihood Restoration

RAPs for different sub-projects will analyse the impact of the project on the income and livelihood of the affected households. If the project impacts are significant RAP will include Income and Livelihood Restoration Plan (ILRP).

In the ILRP one or two-phase approaches may be adopted based on the significance of the income and livelihood impacts and community consultations.

8.4.10 Relocation

Based on the community consultations PMIU will be responsible to develop a relocation strategy and it will be a part of RAP of the project. There may be different relocation options as under:

- ❑ AHs have land for construction of houses and only needs compensation and transition period allowance;
- ❑ AHs can purchase land by their own in the nearby area for construction of houses and only needs compensation and transition period allowance;
- ❑ AHs like to migrate to cities and main towns and require only compensation and transition period allowance;
- ❑ AHs likes that project should develop relocation sites for them for them

Based on the community consultation PMIU will develop relocation strategy. RAP of the project will include relocation strategy including budget, time schedule and responsibilities for implementation.

8.4.11 Support to Host Communities

PMIU will take an inventory of the relocation sites and will assess whether infrastructure available in the relocation sites is enough to facilitate affected households and how much additional infrastructure like school, health facilities, roads, water supply is required. P&DD will be responsible to provide additional required infrastructure and cost of the additional infrastructure will be included in the RAPs of all the projects.

8.5 Implementation Arrangements

8.5.1 Project Management and implementation Unit (PMIU)

PMIU will be responsible for implementation of RPF and preparation of Resettlement Action Plans and Land Acquisition and Resettlement Plans LARP for the sub-projects.

The institutional arrangements for ESMF that includes provision of RPF is provided in following sections.

8.5.2 Grievance Redress Committee (GRC)

Two tier GRCs, one at village level and one at project level will be established for addressing conflicts and appeal procedures regarding eligibility and entitlements as well as the implementation of the resettlement activities. The GRCs will receive and facilitate the resolution of concerns and grievances from PAPs. Details of the GRCs are provided in this ESMF.

8.5.3 External Monitoring Agency

P&DD will hire an independent External Monitoring Agency (EMA) who will conduct independent monitoring and evaluation during ESMF, ESMPs, LARPs and RAPs implementation. The EMA will:

- Review the implementation progress;
- Evaluate the level of achievement of objectives; and
- Identify the gaps (if any) and propose remedial measures to be taken.

8.5.4 Board of Revenue

The Balochistan Board of Revenue (BoR) has function of land acquisition and power to approve the allocating/granting land for projects of public interest with conditions.

8.5.5 District Administration

Land acquisition functions rest with BOR but the land rights in the rural areas are administered by the District Administration on behalf of the BOR. The DC has the power and responsibility to acquire land and to assess compensation of property. The DC, who also acts as LAC under LAA 1894, will assign the Tehsildar of the concerned District Revenue Department (DRD) to manage the entire land acquisition. Other staff members of the DRD, called Quano (clerical Staff of DRD) and Patwari (Field Staff of DRD) will carry out titles identification and verification of the ownership. Compensation of non-land assets pertains to relevant agencies of the government and their district level offices as following:

- Compensation for buildings will be determined by the District Collector with advice on the rates from Department of P&D;
- Compensation for crops and productive trees will be determined by the Department of Agriculture; and
- Compensation for wood trees will be determined by the Department of Forestry.

8.6 Budget and Financing

All land acquisition and resettlement (LAR) implementation costs, including cost of compensation and LAR administration, will be considered an integral part of Project cost. Each RAP will include a budget section indicating unit compensation rates for all affected items and allowances, relocation of structures, rehabilitation of livelihood,

methodology followed for the computation of unit compensation rates and a cost table for all compensation expenses including administrative costs and contingencies. Cost for resettlement activities will be included in the PC-1 of the project by the P&DD. Total cost of the RAP will also include 10 percent contingencies. Finances for compensation, relocation of structures, rehabilitation of livelihood, allowances, and administration of RAP preparation and implementation will be provided by the Project. P&DD will make sure that all the required funds are available for different resettlement activities before the start of particular activities as scheduled in the RAP.

