Provincial REDD+
ACTION PLAN
Khyber Pakhtunkhwa
2022-2031





REDD+ Pakistan

A plan of action prepared with technical assistance from National REDD+ Office, Ministry of Climate Change, Government of Pakistan.

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Credentials

Authors
Kamran Hussain
Arjumand Nizami
Hammad Gilani
Gohar Ali

Peer Review
Syed Ghulam Qadir Shah
Provincial REDD+ Management Committee

Data collection, analysis and support
Hammad Gilani
Zahid Rehman
Muhammad Sadiq Mughal
Syed Nadeem Hussain Bukhari
Muhammad Arif
Abdul Mannan

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Helvetas Swiss Intercooperation Pakistan
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ACRONYMS

ADB	Asia Development Bank
AFOLU	Agriculture, Forestry and Other Land Use
FAO	Food and Agriculture Organization of United Nations
FCPF	Forest Carbon Partnership Facility
FGD	Focus Group Discussion
FGRM	Feedback Grievances and Redressal Mechanism
FREL/ FRL	Forest Reference Emission Level/ Forest Reference Level
FSMP	Forestry Sector Master Plan
GB	Gilgit Baltistan
GGI	Green Growth Initiative
GHG	Green House Gases
GIS	Geographic Information System
GPS	Global Positioning System
IPCC	Intergovernmental Panel on Climate Change
KP	Khyber Pakhtunkhwa
LULUCF	Land Use, Land Use Change and Forestry
MoCC	Ministry of Climate Change
MRV	Measurement Reporting and Verification
NDC	Nationally Determined Contribution
NFI	National Forest Inventory
NFMS	National Forest Monitoring System
NGOs	Non-GovernmentalOrganizations
NRO	National REDD+ Office
NRS	National REDD+ Strategy
OIGF	Office of the Inspector General of Forests
PES	Payment for Ecosystem Services
PFMP	Participatory Forest Management Plan
PRAP	Proposed Remedial Action Plan
PRMC	Provincial REDD+ Management and Coordination Committees
PRMU	Provincial REDD+ Management Unit
REDD+	Reducing Emissions from Deforestation and Forest Degradation; and the Role of Conservation, Sustainable Management of Forests and Enhancement of Forest Carbon Stocks in Developing Countries
R-PP	REDD+ Readiness Preparation Proposal
SESA	Strategic Environmental and Social Assessment
SFM	Sustainable Forest Management
SES	Social and EnvironmentalSafeguards
SLMS	Satellite Land Monitoring System
TBTTP	Ten Billion Tree Tsunami Project
UN	UnitedNations
UNFCCC	United Nation's Framework Convention on Climate Change
WB	World Bank
WGs	Working Groups

SUMMARY

The Pakistan National REDD+ Strategy was approved in in 2021. This Provincial REDD+ Action Plan (PRAP) has been developed to contribute to the strategy' objectives and sustainable management of the forest resources of Khyber Pakhtunkhwa (KP) province.

Starting in the early 2000s, KP province has been a pioneer in introducing participatory forest management and successfully formalizing the approach in its legal frameworks. Because of this history, KP naturally takes a community-based approach to REDD+. KP's REDD+ Action Plan is founded on this history of community-based approaches to resource management.

Preparation of KP PRAP took a multi-stakeholder participatory approach. The overarching purpose of the PRAP is to increase benefits from sustainably managed and enhanced forest resources for the people contributing to their livelihood and at the same time mitigating climate change. The specific objective of this document are to (i) Outline actions in line with ground realities to address the prioritized drivers and barriers with context specific actions[1] and related budget (ii) Improve health of the forest ecosystems by reducing deforestation and forest degradation and enhancements of biomass (iii) Define effective implementation and monitoring of REDD+ actions to address the drivers (iv) Identify social and environmental risks associated with proposed actions and suggest risk mitigation (v) Propose a clear benefit sharing mechanism associated with implementation of REDD+ activities, and (vi) Identify areas for enabling policy, legal and institutional arrangements in favour of implementing PRAP.

The PRAP outlines actions that support investment on improving local livelihoods to address local drivers of deforestation and degradation in order to achieve sub national and national REDD+ and forest policy objectives. The PRAP identifies measures and interventions that will contribute to national and global goal of reducing emissions. The KP Forest, Environment and Wildlife department as custodian of the KP forests advocates that REDD+ policies and measures are designed locally and with full involvement of local institutions and communities.

In KP, only 8% forests are Reserved / state owned and 92% of the legally defined forests are either privately owned or encumbered with rightsof and concessions to the local communities with decades old legal right in forest ownership and use. Wherever settlements have not been drawn, neither land boundaries nor ownership are clear.

The main drivers of deforestation prioritized by the stakeholders included (i) Clearing forestland for agriculture, and (ii) Clearing forestland for housing colonies / settlement. Three drivers of forest degradation were prioritized by the stakeholders (i) High demand for energy, construction timber and grazing (ii) Illegal timber extraction for selling (construction and firewood), and (iii) Improperly managed tourism activities. These drivers were analysed by the stakeholders and several underlying causes were identified.

The PRAP proposes several actions to address underlying causes of deforestation and degradation. On top of these, is achieving the efficiency and alternative sources of energy to address the main cause of degradation which is firewood extraction for energy. Mapping resources and effective implementation of regulation to curb conversion of land to other land uses are other priority areas identified in this PRAP.. Other efforts to improve forest resources include improving enabling policy environment for REDD+ implementation (participatory monitoring system, benefit sharing mechanism, forest law enforcement and implementation strengthened,

1 A set of interlinked activities that form a coherent actions for counteracting a driver of deforestation, forest degradation and/ or barriers to expansion of a forest carbon enhancement activity.

capacity building of actors on forest monitoring system), introducing alternative incomes and livelihood opportunities, promoting sustainable forest-based enterprises and vocational education,and Forest based Payments from Forest Ecosystem Services.

One of the key action identified in this PRAP is continuation and refining participatory approach to forest management in which the province has already travelled a long way. In addition, integration of trees on private lands (as in case of BTAP)has been emphasized to promote sustainable solutions to energy demands on forests.

The PRAP will make a traction through Participatory Forest Management Plans (PFMPs) with an approach that encourages harvesting trees on a rotational basis so that timber and fuel may be produced and used sustainably for local use. The PRAP suggests activities aimed at enhancing forest stocks so that forests continue to see improvement for effective REDD+ results. KP Forest, Environment and Wildlife Department will follow a site specific, landscape approach in PFMPs in which various actions are planned and implemented in a coordinated way, aiming at maximizing economic, social and environmental benefits.

The total indicative financial size of this PRAP is PKR2,140million for ten years (2022-2031).

1 INTRODUCTION

Pakistan signed and ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1994. Pakistan also initiated a national dialogue on REDD+ in 2010 and submitted its REDD+ Readiness Preparation Proposal (R-PP) to the World Bank Forest Carbon Partnership Facility (FCPF) in 2014. The Federal Ministry of Climate Change (MoCC) through its Office of the Inspector General of Forests (OIGF) has been implementing Readiness activities after approval of R-PP in 2014 with financial and technical support from FCPF along with other bilateral initiatives and UN-REDD target support fund.

One of the key outputs[2] of REDD+ Readiness activities was preparation of a National REDD+ Strategy for Pakistan which was finalized in 2021 with the vision that forests provide ecosystem services and livelihood support on a sustainable basis. As part of the development of the strategy direct and underlying drivers of deforestation and forest degradation at the nationallevel, and barriers to enhancement of biomass and forest area/cover were assessed. The strategy also identified measures necessary to effectively address the drivers and barriers. For the implementation of recommendations proposed under theNational REDD+ Strategy (NRS), it is important to elaborate the drivers and barriers at sub-national andlocal levels. To undertake these tasks at the sub-national and local levelthe strategy suggested development of Provincial REDD+ Actions Plans (PRAPs) and Participatory Forest Management Plans (PFMPs).

The PRAP of Khyber Pakhtunkhwa (KP) is therefore in line with the recommendation of the NRS. This document provides details on province specific drivers of deforestation and forest degradation and describes actions to address them in order to improve forest resources of the province.

The actions also aim to strengthen opportunities and address challenges for strengthening REDD+ readiness at the provincial level.

1.1 Context of Khyber Pakhtunkhwa

1.1.1 Area and location

Khyber Pakhtunkhwa (KP) lies primarily on the Iranian plateau, at the junction of the Hindukush-mountain slopes on the Eurasian plate and the Indus-watershed hills of south-central Asia. The total area of the province is 74,521 km² and out of this 14.5% land is under forest cover[3]. Major watersheds in the north KP contribute to Tarbela and Mangla watersheds whereas water from the western mountains drains directly into the Indus River via Kurram River, small streams and Rudh Kohi system.KP is located within the latitude 34.0000°North and longitude 71.3200°East. It has geographical boundaries with Afghanistan to the west and north, Azad Kashmir and Gilgit-Baltistan to the east and northeast, Punjab province to the southeast, and Balochistan province to the southwest. The province is divided into 36 districts and 2,989 village councils[4]. Peshawar is the provincial capital, the economic hub of the province, and the largest city of KP.

1.1.2 Demographic and socioeconomic patterns

In 2017, the total population of KP province was 35.524 million (male: 50.62%; female: 49.37%; transgender: 0.0065%)[5], living in 4.404 million households. The majority, 30.523 million live in the settled districts whilst 5.001 million were in the newly merged tribal district. Out of the total population, 83.5% lived in rural areas (GoP,

2National REDD+ Strategy, National Forest Monitoring System, Safeguard Information System, Forest Reference/ Emission Level
3Bukhari, S.B., Laeeq, T. and Ali, H. 2012. Landcover Atlas of Pakistan. Peshawar, Pakistan Forest Institute
4 GoP, 2017. Pakistan National Census Report. Government of Pakistan.
5 https://www.pbs.gov.pk/sites/default/files//population_census/KP%20District%20Wise.pdf

2018a). The population of KP is increasing at an average 2.65% per annum and will cross 51 million by 2030 and 89 million by 2050[6], if growth continues at current rates. Many of the 35.5 million people (83.5% of them in rural areas) of KP live in multi-dimensional poverty. Lack of access to water is a major driver of poverty and deprivation.

The total cultivable area of KP is 1.65 million hectares. Given its mountainous and fragile ecology, high levels of poverty and its narrow economic base dependent on natural resources and subsistence agriculture, social and economic challenges in KP are complex and are important underlying drivers of deforestation and forest degradation in the province[7]. It was observed that the population density is high in hilly and forested regions where most of the inhabitants have high dependency on forest resources and forest land for subsistence and income. Further, the skewed distribution of land and forest ownership coupled with social and ethnic conflicts, lack of incentives to forest resource dependent groups, low agricultural and livestock productivity as well as low economic returns leading to forest resource degradation.

1.1.3 Climate

The geography of KP is a profound blend of landscapes varying from Hindukush Himalaya mountains in the north to hot plains in the south[8]. Districts along the Western border of Pakistan and Afghanistan are predominantly mountainous with two major climatic systems, the monsoon to the east and the Mediterranean towards the west with a dry and semi-dry climate (Akmal et al., 2014).

KP's location and diversity of terrain cause substantial seasonal variations. The province comprises of diverse landscape with agricultural plains, drylands and mountains. This diversity is an opportunity but at the same time increases exposure to vulnerability due to climate variability and change. A large area of KP comprises highlands which are highly vulnerable to climate variability and change (Ali et al., 2014) and rich in water resources playing an important role in the regional hydrological cycle (Grumbine et al., 2015). KP has demonstrated strong indicators of vulnerability to climate change due to diversity of agroecology and landforms but also because of changing regime in temperature and precipitation, inevitably significant for agriculture (Nizami et al., 2010). These changes have significant impact on KP's natural resources.