As per the flow of LAR finances it is noted that the budget for land, structures, trees and crop compensation will be disbursed by the concerned PMIU to the District LAC office which in turn, through the LAC will disburse the compensation to the APs. However funds for other LAR activities such as resettlement allowances relocation and livelihood restoration will be disbursed and used directly by the P&DD.

8.7 Gap Analysis of Land Acquisition Act & World Bank Policies

The Land Acquisition Act (1894) and the World Bank Involuntary Resettlement policy OP 4.12 principles specifically related to land acquisition and resettlement aspects are compared below. The objective of this exercise is to identify if and where the two sets of procedures are in conformity with each other and more importantly where there are differences and gaps.

World Bank Involuntary Resettlement Policy Principles	Pakistan's Land Acquisition Act	Approaches to Address the Gaps
Screen the project early on to identify past, present, and future involuntary resettlement impacts and risks. Determine the scope of resettlement planning through a survey and/or census of displaced persons, including a gender analysis, specifically related to resettlement impacts and risks.	No equivalent requirements	Screened and categorized. Scope defined, social assessment and gender analysis undertaken.
Carry out meaningful consultations with affected persons, host communities, and concerned nongovernment organizations. Inform all displaced persons of their entitlements and resettlement options. Ensure their participation in planning, implementation, and monitoring and evaluation of settlement programs. Pay particular attention to the needs of vulnerable groups, especially those below the poverty line, the landless, the elderly, women and children, and Indigenous peoples, and those without legal title to land, and ensure their participation in consultations. Establish a grievance redress mechanism to receive and facilitate resolution of the affected persons' concerns. Support the social and cultural institutions of displaced persons and their host population. Where involuntary resettlement impacts and risks are highly complex and sensitive, compensation and	LAC or District Judge (in Case of the Telegraph act) Are the final authorities to decide disputes and address complaints regarding quantification and assessment of compensation for the affected lands and other assets?	Complaints and grievances are resolved informally through project grievance redress mechanisms. Consultations conducted, vulnerable groups identified and supported as relevant.

World Bank Involuntary Resettlement Policy Principles	Pakistan's Land Acquisition Act	Approaches to Address the GAPS
resettlement decisions should be preceded by a social preparation phase.		
Improve, or at least restore, the livelihoods of all displaced persons through (i) land-based resettlement strategies when affected livelihoods are land based where possible or cash compensation at replacement value for land when the loss of land does not undermine livelihoods, (ii) prompt replacement of assets with access to assets of equal or higher value, (iii) prompt compensation at full replacement cost for assets that cannot be restored, and (iv) additional revenues and services through benefit sharing schemes where possible.	No equivalent requirements.	Livelihoods restoration is required and allowances are provided. Provided as relevant.
Provide physically and economically displaced persons with needed support	No equivalent requirements.	Support provided to be commensurate with impacts

9 Grievance Redress Mechanism

Timely and effective redress of stakeholder grievances will contribute to bringing sustainability in the operations of a project. In particular, it will help advocate the process of forming and strengthening relationships between project management and the stakeholder community groups and bridge any gaps to create a common understanding, helping the project management to efficiently operate in the area. To register and resolve the grievances of the community in this process, a Grievance Redress Mechanism (GRM) will be established. The proposed mechanism will be based on two-tier grievance redress committees—at village level and at Project level. The proposed GRM will help achieve the objectives of sustainability by dealing with the environmental and social issues of the Project in a timely manner.

The village-level GRC will be established to engage village-level community members/leaders to participate in the decision-making processes and to have “voices” of the aggrieved person/communities in the grievance redress procedures. This will also enhance local ownership of the Project. Having members based in the village, the village-level GRC will be helpful in resolving the grievances quickly often without going into lengthy documentation. The local participation will further build local capacity in dispute resolution and decision-making and provide leadership support in the implementation of the Project. Cases which are not satisfactorily resolved or affected persons remain aggrieved, the case will then be forwarded to the Project-level GRC as the prime floor for resolution of the grievances. The purpose of the GRM is to facilitate the resolving of disputes without going into litigation. In this regards, the decision of the Project level GRC will be final within the GRM. However, if any disputant remains dissatisfied with the GRC outcome, the disputant can seek redress from a court of law.

P&DD will be responsible for:

1. Establishing the GRM at each village level and at the project level.
2. PMIU must ensure that the community is informed of the mechanism to redress complaints.

9.1 Grievance Redress Committees

The Grievance Redress Committees (GRCs) are to ensure accessibility, fairness and independence of the procedures. The GRCs will be established at two-levels:

1. Village GRC, with the scope limited within the village; and
2. Project GRC, covering all the project affected villages.

The composition of the two committees is shown in the table below.

Table 9.1: Members of GRC

Organization	Village GRC	Project GRC
P&DD	Field staff of PMIU (P&DD) Chairperson	Representative from PMIU (P&DD) Chairperson
Revenue Department	Concerned Patwari	LAC or LAC's Representative
Community	One or two elders nominated by the community	One or two elders nominated by the community

9.2 GRC's Scope of Work

The scope of work of the GRC shall include:

1. The village GRC will ensure that all grievances related to social and environmental issues are registered, formally recorded, reviewed, resolved and the concerned person is informed in a timely manner.
2. The Project GRC will monitor the working of the village GRC and will work as a forum for appeal against the decision of the village GRC.
3. GRC will not consider complaints related to the procurements or with any matters pending in the court of law.
4. In resolving the disputes, the GRCs would take into consideration the following:
 - Merit of the complaints/case received for consideration;
 - Evidences to take a decision on the complaint;
 - Witness statements;
 - Plausibility of the case in the light of related project activity;
 - Applicable laws, environmental guidelines of Pakistan, initial environmental examination and environmental review document of the project, and WB environmental guidelines;
 - Observations made on the field; and
 - Available information on previous complaints of similar nature.

9.3 Approval and Orientation of GRC Members

The GRC members will be selected according to their responsibility and personal integrity. Community members of the village level GRCs will be selected after consultation with the communities. Community members of Project level GRCs will be nominated by the affected community. All GRCs' members will be approved and notified by the Project Director. All GRC members will attend a training and orientation meeting prior to commencement of their work. The training will be provided by competent technical experts in social/resettlement and environmental management. The training will address the policy aspects, compliance requirements, expectations of the community, and need for rapport and communication with the affected communities, and finally need for independence and transparent views in dealing with grievances.

9.4 Dissemination of GRCs

After notification of all the GRCs, information about GRCs will be disseminated in all the concerned villages by the PMIU. Information dissemination will comprise the following;

- List of GRC members including address and contact numbers.
- GRC scope of work.
- Grievances redress procedure.

9.5 Grievances Redress Procedure

The Grievance Redress Mechanism proposed here spans the entire project implementation and will cater to both the directly and indirectly affected population/beneficiaries. Though the GRM proposed here has been designed to address environmental and social problems identified during implementation, it will also cater to manage any disconnects that emerge from the field level and that has significant implications for effective implementation of the sub-project interventions. The Project Management and Implementation Unit's (PMIU) office will serve as the secretariat for the Grievance Redress Committee (GRC-Project) that will be responsible for providing oversight on the entire GRM process at a strategic level and monitoring of complaints management. Following procedure will be adopted to resolve grievances received by the GRCs. The grievance mechanism will be made public through public consultations by the concerned PMIU and Consultant.

9.5.1 Filing of Grievances to Village GRC

For grievances related to environmental and social safeguards, the aggrieved person (or their authorized representatives) may file a grievance with the village-level GRC in one of the following ways:

1. Submit a written complaint to any member of the village GRC.
2. Submit a verbal complaint to any member of the village GRC with documentary proof that a complaint has been filed.
3. Given the local cultural context, any aggrieved women may submit complaints to GRCs directly or through the head of the household.

For complaints registration Complaint Registration Forms will be available with the secretary of the village level GRCs and complaints will be registered on Grievance Log.