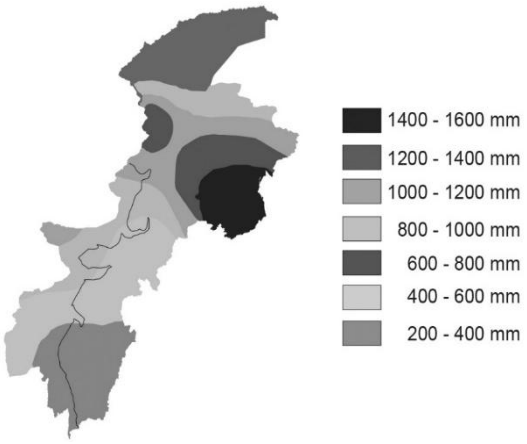

Figure 1: Rainfall zones

Source: Nizami et al 2020

KP province is classified into three rainfall zones based on annual average rainfall received, namely low (less than 600mm), medium (600mm - 1000mm) and high (above 1000mm) (**Figure 1**). This pattern is expected to continue in the future (Nizami, Ali and Zulfiqar, 2019) Howeverseasonal variation and shifts are expected with most rain likely to concentrate during spring and summer ().Projectedaverage increase in temperature inKP is 1.8^{0}C during 2010-2040 - Northern districts (mountain areas)

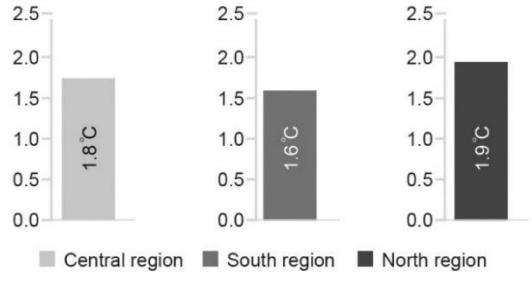

Figure 2 Annual average increase in temperature in three geographical regions of KP (1981-2040)

Source: Nizami et al. 2020

6 Projection is based on the current rate of population growth reported in census rep
7 Draft sub-national REDD+ strategy of KP, 2020
8 Nizami, A. and Ali, J. 2021. Water Profile of Khyber Pakhtunkhwa. Helvetas.

1.9^{0}C, Central 1.8^{0}C and the South 1.6^{0}C (where South is already a heat surplus zone). These trends are crucial in terms of disasters with likelihood of spring / monsoon floods and winter drought.

1.1.4 Overview of the forest resources

In KP, 92% of the legally defined forests are either privately owned or encumbered with rightsof and concessions to the local communities (Fischer et al 2010). The forest owners and concessionists have their decades old legal right (ownership/concessions) in forest ownership and use. Other non-owner users can use forests only on the permission of Forest department and legal owners under customary arrangements. However, where the power of owners/concessionists or writ of state is weak, the forests are controlled and used by other non-owner user groups which give rise to conflicts and result in deforestation and forest degradation. Therefore, wherever settlements have not been drawn, neither land boundaries nor ownership are clear, a clarification of land tenure rights is essential in order to understand the existing relationship that people have with land and to assess where and how REDD+ may be incorporated in the current tenure system.

Broadly, in KP land tenure rights may also be classified as 'formal or *de jure*' or 'customary or *de facto*'. Formal property rights are those that are explicitly acknowledged by the state whereas informal property rights are those that lack official recognition and protection. Customary property rights are exercised by indigenous communities by virtue of their historical relationship with the forests on which their survival depends. Some customary rights are given formal recognition thereby blurring the distinction between formally recognized rights and customary rights.

The State charges royalties and taxes from owners and right holders on the income generated from the sale of trees (FAO, 1974). Another forest tenure system, called Wesh, was unique to Swat and Dir Kohistan and had been practiced by the rulers of Swat since the occupation by Yusufzai Pathans in the seventeenth century. Under this system there were no permanent ownership or tenure rights to land; cultivable land was allotted to the local Pakhtunfor periods of eight to ten years, on a rotation basis; similar rules affected forest lands. Non-Pakhtun tribes had rights to graze and collect fuel wood, but the felling of trees was permitted only to Pakhtun leaseholders (Sultani-I-Rome, 2005).

The Government of Pakistan has launched the largest ever afforestation programme in the history of the country i.e., the Ten Billion Tree Tsunami Programme (TBTTP). This four-year flagship national programme (2019-2023) will increase the existing forest area of the country, including KP. During 2016-2025, 500 million plants will be planted and/or regenerated to restore on 250,000 hectares[9] contributing to overall national sequestration potential of 148.76 MtCO2e emissions by the year 2030.

The forest settlement reports are the basic documents that determine the extent of ownership and rights to forests in the province. The revised KP Forest Act 2002 and the Land Revenue Act amended 1967, and Community Participation Rules 2004 remain the main legal instruments that determine the legal aspects of landownership, including of forest land. However, it only covers the existing power system and entitlements to management of forests and lacks clarity on unrecognized claims (carbon pools), legal and customary jurisdictions of rights, access and use patterns with respect to resources and various stakeholder categories and their stakes.Table 1 provides an overview of existing forest tenure system in KP.

[9] Source: KP Forest Department, 2022

Table 1: Forest tenure system

Legal Category / Tenure Regime		Forest type	Rights	Area and locations	Management Arrangement
Government Forests	Reserved Forest (Section 3 of the Forest Act 1927, Section 4 of the KP Forest Ordinance 2002)	Temperate and Subtropical Chir Pine	Timber sale proceed: 100% government Seigniorage fee to adjacent guzara owners Community rights: Usufruct rights[10]: Deadwood, NTFP/ controlled grazing, litter	93,951 hectares Abbottabad, Mansehra, Haripur, DI Khan, Hangu, Karak, Kohat, Nowshera	Government owned (proprietary rights), administered, regulated and managed by the Government through FEWD. Managed through working plans.
	Protected Forest (Section 29 of the Forest Act, Section 29 of KP Forest Ordinance)	Temperate and Subtropical Chir Pine	Timber sale proceed: 20-40% government 60-80% Concessionists Community rights: Usufruct rights: Timber for domestic use, deadwood, NTFP, grazing.	470,761 hectares Buner, Chitral, Lower Dir, Upper Dir, Kohistan, Shangla, Swat, Bannu, Hangu, Lakki, Malakand, Mansehra,	Owned (proprietary rights), administered, regulated and managed by the Government through FEWD. Managed through working plans. May also be managed through joint Forest Management committees and Government.
	Unclassed forests	Temperate	Timber sale proceed: 100% government Community rights: Usufruct rights: deadwood, NTFP, grazing, litter	105,202 hectares Abbottabad, Mansehra, Tank	Owned (proprietary rights), regulated and administered by the government through FEWD. Managed through working plans. May also be managed through joint Forest Management committees and Government.
Private Forests	Guzara Forest (Section 35 of KP Forest Ordinance)	Temperate and Subtropical Chir Pine	Timber sale proceed: 20% government 80% guzara owners Community rights: Usufruct rights: Timber for domestic use, grazing, deadwood, NTFP, litter, land for agriculture	278,473 hectares Abbottabad, Battagram, Kohistan, Mansehra, Haripur, Swabi	Owned jointly or individually by village owners. Administered, regulated and managed by government through FD. Managed through working plans. May also be managed through joint Forest Management Committees and Government.
	Resumed lands	Temperate	Timber sale proceed: 100% government	36,531 hectares	Owned jointly or individually by village owners. Administered, regulated and

10A usufruct is a legal right accorded to a person or party that confers the temporary right to use and derive income or benefit from someone else's property. ... While the usufructuary has the right to use the property, they cannot damage or destroy it or dispose of the property.

Legal Category / Tenure Regime		Forest type	Rights	Area and locations	Management Arrangement
	(Section 36 & 37 of the KP Forest Ordinance)		Community rights: Usufruct rights: Timber for domestic use, grazing, deadwood, NTFP, litter	Battagram, Charsadda, DI Khan, Hangu, Haripur, Karak, Kohat, Mansehra, Mardan, Swabi, Tank	managed by government through FD. Managed through working plans. May also be managed through joint Forest Management Committees and Government.
	Section 38 Forests (Section 38 of the Forest Act, Section 38 of the KP Forest ordinance)	Temperate / sub-tropical	Timber sale proceed: 20% government 80% owners Community rights: Usufruct rights: Timber for domestic use, grazing, deadwood, NTFP, litter, land for agriculture	7,763 hectares Hangu, Haripur, Karak, Kohat, Peshawar	Owned jointly or individually by village owners. Administered, regulated and managed by the Government through FD. Managed through working plans. May also be managed through joint Forest Management Committees and Government.
	Communal forests	Temperate / sub-tropical	Timber sale proceed: 20% government 80% communal owners Community rights: Usufruct rights: Timber for domestic use, grazing, deadwood, NTFP, litter, land for agriculture	49,754 hectares Buner, Upper Dir, Malakand, Nowshera	Owned jointly by communities. Administered, regulated and managed by the Government through FD. Managed through working plans. May also be managed through joint Forest Management Committees and Government.
			Total forest area	**1,882,015 hectares**	

Source: Development Statistics of Khyber Pakhtunkhwa 2020, Bureau of Statistics, Planning & Development Department, Government of KP, www.kpbos.gov.pk

1.2 Structure of KP Forest, Wildlife and Environment department

A comprehensive policy shift took place in KP during the forestry sector reform initiatives supported by international partners including the Swiss, Dutch and the Asian Development Bank during mid 1990s which resulted in revision of provincial forest policy, repealing pre-independent forest laws with induction of new ones, and restructuring of the forest administration in KP. The new policy also integrated almost all major global good governance principles of participatory forest management under multiple forest functions in a conservation and environmental protectionperspective. The reorganization of department though also faced several critical views (e.g. Shabaz and Geiser 2009; Geiser et al 2004) due to difficulties in yielding quick intended results which was too ambitious to expect from the department. The newly organized institution, however, had all necessary elements to cater to the new international obligations and give space to multi-actor participation (Nizami et al 2019). Before and after restructuring, the KP forestry sector became a pioneer in introducing community-based forestry management / joint forest management (JFM) and made all the efforts to formalize these approaches through rules, manuals and modes of implementation (examples include Community Participation / JFM Rules 2004, Village Planning Manual 2012, institutionalization of Village Development Committees, *Nigehban* and *Chowkidar* in all the forest enhancement activities*).* Forest Planning &Monitoring Circle (FMC) is responsible for preparing short, medium, and long-term plans related to forest management through participatory frame conditions.

An organogram of the KP Forest, Wildlife and Environment department is provided in Figure 3.

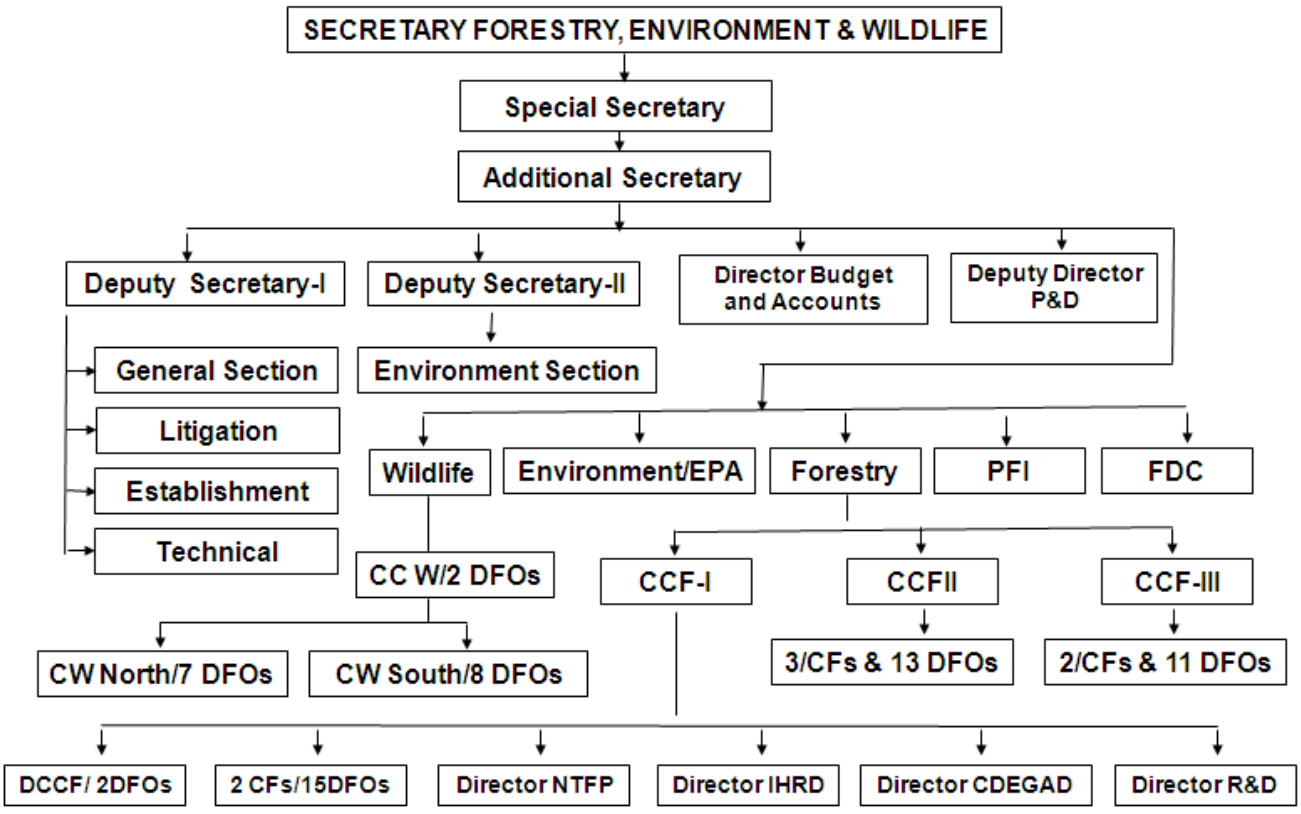

Figure 3 Institutional set up of KP Forests, Environment and Wildlife department

1.3 Stakeholders, Roles, and Responsibilities

This section compiles results from secondary analysis of information contained in various studies and published documents and discussion with key informants from the province.

The Forest Department and local communities are the key actors with the highest stake in REDD+. The department is a pioneer in supporting JFM activities and implementation of forest enhancement activities at a mass scale in close coordination with other key agencies. The department recognizes contribution from local community, other relevant government institutions, and CSOs/NGOs for their engagement in forest development, sustainable management and capacity building activities.

Table 2 presents some of the key stakeholders that are relevant in implementing different REDD+ initiatives in the province including government, civil society, national and international organizations, communities, development projects, media, private sector etc.There are four key groups of forests in KP having different (and at times overlapping) social and economic interests and influence in forest management related decisions and their implementation[11]:

1. ***Forest owners and concessionists*** who, in practice, control and use forest for their basic needs (timber, firewood, grazing, grass cutting, fodder collection, NTFP collection etc. and get revenue through forest sale).
2. ***Forest communities without ownership rights*** are mostly involved as labour force in commercial forest harvesting, are poor and dependent on forests. Poverty and disputes with owners may compel this group for deforestation and forest degradation through illicit means.
3. ***Forest contractors*** invest in forests for profit purposes. They use their influence to go beyond the prescribed volumes, and therefore, are the major contributor of deforestation and forest degradation.
4. ***Refugees and nomads*** are non-sedentary and depend on the forests for grazing their cattle. They have little long-term stake in the forest and thus fully exploit forests for their needs (e.g., firewood, huts) and cause degradation due to overuse of forests and damaging regeneration by trampling / grazing by animals.

A complementarity among stakeholders may reduce the risk of conflicting uses and overlapping priorities towards forest resources leading to forest degradation.

11Draft Benefit Sharing Report, KP Forest Department (2019)

Table 2: Key REDD+ Stakeholders in Khyber Pakhtunkhwa

Key stakeholder Group	Stakeholders	Roles in REDD+
Government Institutions	• Forest, Environment and Wildlife Department • Agriculture Department • Mineral Department • Planning &Development Department • Tourism Department	• Responsible for implementing REDD+ Action Plan • Providing conducive policy, legal and institutional environment for forest management planning, administration and technical support, monitoring and control of illegal activities, coordination with other government and non-government agencies
Communities	• Individual households, forest owners, forest users and dwellers • Organized communities such as village development committees or their apex institutions • Women organizations in the villages or their apex organizations • Joint Forest Management Committees organized / facilitated by the Forest department • Organization of forest users / forest owners • Forest Contractors with illegal practices.	• Have a direct stake in REDD+ benefit and thus conserve forest resources for a longer term while responsibly using forest resources according to *de jure* or customary laws • Forming local community groups to efficiently support planning & implementation of forestry programmes, projects and/ or activities • Provide local knowledge to understand the driversof deforestation &forest degradation • Ensuring participatory inputs for developing forest management and operational plans • Implement forest conservation, protection, and management which mainly includes plantations, record of harvesting and preventing forests associated crimes (illegal cutting and trafficking of forest trees etc.). • Engage in forest monitoring and strengthening participatory monitoring process to ensure transparency of monitoring outputs (e.g. increase or decrease in carbon stocks)
Civil Society Organizations	• Local NGOs interested in development sectors with an implication on communities and forests • Citizens' fora and collectives for opinion building • NGOs interested in development sectors with an implication on communities and forests • Conservation Organizations/Village Development Committees	• Organize and strengthen community organizations • Mobilizing civil society for effective public sector development policies in forestry sector • Create platforms for dialogue on forest management issues • Promote rights issues particularly of children, women, youth and marginalized groups living in or adjacent to forest areas • Promote voices/concerns of poor and marginalized social groups • Offer implementation of development interventions when required
International organizations	• International NGOs interested in development sectors with an implication on communities and forests • Multi-lateral organizations with political power to influence policy and global opinion • International donor organizations	• Providing advocacy, advisory, and technical roles in developing or modifying policies that grant or protect local people's equitable access to forest resources • Facilitate advocacy for environmental conservation and public awareness • Build capacity of government and local communities to plan, implement and maintain forest protection and conservation activities • Helping government institutions and local communities to implement the programmes and specific activities inherent in the forestry sector's changed policies e.g. REDD+ • Generate finances for forest development (e.g., research &technology development.

Key stakeholder Group	Stakeholders	Roles in REDD+
Private Sector	• Wood based industries • Banks/ Micro Finance Institutions • Private investors and traders • Technology developers and vendors • Tour Operators/travel agents	• Invest in sustainable forest managementthrough sustainable business opportunities (e.g., carbon tradeoffs, timber processing and trade; NTFP business; eco-tourism etc.) • Providing access to microfinance for businesses, local production and promoting jobs • Creating alternative opportunities for local economies through employment and income generation benefits from the market for local communities and forest owners • Creating linkages through public-private partnership to contribute to participatory planning for reducing illegal and unsustainable activities • Promoting sustainable tourism
Media	• Print media, newspapers • Electronic media including public and private sources • Social media • Institutional communique, newsletters and magazines	• Highlightingequity issues in favour of weaker stakeholders (women, landless, poor) in forest management • Mentoring and influencing decision making of government and other stakeholders on benefit-oriented forest management • Highlight good practice and report illegal activities • Inform the public on key programmes and activities; and ensure rights to information • Bring opinion-makers, policy makers and implementers, private sector, communities and other stakeholders together through effective communication and information sharing for identifying problems and common solutions.
Academia and research	• Pakistan Forest Institute (PFI) • University of Agriculture, Peshawar • University of Engineering and Technology Peshawar • All regional public or private universities in agriculture, technology development and social sciences • Provincial government research institutions • Federal government research institutions with or without provincial presence • International research institutions with provincial programmes (including CGIAR[12] research institutions)	• Developing science of forest exploitation and conservation and providing a steady stream of forestry professionals to both government and industry • Conduct critical and neutral studies on good practice; forest diversity and environmental changes and trends • Study dynamics of drivers of deforestation and forest degradation and forest enhancement and compare effectiveness of solutions • Study and propose alternatives (to timber, to firewood, income opportunities) and economics • Silvicultural-based sustainable forest management and solutions

12https://www.cgiar.org/

2 METHODOLOGY

The main goal of the KP' REDD+ Action Plan is to *serve as a strategic set of options to addressing drivers of deforestation, forest degradation and barriers to enhancement, while ensuring local livelihoods and incentives from REDD+ activities and aligning with National REDD+ objectives of Pakistan.*

2.1 Main objectives

1 Outline strategic optionsto address the prioritized drivers and barriers with context specific actions[13] and related budget
2 Improve the health of forest ecosystems by reducing deforestation and forest degradation and enhancement of forest biomass
3 Define effective implementation and monitoring of REDD+ actions to address the drivers
4 Identify social and environmental risks associated with actions and propose mitigation
5 Propose a clear benefit sharing mechanism associated with implementation of REDD+ activities
6 Identify areas for enabling policy, legal and institutional arrangements in favour of implementing PRAP

2.2 Steps followed for preparation of PRAP

The PRAP for the province has been prepared stepwiseusing a highly interactive process entailing consultations with representatives of the multiple stakeholders and with institutional memory holders of the subnational entity. In addition, updated secondary data, policy documents and research references have been consulted as a founding base for discussions and interventions proposed in this action plan. The methods followed are based on international best practices and examples, particularly within Asian countries[14]. The methodological steps are summarized below.

2.2.1 Review of literature

A detailed review of literature was conducted on drivers of deforestation and forest degradation in KP. This included documents available with the Ministry of Climate Change, the KP Forest Department and online sources. Available maps were reviewed, and these were improved to clearly mark administrative boundaries. These maps were then used to understand land use, land use change, forest cover/ forest cover change. This information was then presented to the stakeholders for triangulation and discussions on the drivers of deforestation and degradation.

2.2.2 Multi-stakeholder consultation

A consultation workshop was held in the province to undertake the tasks listed below.Since many of the drivers and barriers originate outside forestry sector, participation of relevant actors, other than the forest sector was ensured in the workshop so that views of all relevant actors are documented (**Annex I**).

A. Prioritization of already known drivers

13A set of interlinked activities that form a coherent actions for counteracting a driver of deforestation, forest degradation and/ or barriers to expansion of a forest carbon enhancement activity.

14https://lib.icimod.org/record/33717
https://www.unredd.net/documents/un-redd-partner-countries-181/asia-the-pacific-333/a-p-partner-countries/viet-nam-183/communication-knowledge-sharing-2000/communication-and-knowledge-sharing-materials-2002/leaflets-and-brochures-2009/17322-viet-nam-infobrief-series-viet-nams-experience-with-developing-provincial-redd-action-plans-prap.html?path=un-redd-partner-countries-181/asia-the-pacific-333/a-p-partner-countries/viet-nam-183/communication-knowledge-sharing-2000/communication-and-knowledge-sharing-materials-2002/leaflets-and-brochures-2009,https://lib.icimod.org/record/33672

The participants of the workshopshortlisted drivers of deforestation and causal links from the list that was taken from the National REDD+ Strategy and literature and prioritize them based on their impact. Following elements were considered while prioritizing drivers:

- Consider the level of future threat (increasing, decreasing or stay unchanged)
- Consider its impact on forest quality, biomass density and area
- Build consensus by scoring prioritization of drivers of deforestation and forest degradation
- Drivers of deforestation and forest degradation need to be spatially linked with their geographic and socio-economic contexts
- Establish cause and effect linkages between drivers to identify problem trees (some drivers are more the effects than drivers)
- Identify barriers to enhancement of forest (biomass) as specifically as possible

A consensus-based scoring was conducted for prioritization of drivers of deforestation and forest degradation for further analysis.

B. Causal analysis of the prioritised drivers
   - The drivers of deforestation and forest degradation as well as barriers to enhancement activities prioritised [15] by stakeholders were debated in a moderated group exercise.
   - Cause and effect of all drivers were analysed. The group prepared cause and effect problem trees so that interventions may be defined to remove causes as far as possible.
   - The geographical hotspots of the drivers identified and spatially mapped by experts for quantification.
   - The hotspots of drivers identified by the stakeholders, were randomly verified in the field.

C. Solutions and actions
   - Identify strategic solutions to address causal factors identified in the earlier exercise
   - Identify actions to address prioritised drivers and underlying causes
   - The actions were verified through field visits for their relevance to the geographic contexts.

D. Analysis of social and environmental safeguards
   Social and environmental safeguard analysis of the proposed actions and risk reduction and mitigation measures to address safeguard issues. Potential safeguards of the proposed actions were discussed and analyzed founded on the Social and Environmental Safeguard Analysis (SESA) study conducted under Pakistan's REDD+ Readiness process[16] and tailored to the KP's provincial context.

E. Focus group discussions
   Focus group discussion (FGDs)were also held with local stakeholders (including communities) where the proposed actions were presented, and risk mitigation measures were identified.