9.5.2 Hearing and Resolution of the Cases by Village GRC

The procedure for hearing and resolution of the complaint will be as follows:

1. On receipt of a complaint:
 - Secretary of village GRC will log the complaint in a register called Complaint Register.
 - Contact other members of the GRC to conduct a meeting within 10 calendar days of the logging of the complaint.

- ❑ If needed, request the complainant or his representative to meet the Village GRC on the appointed date to discuss his complaint.
 - ❑ Prepare all the relevant information and document relevant to the complaint prior to the meeting and provide copies to all members.
2. The GRC will meet on the appointed date during which it may:
 - ❑ Deliberate on the nature and circumstances of the complaint;
 - ❑ Investigate the complaint;
 - ❑ Meet with the complainant and other persons;
 - ❑ Visit the site; and
 - ❑ Take a decision.
 3. If the GRC needs extra time to investigate or deliberate on the complaint, the secretary will inform the complainant of the time when a decision is expected. In any case, all complaints shall be resolved within 30 calendar days of logging.
 4. Once the complaint is resolved the secretary will document the decision and prepare full documentation on the process including minutes of meeting, photographs of visits, documents reviewed, and reasons of the decision.
 5. The GRC will ensure that the complainant is fully informed of the decision and is also informed about his/her right to appeal to the Project GRC and to the court of law.
 6. In case follow-up action is required, the chairperson of the village GRC will ensure that the actions are taken and are documented.

9.5.3 Hearing and Resolution of the Cases by Project GRC

The procedure for hearing and resolution of the complaint by the Project GRC will be as follows:

1. On receipt of a complaint from :
 - ❑ Secretary of Project GRC will request all the concerned documentation from the secretary of the concerned village GRC.
 - ❑ Contact other members of the Project GRC to conduct a meeting within 15 calendar days of the logging of the complaint to the Project GRC.
 - ❑ If needed, request the complainant or his representative to meet the Project GRC on the appointed date and place to discuss his complaint.
 - ❑ If needed, request the members of the village GRC to meet the Project GRC on the appointed date and place.
 - ❑ Prepare all the relevant information and document relevant to the complaint prior to the meeting and provide copies to all members.
2. The Project GRC will meet on the appointed date during which it may:
 - ❑ Deliberate on the nature and circumstances of the complaint;

- ❑ Investigate the complaint;
 - ❑ Meet with the complainant and other persons;
 - ❑ Visit the site; and
 - ❑ Take a decision.
3. If the GRC needs extra time to investigate or deliberate on the complaint, the secretary will inform the complainant of the time when a decision is expected. In any case, all complaints shall be resolved within 45 calendar days of logging with the Project GRC.
 4. Once the complaint is resolved the secretary will document the decision and prepare full documentation on the process including minutes of meeting, photographs of visits, documents reviewed, and reasons of the decision.
 5. The GRC will ensure that the complainant is fully informed of the decision and is also informed about his/her right to appeal to the court of law.
 6. In case follow-up action is required, the chairperson of the Project GRC will ensure that the actions are taken and are documented.

9.5.4 Resolution of the Cases by Court of Law

GRC will make efforts to resolve the cases within their own jurisdiction. It will be discouraged to take the sub-project matters to the law courts. The complainant(s) may enter the reference in the Court of law if the PAPs are not satisfied with the decision of GRC. GRC will be responsible to cooperate with the law enforcement agencies and abide by law in case of launch of complaint in the court. GRC will also implement the decision of courts and ensure that the procedures are revised to resolve the similar complaints through GRC in future.

9.5.5 Maintenance and Evaluation of Data by P&DD

The Project Director (PD) PMIU will ensure that it receives copies of all complaints, meeting notices, decisions, and documentations related to proceedings of the village and Project GRCs. The PMIU will maintain complete record of the complaints in a database or tabular form consisting of the following fields:

- Sub-project name
- Village, union council, tehsil, and district
- Name of complainant
- Nature of complaint like environment (trees cutting, Noise, Dust, Waste, Air-Water-Soil Pollution etc.), social (damage to infrastructure, land, privacy, Favouritism/Nepotism issues, etc.), Gender (gender equality, empowerment, privacy etc.) and non-compliance to the Govt. /Donor provided guidelines.
- Date of logging of complaint with village GRC
- Date of first meeting of village GRC
- Information on members attended, number of meetings, meeting with complainant, and site visit.