2.2.3 Expert group consultations

The analysis from multi-stakeholder session and FGDs was peer reviewed by expert groups and improved. This is the stage where a few important issues related to REDD+ implementation were elaborated including:

- Outline overall distribution mechanism for potential carbon benefits emerging REDD+ activities
- Capacity needs assessment of the stakeholders in connection with REDD+ implementation
- Identify measures to address capacity gaps and enhance existing capacities
- Monitoring indicators and protocols for proposed actions.
- REDD+ benefit sharing mechanism proposed to monitor distribution of benefits
- An indicative budget for interventions

15 The participants were encouraged to identify new driver, if any, or split / merge earlier drivers identified before prioritization exercise.
16 https://www.redd-pakistan.org/wp-content/uploads/2021/06/Strategic-Social-and-Environmental-Assessment-PAkistan.pdf

2.2.4 Quantitative analysis of deforestation and degradation

A spatial analysis was conducted to understand changes in forest leading to conversion from forest to other land cover classes (deforestation). In this study, 2008 and 2012 land cover maps at level 1 (6 IPCC classes) were used for the spatial mapping. At the province level using a 6x6 land cover classes matrix was generated to assess the conversion of the forest area to other land cover land cover classes (i.e., Forest to Cropland, Forest to Grassland, Forest to Settlement, Forest to Wetland and Forest to Other land).No recent studies are available for quantification of degradation.Therefore degradation hotspots were identified by the stakeholders during the interactive session in the PRAP workshop and were mapped accordingly after random field verification.

2.2.5 Drafting and endorsement of the PRAP

Using the material collected, the PRAPwas developed which includes immediate, medium and long-term intervention. The PRAP also includemonitoring protocols, safeguards and actors relevant to implement actions.

The plan was endorsed by the Provincial REDD+ Management Committee on 7th April 2022 in Peshawar (the endorsement note is attached in **Annex – II**), the discussion and feedback from the PRMC were integrated in the plan and were shared with the KP Forests, Environment and Wildlife Department.

3 DESK REVIEW: DIRECT AND INDIRECT DRIVERS OF DEFORESTATION AND FOREST DEGRADATION

As a first step to preparing PRAP, desk review of drivers of deforestation and forest degradation was conducted.

KP's forests have been receiving a substantial challenge in the recent past with fast conversion of high-density classes to lower density classes as well as losing forest resources to other land uses (Fischer et al 2010). With an ever-growing population and increasing demands for wood and wood-products on a very small forest resource base, all forests in KP remained under continuous stress and the utilization of these forests over and above their productive capacities. Forests' use for energy purposes was identified as the main culprit by various studies (Fischer 2010, Häusler et al 2000). Despite known facts about the rapidly disappearing forests and its underlying causes, affirmative changes in forest administrative structures, and policy to engage local opinion and ground realities – the management approach of the department continued to assume that the forests in KP will flourish again with appropriate technical forest management system. Well thought out strategy to address the real problem of energy requirements of the local people could not be organizedand forests continued to disappear.

After an internal deliberation of the situation and with the induction of a new political government in 2013, the KP government recognized rising energy demand and scarcity of forest resource as leading problemscontributing to deforestation and forest degradation in the province. The KP government, therefore, devised a strategy with a commitment to a completely rethought-out planunder the Bonn Challenge by investing in Nature-based Solutions (NbS) through a Green Growth Initiative to restore 348,000 hectares forest area by 2020 (FD, 2018). The main pillar of this initiative was launching Billion Tree Afforestation Project (BTAP) whereby 1.2 billion trees were planted beside supporting natural regenerated during 2014-2018 at cost of Rs 14 billion. An investment of approximately US$125 million was directed towards the project from provincial resources. This project increased KP's forest area from 20.3% to 26.6% bringing 6.3% area added to the existing forest(676,136 hectares) with interventions such as regeneration enclosures, reforestation, land stabilization. The enclosures increased 1.3% forest area, fresh plantation/sowing contributed to 3.1% and farm forestry added 1.9% forest cover to the provincial forest statistics (Munir et al., 2018). It is expected to result in total carbon sequestration of 0.04 GtCO2e[17] by 2023.

Based on the success story of BTAP, the Government of Pakistan launched the largest ever afforestation programme in the history of the country i.e. the Ten Billion Tree Tsunami Programme (TBTTP). This four-year flagship national programme (2019-2023) will increase the existing forest area. During phase one, 3.29 billion plants will be planted and/or regenerated to restore nine different forest categories over an area of 1.2 million hectares by 2023. During phase two, 750 to 850 million plants/ year will continue over the next six years up to 2030.The estimated project cost of about US$800 million is being met nationally from indigenous resources. TBTTP is expected to sequester 148.76 MtCO2e emissions over the next 10 years. Pakistan's emissions as per 2018 are 489.87 $MtCO_2e$, and BTAP and TBTTP are expected to sequester around 500 Mt CO_2e by 2040, if implemented fully, which shows a significant potential for the country to report its performance compared to 2012 i.e. national FREL of Pakistan.

KP has been a flag bearer of introducing and successfully implementing several innovative projects which have helped promoting participatory forest management and enhancing forest cover in the province[18]. However, at the same time, the forestry sector of KP has been under the spotlight by several national and international researchers of high repute with a lot of published material (journal articles, books, dissertations) on several challenging aspects of forestry management, most important being the governance of forest resources.

17 https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Pakistan%20First/Pakistan%20Updated%20NDC%202021.pdf

18 Some of the well-known names include Swiss supported Kalam Integrated Development Project (KIDP), Forest Management Centre Support Unit (FMC), Integrated Natural Resource Management Project (INRM), Dutch supported social Forestry project Malakand Dir (SFPMD), ADB supported Forestry Sector Project (FSP), and government supported Ten Billion Tree Afforestation Project (TBTTP) and its predecessor Billion Tree Tsunami Project.

A review of published research, including the references quoted in preceding pages, the forestry sector in KP faces some of the following major challenges:

- Forestry service in KP demonstrates an open mind towards community participation and recognises their role in dealing with chronic governance challenges in the sector. The sector has been reformed in the early 2000s with revised policies, rules, and mechanisms to practically implement participatory approach. However, this is not sufficiently supported by a resource allocation, incentive mechanism, and/ or capacity development. This results in low level of community interest in supporting forest management activities.
- Some of the short-term policies, such as timber harvesting ban at national level, contradicted the development indicated in the previous point and further dwindled consistency of the process. The studies show that timber harvesting ban did more harm than benefit since it suffocated sustainable management and took away the incentive to conserve forests only for ecological reasons.
- Forest management in KP has always been a cross-sectoral issue (e.g., with agriculture, livestock, mining, water, tourism) whereas little cross-sectoral coordination exists among relevant actors and forest users and owners. Lack of compliance of approved forest polices and rules is a multi-actor issue.
- High altitude forests are the key to conserve water towers of the country and hence hold a high significance for the province in this regard (Grumbine et al 2014). Taking the entire history of events since 1970s and the measures taken by the FD and partners – a massive progress has been made in recent years to rise from a deep decline to increase forest coverand to some extent reduce intensity of denudation by strengthening the system of regeneration enclosures. However, the very basic issue of forest governance and a continuous leakage[19] from natural forests, especially from high altitude forests, needs a continuous attention to prevent what was reported by a study in 2008-10 (Fischer et al. 2010).
- In hilly regions, forest areas are highly exposed to overexploitation due to high population densities coupled with poverty and lack of alternative livelihoods due to narrow economic base, which often led to high dependence on forests.
- Unclear forest land tenure with heavy loads of disbalanced rights has been another challenge for forest law enforcement. An important hint in this regard is that only 6% of KP's forests are reserve forests with complete ownership of the government and the rest are either privately owned or are encumbered with royalty up to the tune of 80% in the timber sale proceeds. Seeing this in view of timber harvesting ban even more confirms that the trust among private owners on government's intent to introduce incentive oriented policy through REDD+ is low.

During the desk review,the Drivers of Deforestation and Forest Degradation (DoDD) listed by NRSand the draft provincial strategy provided a strong reference to initiate the identification and prioritization process of province specific DoDD and barriers to enhancement. These drivers were further verified through desk review of other studies on DoDD(Table 3).

19 Leakage refers to the indirect impact that a targeted Land Use, Land Use Change and Forestry (LULUCF) activity in a certain place at a certain time has on carbon storage at another place or time. https://archive.ipcc.ch/ipccreports/sres/land_use/index.php?idp=71

Table 3:Drivers of deforestation, forest degradation and barriers to enhancement determined from literature review

Deforestation	Commercial Agricultural practices	Infrastructure Development (e.g. roads, urban expansion, tourism)	Encroachment	Surface Mining	
Supported by Reference to Literature	• Draft Sub-national REDD+ strategy of KP (2020) • Draft NRS (2018) • Banba (2016) • Nazir et al. (2015) • Pakistan's R-PP (2013)	• Draft Sub-national REDD+ strategy of KP (2020) • Draft NRS (2018) • (Banba 2016) • Nazir et al. (2015) • Pakistan's R-PP (2013)	• Draft Sub-national REDD+ strategy of KP (2020) • Draft NRS (2018) • Pakistan's R-PP (2013) • Nizami et al. 2019	• Draft Sub-national REDD+ strategy of KP (2020) • Draft NRS (2018) • Iqbal (2016)	
Forest Degradation	Unsustainable wood extraction (fuelwood and timber)	Agricultural expansion for subsistence	Sub-surface Mining	Livestock grazing	Forest Fires
Supported by Reference to Literature	• GoKP (2020) • Draft NRS (2018) • Khan (2017) • Pakistan's R-PP (2013) • Jan et al. (2011b) • Nizami (2019) • Fisher et al. 2010 • Häusler et al. (2000) • GoP (1992a and b)	• GoKP (2020) • Draft NRS (2018) • Pakistan's R-PP (2013) • Fischer et al. (2005) • GoKP (2004) • GoKP (1995)	• GoKP (2020) • Draft NRS (2018) • Pakistan's R-PP (2013)	• GoKP (2020) • Draft NRS (2018) • (Ali 2016) • Pakistan's R-PP (2013)	• GoKP (2020) • Draft NRS (2018) • Pakistan's R-PP (2013) • Jan et al. (2011a) • Nizami (2012)
Barriers to Enhancement	Grazing	Forest fires	Poor management planning	Lack of coordination among institutions	
Supported by Reference to Literature	• GoKP 2020; • Ali 2016; • Jan et al. 2011a)	• Jan et al. 2011a; Nizami, 2013	• Nizami, 2013 ; Nazir et al. 2015, Khan 2015	• Nizami, 2013; • Shahbaz et al. 2006; • Ali, et al. 2006	

4 ANALYSIS OF DIRECT AND INDIRECT DRIVERS OF DEFORESTATION AND FOREST DEGRADATION

The following sections provide details on direct and indirect or underlying causes of deforestation and forest degradation and barriers to forest (biomass) enhancement.

4.1 Drivers of Deforestation

4.1.1 Prioritization of drivers of deforestation

The drivers listed from the literatureand spatial analysis of quantification of deforestation were presented to the stakeholders for further discussed and prioritization of the drivers. Two drivers were qualified by the stakeholders for further analysis and deliberation in the PRAP (**Table 4**).

Table 5 provides an overview of causes of drivers of deforestation.Locations were noted by the participants as hotspots of the prioritized drivers **(Table 6).**

Table 4: Ranking of direct drivers of deforestation

Direct Driver	Location (s)/ Forest Type (s)	Future Threat	Future Biomass/ Carbon Impact	Future Forest Area Impacted	Total
(1: Very Low, 2: Low, 3: Medium, 4: High, 5: Very High)					
Clearing of forest land for agriculture purposes	FATA, /Hazara/ Malakand	3	3	4	10
Clearing of forest land for making of housing colonies / settlements	Large urban centers	3	2	3	8
Clearing of forest land for mining purposes	Malakand and parts of Peshawar valley	2	2	1	5
Clearing of forest land for road, construction and other Infrastructure purposes	CPEC route	2	1	1	4

The participants,however, slightly changed the formulation of second driver (addition of 'housing colonies').

Due to climate change, the cropping zone in the mountainous regions is gradually moving towards higher altitudes. The opportunity provided by increasing temperatures and longer summers in the higher altitudes encourages farmers to convert land for agriculture e.g. very steep slopes are being cultivated to grow potatoes in the Kaghan valley nearer to the Babusar Top. Similar trends are observed in Chitral. Also the un-sustainable tourism is leading to conversion of land into facilities for tourists in the Kaghan Valley where the major source of energy is wood. Areas adjacent to Islamabad in Haripur district,are under pressure for converting land for housing. This is also common in all the tourist destinations of KP (Swat, Kalam, Galiat, Kaghan and Abbottabad).

Table 5: Direct and indirect causes of deforestation

Direct Drivers	Underlying/ indirect drivers
1. Clearing of forest land for agriculture purposes	• High demand for agriculture/ food production associated with limited availability of agricultural land particularly in mountainous areas, low agricultural productivity from available land, lack of vibrant market, weak infrastructure, and poor technical inputs to improve land productivity • Lack of employment and alternative livelihood sources associated with lack of incentives in forest conservation and lack of off farm skill development opportunities • Weak forest monitoring and law enforcement associated with weak

	implementation of participatory approach, unclear land tenure and lack of coordination between forest and agriculture actors • Lack of coordination for effective land use planning and policies between line departments (such as tourism, agriculture, mining and forests)
2. Clearing of forest land for housing colonies / settlements	• Increasing population and high population density in the mountain areas where majority of the forests exist • High demand for housing facilities for increasing population associated with unregulated eruption of housing facilities, ineffective or lack of land use planning and conflicting and non-coherent policies of forests and land revenue • Lack of coordination for effective land use planning and policies between line departments (such as tourism, agriculture, mining and forests)
3. Clearing of forest landfor mining or irreversible damages	• Lack of coordination for effective land use planning and policies between line departments (such as tourism, agriculture, mining and forests) • Weak forest monitoring and law enforcement
4. Clearing of forest land for road, construction and other infrastructure purposes	• Excessive demand for road construction with growth of settlements and increasing demand for improved access • Lack of coordination for effective land use planning and policies between line departments (such as tourism, agriculture, mining and forests)

Table 6: Prioritised drivers of deforestation and forest degradation for the PRAP - KP

Locations of prioritised drivers of deforestations	
Clearing of forestland for agriculture	Clearing of forestland for housing / settlement
Mostly hilly areas: Former tribal areas / newly merged districts Hazara divisions (e.g. Kaghan, Shinkiari) Malakanddivisions (Dir, Chitral)	*Large urban centers* Peshawar valley, Swat, Malam Jaba, Abbottabad and other major urban centers

Field verification of these drivers on some of the hotspots was conducted and evidence was collected through photos and conversation with local stakeholders.

The problem tree with the top two prioritized drivers of deforestation is provided in **Figure-5**

4.1.2 Quantification of drivers of deforestation

A spatial analysis was conducted to understand the changes from forest to other land cover classes (deforestation).

In this study, 2008 and 2012 land cover maps at level 1 (6 IPCC classes) were used for the spatial mapping. At the province level, a 6x6 land cover change matrix was generated to assess the conversion of the forest area to other land cover land cover classes (i.e., Forest to Cropland, Forest to Grassland, Forest to Settlement, Forest to Wetland and Forest to Other land). Reportedly 55% of the land use changes was recorded for other land use classifications including conversion to infrastructure, mining, services etc. 29% change of land use was recorded to conversion to pastures or grassland (forestland without trees). Conversion of 16% forests was noted to crops.

Figure 5 illustrates quantification of land use change / deforestation in KP.

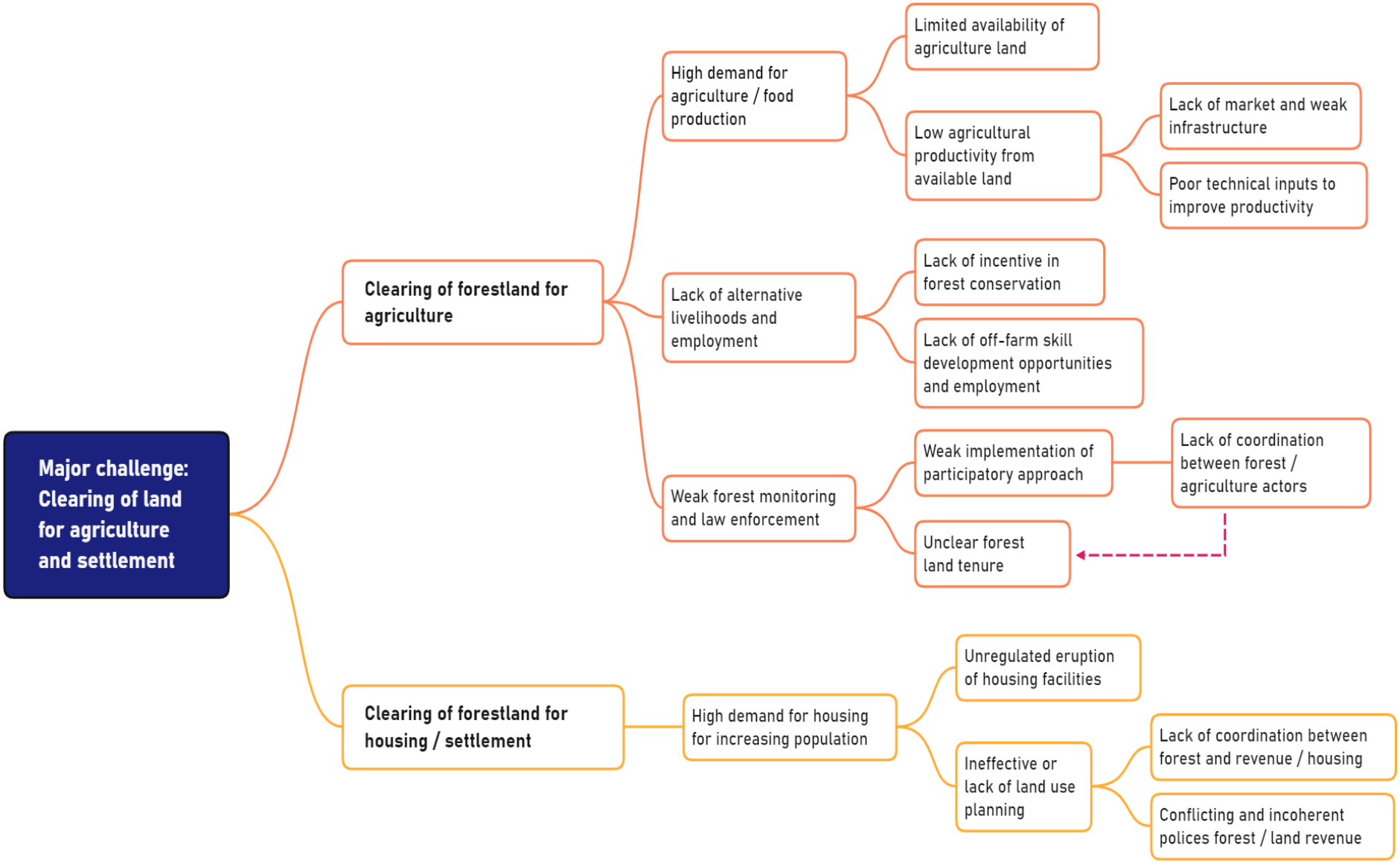

Figure 4 Problem tree Deforestation – KP

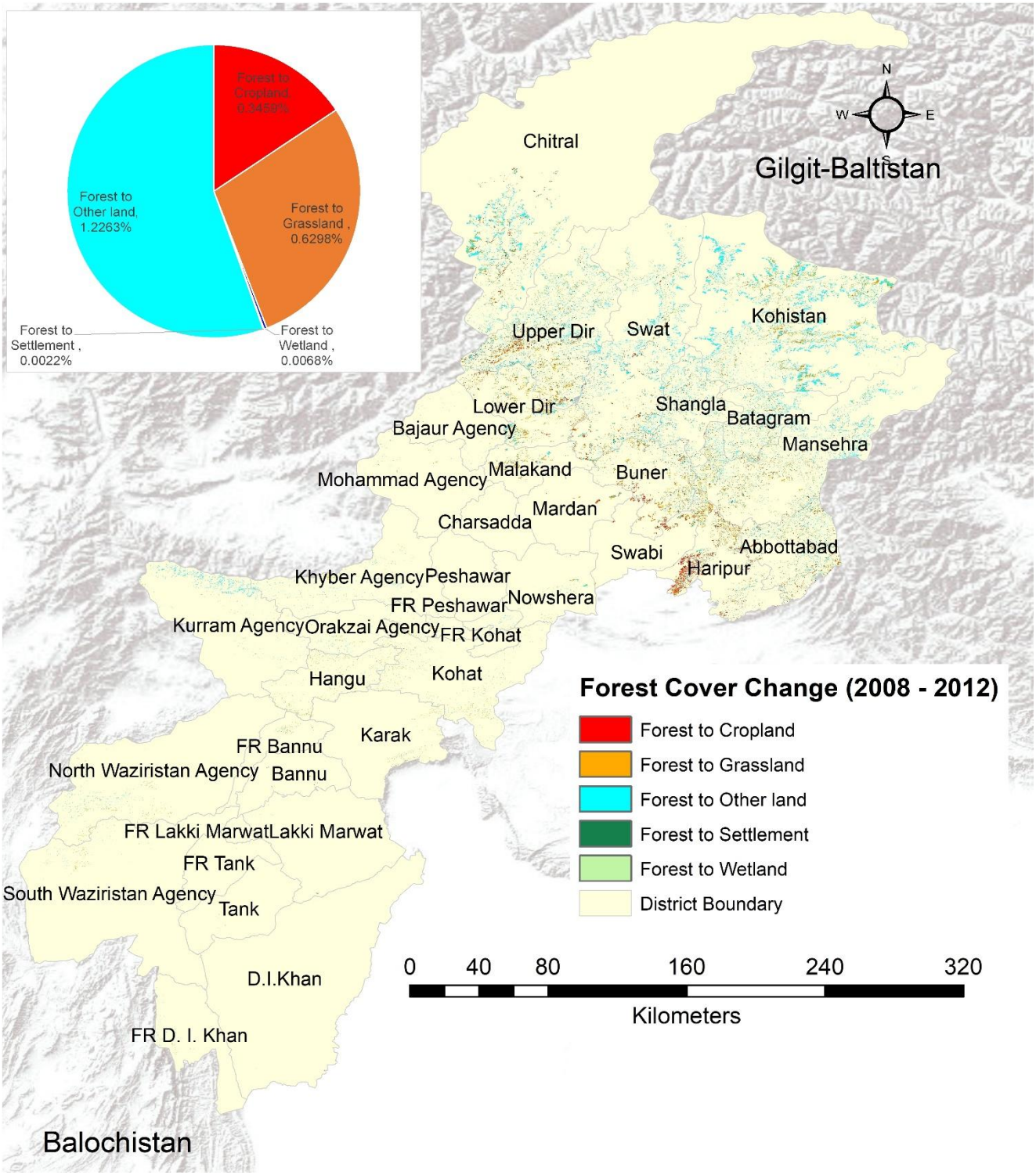

Figure 5: Hotspots of drivers of deforestation

Picture 1: Encroachment of land for agriculture

Picture 2: Encroachment of land for housing and agriculture

Picture 3: Encroachment of land for houses and agriculture

4.2 Drivers of Forest Degradation

4.2.1 Prioritization of drivers of forest degradation

Out of the drivers listed in the literature, five drivers were rated high by the stakeholders for further deliberation (Table 7).

Table 7:Ranking of direct drivers of degradation

Direct Driver	Location (s)/ Forest Type (s)	Future Threat	Future Biomass/ Carbon Impact	Future Forest Area Impacted	Total Score
(1: Very Low, 2: Low, 3: Medium, 4: High, 5: Very High)					
Excessive cutting of trees for energy/ fuelwood purposes	All forest types	5	4	2	11
Illegal cutting of trees by timber smugglers for profit making purposes	Reserved Guzara & protected, KurramTirah	4	4	2	10
Excessive cutting of trees for construction timber	Guzara & Protected Malakand, Tirah Hazara, Kurram	3	3	3	9
Unsustainable, improperly managed tourism	Kalam, Kaghan, Kumraat, Dir, Chitral, Galyat, Razmak, Tirah	4	2	3	9
Forest fires	Chir pine/ scrub	4	3	2	9
Diseases, insects, pests and other epidemics	Kail, Malakand Hazara/ Moist temperate	3	2	2	7
Grazing of livestock in forest areas	All Forest Areas	3	2	2	7
Girdling of trees	Conifers	1	1	1	3

The five prioritized drivers were grouped into three, which are detailed in **Table 8**:

1. High demand for energy, construction timber and grazing
2. Illegal timber extraction for selling (construction and firewood)
3. Improperly managed tourism activities

Energy and local need for timber are the most chronic drivers of degradation in KP, particularly in high hill areas. However, several research studies also indicate illegal extraction by mafia, particularly during late 1970s[20]. Timber harvesting ban imposed in 1992 barred state controlled commercial felling only. It did not discourage illegal harvests. These issues were verified in the field during focus group discussions and photo evidence.