- Date of decision of village GRC
- Follow-up actions, responsibilities, and completion with dates
- Date of logging of complaint with Project GRC
- Date of first meeting of Project GRC
- Information on members attended, number of meetings, meeting with complainant, and site visit.
- Date of decision of Project GRC
- Follow-up actions, responsibilities, and completion with dates

The PMIU will prepare periodic report on the GRM reporting on, for example:

- Number of complaints received and resolved by village GRC, Project GRC and nature of complaint;
- The average time of it took to resolve the complaint; and
- The fraction to complaints that were resolved at the village GRC level.

9.6 Grievance Closure

The complaint shall be considered as disposed-off and closed when:

42. The designated officer/authority has acceded to the request of the complainant fully;

- Where the complainant has indicated acceptance of the response in writing;
- Where the complainant has not responded to the concerned officer FIU/PIU within one month of being intimated about the final decision of the grievance officer on his grievance/complaint;
- Where the complainant fails to attend the proceedings of the concerned officer at FIU/PIU within the stipulated period of the disposal of the complaint; and
- Where the complainant withdraws his/her complaint.

10 ESMF Implementation Budget

Approximate implementation cost of ESMF implementation is given below:

Table 10.1: ESMF Implementation Budget

#	Description	Unit	Quantity	Unit Rate PKR	Total PKR
1.	ESMF Training for PMIU staff (including materials, logistics, venue)	Training Sessions	5	30,000	150,000
2.	District Level E&S sector specific trainings for department staff, local facilitators and technical resource persons Training sessions will be held in each district every six months	Training Sessions	80	150,000	12,000,000
3.	District Level E&S construction specific trainings for department staff, contractors and subcontractors local facilitators and technical resource persons	Training Sessions	40	150,000	6,000,000
4.	Environment Specialist	Months	60	150,000	9,000,000
5.	Social Safeguard Specialist	Months	60	150,000	9,000,000
6.	Gender Specialist	Months	60	150,000	9,000,000
7.	Computers for Environmental, Social and Gender Specialists	Number	3	100,000	300,000
8.	Vehicle for for Environmental, Social and Gender Specialists	Number	1	4,500,000	4,500,000
9.	External Monitors (5 annual reports, 1 inception and end project evaluation report)	Reports	7	3,000,000	21,000,000
10.	Consultants (ESMP, RAP, RPF)	Reports	10	500,000	5,000,000
11.	Communication and awareness material for communities				2,000,000
12.	Total				77,950,000
13.	Including Contingency @ 20 %				93,540,000

Budget for mitigation measures and resettlement (if any) for each sub-project will be identified in sector specific ESMPs and RAPs. However, 2% of the total project intervention will be allocated for environmental and social safeguards. The budget will spend on the ESMP and RPF formulation, implementation and monitoring.

11 Disclosure

This ESMF and the RPF will be disclosed on the websites of P&DD Balochistan and on the World Bank document and reports website. Hard copies of this ESMF will also be shared with the Provincial EPA, project stakeholders, contractors, Civil Society Organizations etc. A copy of the ESMF will be placed in the Project Management and Implementation Unit, P&DD for public access. The Urdu translation of the Executive Summary of the ESMF will also be distributed to all relevant stakeholders, especially to the beneficiary communities in the project areas. The purpose will be to inform them about the project activities, negative environmental and social impacts expected from the project and proposed mitigation measures.

The executive summary of the RAP (if prepared for any sub-project) will be translated in the local language, which is understandable to all project affected persons and local community and will be provided to all PAPs as well.

The Project office (PMIU) and social safeguards specialist will keep the PAPs informed about the impacts and entitlement of compensation and facilitate in addressing grievance (s). The ESMF study team has made an endeavour to hold consultative and scoping sessions with these stakeholders to bring forth their views on the proposed Project, inter-alia, their opinions, suggestions and understanding on various issues and concerns.

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