In addition, while promotion of domestic tourism is a healthy trend in Pakistan to generates income, it however resulted in irregular expansion of built environment without appropriately managed sanitation, waste disposal and fire control measures. Land acquisition for tourism facilities takes toll on vaguely defined rules and weak enforcement.

Table 8: Direct and Indirect causes of forest degradation

Direct Drivers	Underlying/ indirect drivers

1. High demand for energy, construction timber and grazing	• High dependency on forests for firewood associated with lack of/ poor access to alternative fuels
	• High dependency on forest for construction timber associated
	• No access to legal timber due to ban on commercial harvesting associated with non-regulated or high prices for timber
	• Forest fires associated with lack of firefighting mechanism and equipment:
	  • Fires associated with slash and burn activities
	  • Fire practices to clear the forest area for agriculture
	  • Fire to create openings for grass growth by grazing community
	  • Fire to cause damage to trees so it can be cut
	• Excessive number of livestock without quality beyond carrying capacity of grazing lands and in-appropriate grazing management practices.

2. Illegal timber extraction for selling (construction and firewood	• Intentional girdling to kill a tree so that it can be eventually cut. • Poor coping capacity within the department to induce good governance associated with weak law enforcement and lack of accountability due to tedious judicial process • Weak implementation of participatory approach, lack of incentives for community-based forest management and lack of awareness • Lack of wood substitute for construction, inefficient use of wood and high prices of timber in the market inducing incentive to steal and sell wood for income.
3. Improperly managed tourism activities	• Unsustainable and improperly managed tourism activities due to lack of coordination between tourism department and forest department. • Risk of accidental forest fires • Lack of awareness about environmental services rendered by forest ecosystems.

The problem tree with the three top prioritized drivers of forest degradation is presented in **Figure 7**.Following locations of the hotspots of the prioritized driversare listed in **Table 9**.

Table 9: Prioritised drivers of deforestation and forest degradation for the PRAP - KP

[20] Fischer et al. 2010

Prioritised drivers of degradation		
High demand for energy wood and timber	**Illegal timber and fuel extraction**	**Improperly managed tourism**
All forest types, especially high hill and hilly forests	Reserved Guzara & protected, Kurram Tirah	Chitral, Kaghan, Kumraat, Kalam, Galyat, Razmak, Tirah

The participants identified geographical hotspots of the prioritized drivers and identified on the map (**Figure 6**). Some of these hotspots were crosschecked randomly in the field for verification and evidence was collected through photos and conversation with local stakeholders.

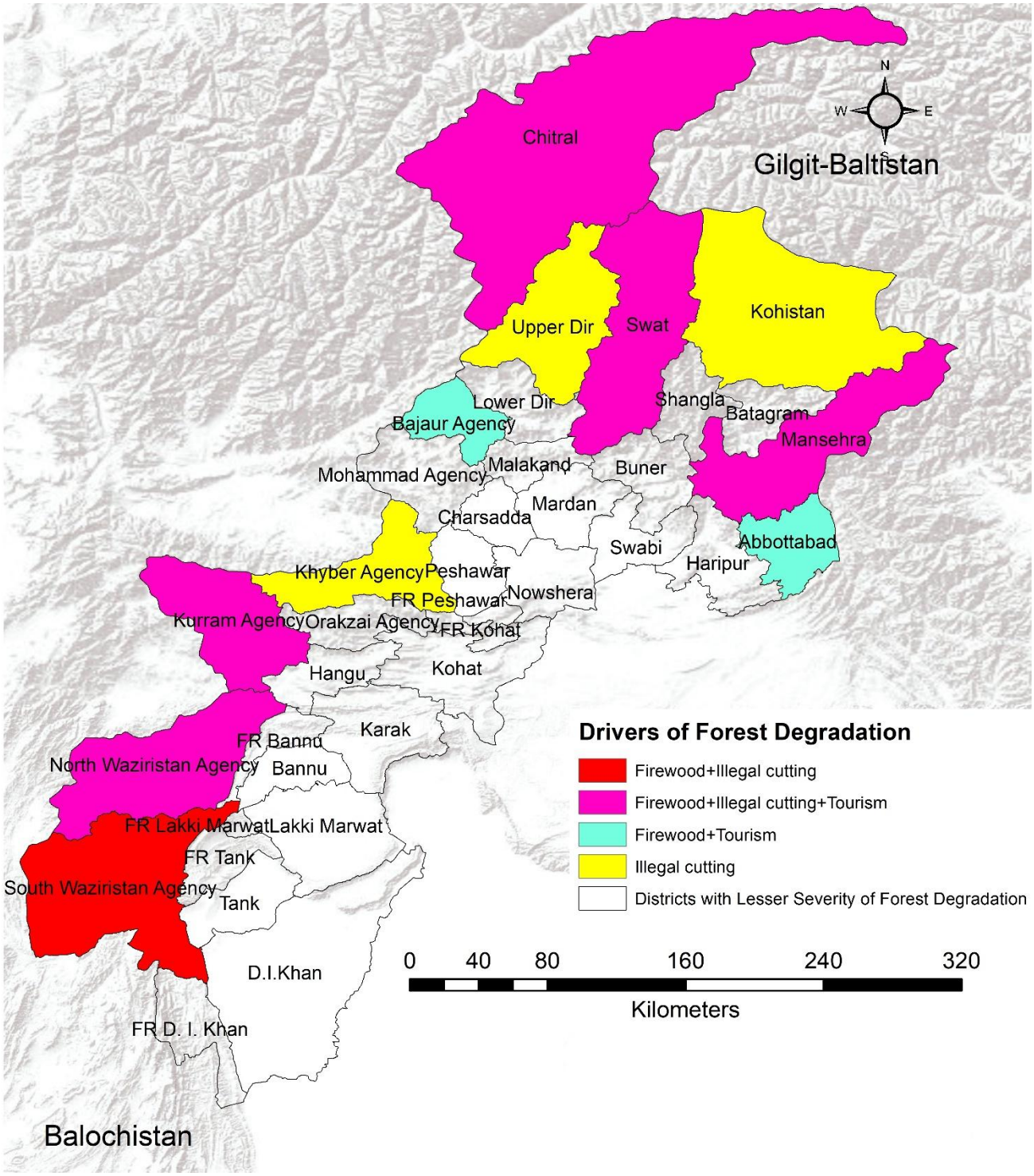

Figure 6: Hotspots of degradation

4.2.2 Quantification of drivers of forest degradation

Cutting of trees for fuelwood was identified a main cause of degradation.

Illegal harvesting for timber is another cause of degradation. Secondary data indicate that the average annual illegal timber harvest in KP during 1996 – 2010was 1.77[21] million cubic feet. A study on Timber Harvesting Ban in KP (2010) reported that total growing stock in Malakand and Hazara division declined from 278.60 m³/ ha in 1995/96 to 249.06 m³/ ha in 2008 with an average stock reduction of 2.46 m³/ ha/ year[22].

The Government of Pakistan conducted a first baseline study in 2003-2004 on "Supply and Demand of Fuelwood and Timber for Household and Industrial Sectors and Consumption Pattern of Wood and Wood Products in Pakistan". The study revealed that the per capita availability of forests in KP in 2002-2003 was 0.073 hectare (ha) per capita of the population. The study also revealed that the total supply of timber and fuel wood from state forests was 4.391 million m³. On the other hand, the fuelwood consumption in KP was 7.907 million m³ in 2003 that was anticipated to increase to 10.548 million m³ in 2018. The use of industrial timber was 1.899 million m³ in 2003 which was anticipated to increase to 2.533 million m³ in 2018. The supply gap of wood was 5.42 million m³ in 2003 that was anticipated to grow to 8.69 million m³ in 2018[23]. The KP Forest Department chalked out their afforestation and rehabilitation programmes under BTTAP to tackle the additional area in order to achieve targeted wood production and increasing productivity level through intensive management of existing forest resources.

21 Study on Timber Harvesting Ban in NWFP, Pakistan. Pp67 (reported as 50,000 cubic meter converted to 1.77 million cubic feet – Helvetas 2010)
22 Fischer et. Al. (2010). Study on timber harvesting ban in NWFP Pakistan. Published by Intercooperation Pakistan through Pak-Swiss Integrated Natural Resource Management Project (INRMP)
23 Supply and Demand of Fuelwood and Timber for Household and Industrial Sectors and Consumption Pattern of Wood and Wood Products in Pakistan ((Maanics Int., 2004).

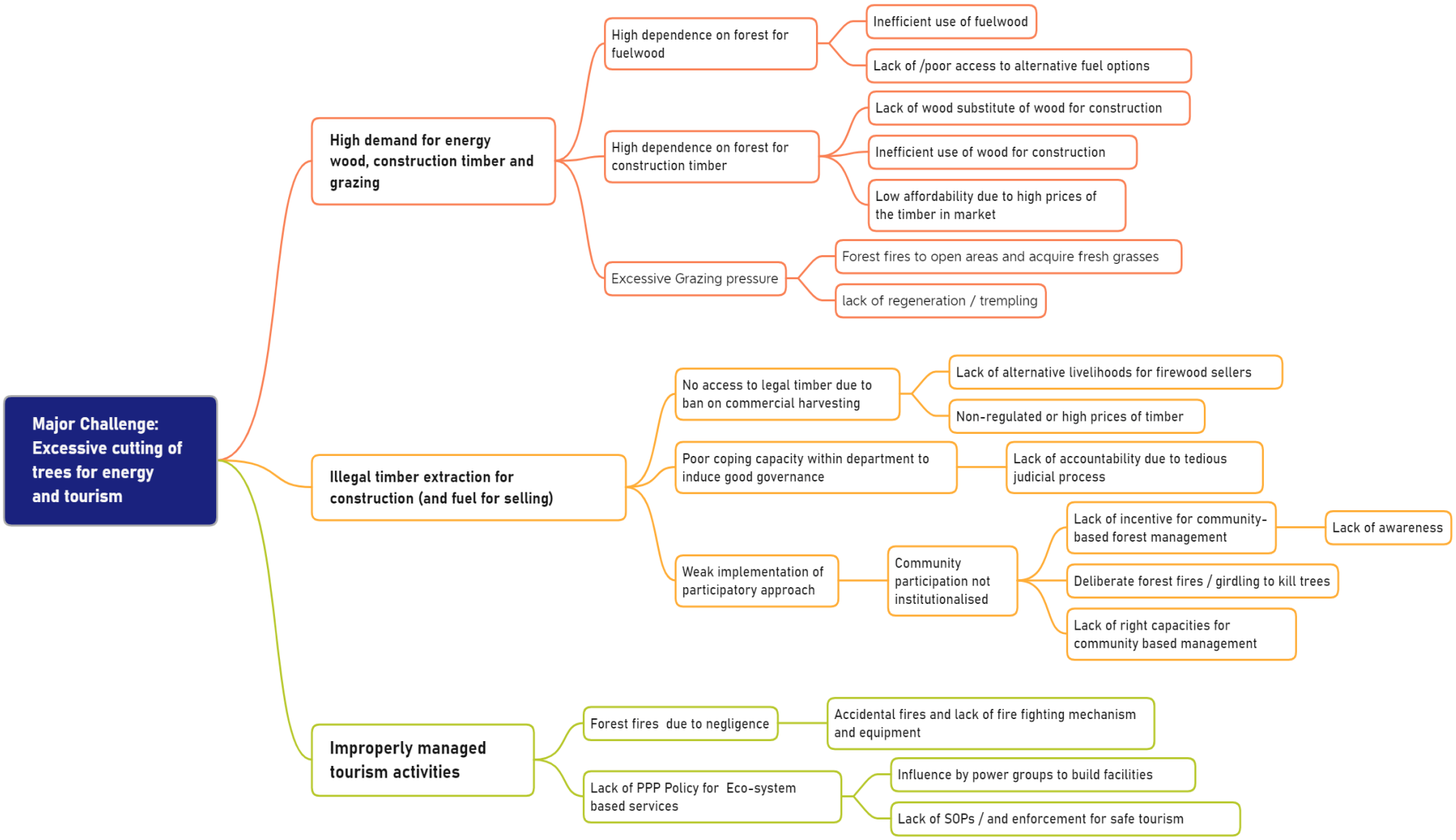

Figure 7: Problem tree Degradation

Picture 5: Forest fire on Haripur 2020

Picture 4: Unplanned expansion of tourism

Picture 6: Firewood retail shop with conifers and hardwood

Picture 7: Open grazing and trampling

4.3 Barriers to enhancement of forest biomass

4.3.1 Prioritization of barriers

The Government of KP is committed to enhance the provincial forest biomass through conservation, development, and sustainable management of forest resources. This commitment is manifested through different measures already in place contributing to lands restoration, biodiversity conservation and inclusive conservation of existing natural forests. Three enhancement options were rated by the stakeholders. They agreed that SFM, conservation and afforestation the best options for KPwhilerestoration faces several technical challenges beyond the control of the Forest department (Table 10).

Table 10: Ranking of options to remove enhancement Barriers/ Challenges

Carbon Enhancement Activities	Location (s)/ Forest Type (s)	Future Potential Area	Future Biomass/ Carbon Impact	Total Score
(1: Very Low, 2: Low, 3: Medium, 4: High, 5: Very High)				
SFM	Sites included in BTAP	4	5	9
Conservation	Sites included in BTAP	3	5	8
Afforestation	All forest types	2	5	7
Forest Restoration	Sites included in BTAP	3	3	6
Reforestation	Sites included in BTAP	2	3	5

4.3.2 Analysis of barriers

Table 11provides an overview of analysis on the barriers to enhancement activities.

Table 11: Barriers to enhancement of forest biomass

Major Barriers	Underlying challenges
Policy/ governance barriers	• Lack of efficient land use policies and action plans • Lack of incentive-based forest policy implementation • Contradictory policies and approaches impacting forest resources • Weak implementation and monitoring of existing policies
Institutional barriers	• Inadequate human and financial resources • Lack of coordination mechanism with non-forestry actors • Poor mobility for monitoring and effective service delivery • Limited knowledge on new concepts in forestry • Limited mass awareness on planting stock available in the nurseries for planting
Technological barriers	• Limited knowledge of geo-spatial tools and monitoring technology • Low capacity to adopt to modern silvicultural practices • Limited capacity of private nursery growers and lack of quality
Social barriers	• Non-serious implementation of community participation • Low awareness among communities and lack of interest for participation • Groups with vested interests / elite capture • Skewed distribution of land ownership
Economic barriers	• Lack of access to international markets for Verified Emission Reduction credits • Weak business plans to attract private sector (NTFPs)

The problem tree with prioritized barriers of enhancement activities is presented in Figure 8.

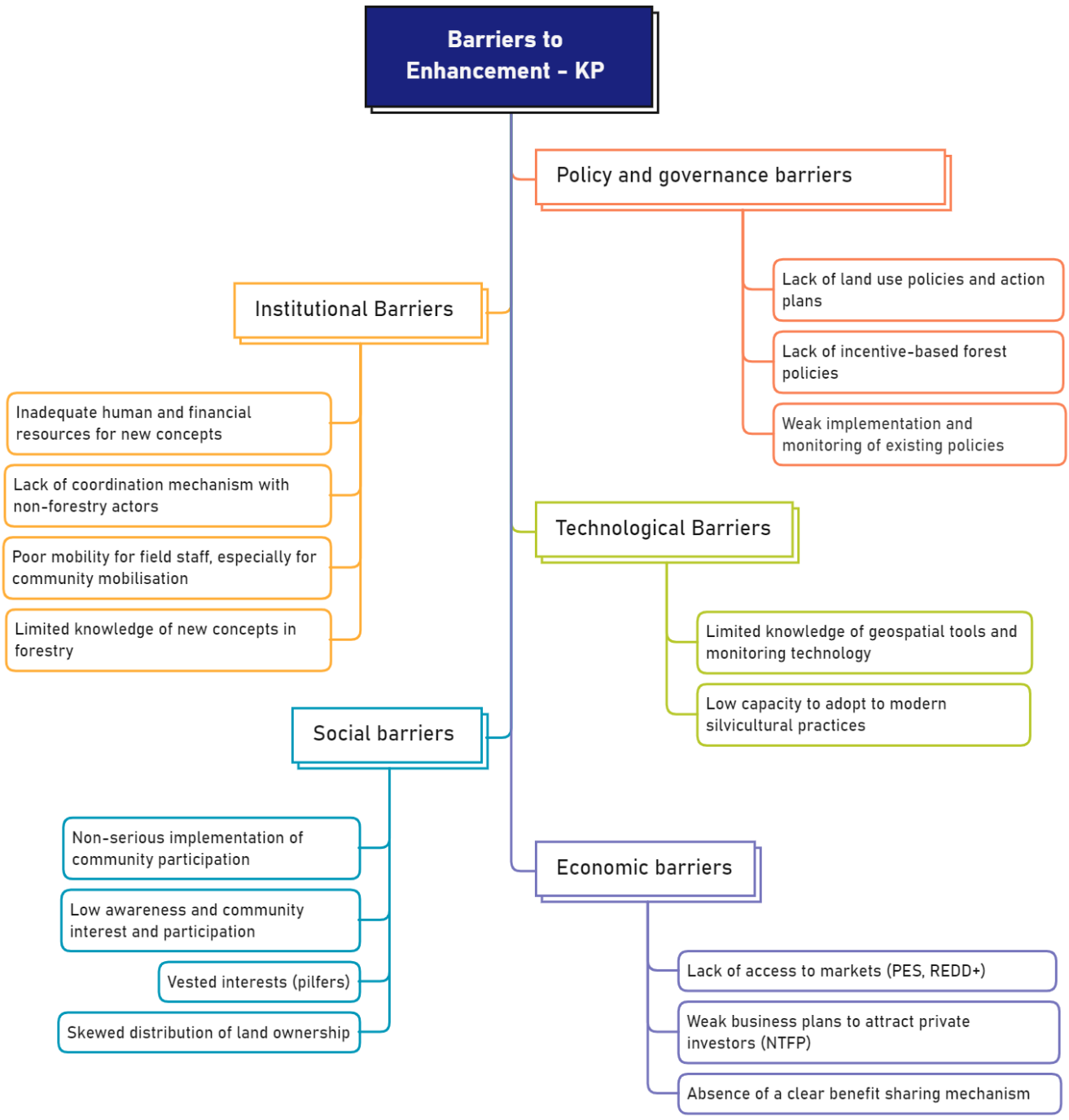

Figure 8 Barriers to enhancement activities

5 ACTIONS TO MANAGE DRIVERS, UNDERLYING CAUSES AND BARRIERS

This chapter elaborates on solutions for reducing the rate of deforestation and forest degradation in KP and activities for enhancing forest carbon stocks. Different solution pathways have been elaborated and presented in this section.

5.1 Addressing drivers of deforestation

This section documents actions for addressing direct and indirect drivers of deforestation. An action plan is given in Table 12.

5.1.1 Overall actions necessary to curb underlying causes of deforestation

Conversion of forest land to agriculture and different types of settlements is a threat to forests and leads to reducing potential of REDD+. Also, poor land tenure, weak law enforcement and heavy burden on forests for local use leads to forest degradation. There is no strategic land use mapping and planning, in particular to address land tenure issues, and inter-sectoral coordination is also poor. Therefore, the PRAP stakeholders suggested that the root cause of the problem needs to be addressed first to improve most immediate forest governance issues namely land tenure rights and overlapping polices and decisions made without inter-sectoral consultation and institutional coordination.

In addition, a strong support from community institutions needs to be sought to bank on them as an extended implementation arm of policy decisions.

In order to determine if the forest governance and management measures are going in the right direction, it is important to strengthen a provincial forest monitoring system to detect forest land use changes in time so that early measures may be taken to stop conversion of forest landThere is also need to strengthen the inter sectoral monitoring coordination so that any change in the negative direction may be quickly taken up with the concerned actor and remedies are found.

In summary, the following overall actions were identified to reduce deforestation:

- *Ensure clarity on land use* and boundary demarcation of forestland, agricultural land and land available for settlements. This will include formulation of a participatory land use policy and mapping to address land tenure issues and establish benchmarks to secure forestlands.Advocacy campaign for effective institutionalization and implementation of land use planning and policy will be required.

- *Improved and participatory monitoring mechanisms* to flag encroachment on timely basis. This includes establishment of a robust Provincial Forest Monitoring System at sub national level and link this with the national forest monitoring and MRV system to detect changes. The institutional structure of the subnational monitoring and MRV system needs to be revised and strengthened through institutionalising community participation, launch of capacity building programmes for forest staff as well as organized community institutions.

- *Coordination between departments* (esp. forest, land revenue, agriculture, mining) for planning and monitoring. This may include reconstituting PRMC and other REDD+ forums in KP.

5.1.2 Reduced forest land use change for agriculture

Strengthening agriculture systems and diversifying alternative income and livelihood options for the forest dependent poor and marginalized households should reduce pressures on forests for unsustainable fuelwood and timber extraction, given the evidence that these pressures come mainly from poorer households (due to lack of alternatives or exploitation of wood for income). Alternative income diversification and reduced timber

and fuelwood extraction for income may be achieved by provision and diversification of income and employment opportunities using natural resource base and associated skills (e.g., pine nuts business, which engages over 300,000 families in the province from collectors to traders).Based on the underlying causes of this driver, the PRAP proposes two main actions as a collective solution to the loss of forest to agriculture:

1. *Address land productivity issues* to diversify and enhance crop production from limited land. Modern techniques to enhance productivity of land and crops introduced to prevent further conversion of forestland to agriculture:
   - Irrigation practices improved by introducing modern techniques to enhance land productivity per unit of area and bring more barren lands under productive agriculture systems.
   - Improved capacity of agriculture extension in mountain agriculture to intensify productivity
   - New concepts such as floriculture, hydroponics and vertical farming introduced in mountain areas to optimize land and water (case study 1)
   - Public private partnerships established, and market access improved to ensure better economic return from agriculture

   An important caution is that increasing agricultural productivity does not automatically reduce demand for more agriculture land and conversion of forest lands especially at the beginning. This is because the opportunity cost of avoiding forest land conversion into agricultural systems is higher thanenhancing the productivity of barren lands or existing agricultural systems. Therefore, additional means, such as land use planning, mapping and strict compliance, are required in order to avoid a situation in which increasing productivity in agriculture becomes a perverse incentive for deforestation.

2. *Alternative income:*
   - Based on several successful examples, sustainable forest-based enterprises further promoted to create employment opportunities in the forestry sector (NTFPs, case study 2)
   - Vocational education and skill-based training opportunity for economically poor and marginalized (including NTFP traits); ensure their formal inclusion in Technical and Vocational Education training (TVET) menu.
   - Promote Forest based Payments from Forest Ecosystem Services[24]to incentivize conservation.

5.1.3 Reduced encroachment of forestland for housing and settlement

In order to address this issue, coordination among different state agencies requiring land to prevent decisions leading to change of land use. Since such decisions may not be easy at times, a legal protection is necessary as explained in the overall actions.

- Policy for provision of NOCs for settlement schemes (including private houses, tourist facilities) revised to include forest concerns
- Strong accountability ensured for forest resource development
- A centralised forest resource monitoring system may be helpful in raising early warning and reporting system against encroachment
- Law enforcement strengthened to curb illegal occupation for settlement
- Inter-departmental committee established to govern expansion of settlements

The solution tree with strategic options to address drivers of deforestation is presented in Figure 9.

24 A Payment for Ecosystem Services (PES) scheme is aimed at compensating *forest owners or users* to ensure a certain level of health in specific ecosystems to maintain or improve environmental services that the forest provides, including the increase in forest carbon stocks and reduced deforestation and forest degradation. The basic idea of a PES scheme is that forest owners or direct users can ensure the provision of environmental service for the enjoyment and use of those who can compensate for it. PES schemes would create a positive incentive to keep or improve forested areas (in quality or extension) and to avoid other activities that destroy or degrade the forest. PES schemes should also promote alternative sustainable activities to provide additional income to forest owners or users. NRS, 2018

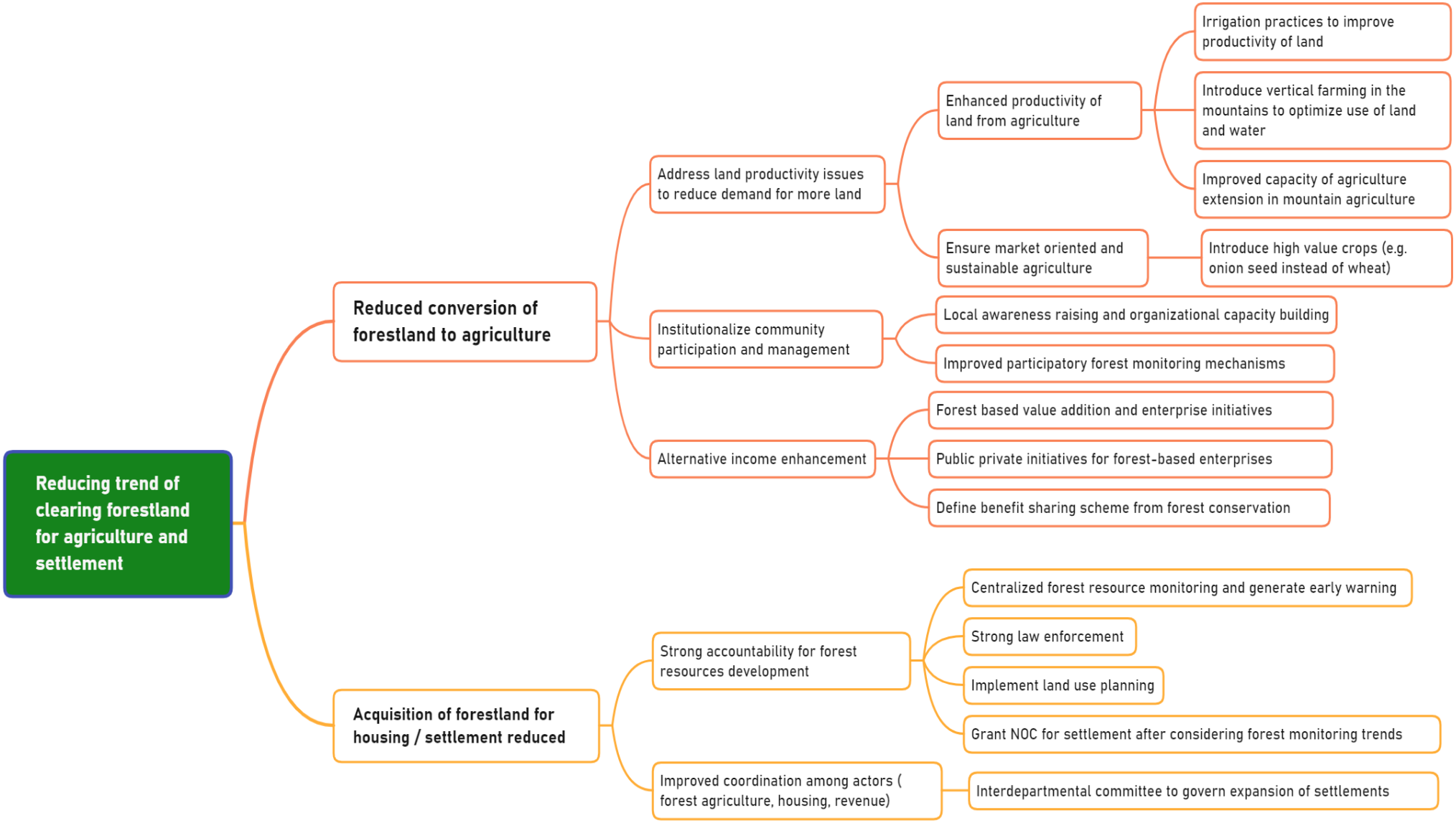
Reducing trend of clearing forestland for agriculture and settlement
Reduced conversion of forestland to agriculture
Address land productivity issues to reduce demand for more land
Enhanced productivity of land from agriculture
Irrigation practices to improve productivity of land
Introduce vertical farming in the mountains to optimize use of land and water
Improved capacity of agriculture extension in mountain agriculture
Ensure market oriented and sustainable agriculture
Introduce high value crops (e.g. onion seed instead of wheat)
Institutionalize community participation and management
Local awareness raising and organizational capacity building
Improved participatory forest monitoring mechanisms
Alternative income enhancement
Forest based value addition and enterprise initiatives
Public private initiatives for forest-based enterprises
Define benefit sharing scheme from forest conservation
Acquisition of forestland for housing / settlement reduced
Strong accountability for forest resources development
Centralized forest resource monitoring and generate early warning
Strong law enforcement
Implement land use planning
Grant NOC for settlement after considering forest monitoring trends
Improved coordination among actors (forest agriculture, housing, revenue)
Interdepartmental committee to govern expansion of settlements

Table 12: Addressing prioritized drivers of deforestation

Driver	Key underlying causes	Proposed Actions to address the underlying causes	Indicative Timeframe			Responsible Agencies/Actors		Indicative target	Indicative Budget (PKR mill.)
			Short term (1-3 yrs)	Medium term (1-7 yrs)	Long term (1-10 yrs)	Lead	Support		
Clearing of forestland land for agriculture	High demand for agriculture / food production	• Improved agriculture / land productivity • Improved access to market • Establish coordination with agriculture department				Agriculture departments	Forest department, communities	Hotspot focused targets	140
		• Institutionalize community participation • Awareness raising and effective extension support on agricultural crop intensification methods • Include farm productivity measures in PFMPs					Communities Agriculture	Awareness raising campaigns Hotspot focused targets	15
	Lack of alternative livelihoods and employment	• Identify SMEs and existing potential • Sustainable forest-based enterprises promoted to create employment opportunities (NTFPs, tourism); • Prepare NTFP rules and prioritize value chains • Introduce certification systems • Support market development of NTFPs				Forest department / NTFP directorate	SMEs	10 NTFP income options, 10 businesses, 30% women involvement NTFP rules	185
		• Vocational education and skill-based training opportunity (including NTFP traits) • Establish curricula for NTFP and other non-traditional forest-based income generation skills • Include these curricula in TVET menu • Encourage youth skill training for alternative income				Forest department / NTFP directorate, KP TEVTA	Private sector / potential buyer companies	Vocational training curricula 1000 youth engaged in skill training	45
		• Introduce Forest based PES scheme[25] to incentivize conservation • Develop PES with benefit sharing mechanism • Implement PES schemes				Forest department	Tourism (Public and private), Revenue	2 PES schemes developed and implemented	90
	Weak forest monitoring and law enforcement	• Establish Provincial Forest Monitoring and MRV System • Capacity building • Regular reporting and draw lessons				Forest department		Robust monitoring system	38
		• Strong including of participation in forest management and monitoring • Conduct PFMPs • Capacity building of communities in participatory forest monitoring					Communities Agriculture District administration	15 PFMPs with 100,000 ha area 150 individuals in community groups including 10% women	

25 A Payment for Ecosystem Services (PES) scheme is aimed at compensating *forest owners or users* to ensure a certain level of health in specific ecosystems to maintain or improve environmental services that the forest provides, including the increase in forest carbon stocks and reduced deforestation and forest degradation. The basic idea of a PES scheme is that forest owners or direct users can ensure the provision of environmental service for the enjoyment and use of those who can compensate for it. PES schemes would create a positive incentive to keep or improve forested areas (in quality or extension) and to avoid other activities that destroy or degrade the forest. PES schemes should also promote alternative sustainable activities to provide additional income to forest owners or users. NRS, 2018

Driver	Key underlying causes	Proposed Actions to address the underlying causes	Indicative Timeframe			Responsible Agencies/Actors		Indicative target	Indicative Budget (PKR mill.)
			Short term (1-3 yrs)	Medium term (1-7 yrs)	Long term (1-10 yrs)	Lead	Support		
Clearing of forestland for housing / settlement	Unregulated eruption of housing facilities	• Policy/procedure for provision of NOCs for settlement schemes • Include NOC system in land use policy • Monitor land use				Revenue departments	Forest department	NOC procedure for settlements Enforcement of rules for land use change	20
		• Strong accountability ensured for forest resource development • Centralized forest monitoring system • Participatory forest management and monitoring system				Forest departments	Communities	Fully equipped forest monitoring system at provincial and Circles level	25
		• Law enforcement strengthened • Strict monitoring, including early warning from communities				Forest department and communities	Law department	Strengthening & empowerment of community institutions	30
	Ineffective or lack of land use planning	• Land use policy development • Complete demarcation of forest boundaries and linking this with digital land records • Land use mapping • Monitor land use				Revenue department	Forest, Planning & Development, Law departments	Land use policy Land use maps for all the districts	30
		• Inter-departmental committee established • Land use monitoring committee and tribunals				Revenue department	Forest, Agriculture, Tourism, mining departments	Committee notification	3
		• Coordination between relevant departments • Reconstitute PRMC, other bodies • Regular meetings • Implement decisions				Forest department	Agriculture, Tourism, mining departments	PRMC reconstitution and notification; Minutes of meetings	3

5.2 Social and environmental risks and safeguards

This section provides an analysis of any likely social or environmental harm on people or resources as a result of proposed actions in this plan. Major social and environmental risks associated with implementation of actions are given in Table 13.

Table 13: Social and environmental risks associated with implementation of actions in KP

Risks	Likelihood[26]	Impact	Mitigation measure to be taken by REDD+ Cell in the province
Poor and marginalised households losing access to land for agriculture due to implementation of legal boundary demarcations of forestland and better law enforcement.	• Low	• Medium	• Organized community institutions dialogue with losers • Alternative livelihoods options • Prior information to these communities
Elite capture in the provision of alternative livelihoods / income generating activities, farm forestry etc.	• Medium	• Low	Ensure a clear and transparent mechanism learning from previous experiences of participatory policy making, monitoring &reporting to prioritise poor, marginalised and women groups.
Owing to the cultural constraints, women remain out of reach for alternative livelihood options and remain unaware of useful opportunities.	• High	• High	Follow gender action plan for REDD+ and ensure equal opportunities for women while introducing livelihood options
Resource entitlement issues may pop up with efforts to clarify tenurial issues. Conflicts may also arise when forest-based value chains are promoted.	• High	• High	Ensuring equitable and transparent benefit sharing mechanism and selecting the lands through organized community institutions.
Forest conversion in the process of delimitation of forest and private land boundaries in conflict areas as soon as the encroachers learn that they are likely to be removed or relocated.	• Medium	• Medium	• This needs to be countered by a very early awareness raising campaign, including use of electronic media. • Deforestation prior to this process would disqualify the encroachers from receiving any kind of support or incentive.
A centralized technology-oriented monitoring system is misperceived as an attempt to centralize forest resources.	• High	• High	Conduct awareness campaign at community level to address misperceptions

26 Likelihood Chances of this risk becoming real. The impact refers to extent to which this will sabotage REDD+ implementation and its effectiveness

5.3 Addressing drivers of forest degradation

This section documents actions for addressing direct and indirect drivers of forest degradation. An action plan is given in Table 13.A solution tree with strategic options to address drivers of forest degradation is presented in Figure 10

5.3.1 Overall actions necessary to curb the underlying causes of forest degradation

Founded on prior experience of participatory forest management in KP (case study 3), further capacity development in participatory forest management within the department is essential for reducing the rate of forest degradation in KP and would also help to conserve and enrich forest resources. Monitoring may also become efficient and effective when both government officials and forest users have become technically sound in participatory forest management and monitoring as a result of capacity building. KP's community participation rules already provide a good framework for this purpose and the CDE&GAD directorate caters for outreach to the women and men in forest areas. This IP will reinforce these initiatives.

In addition, the complexity of the underlying causes of forest degradation warrants a stronger focus on improved forest governance which is self-accountable and accountable to the communities and citizens. Some of these measures are already available within reformed frame conditions and a matter of effective implementation.

Establishment of an effective and transparent forest monitoring system and coordination mechanism are also necessaryto determine if the forest governance and management measures are going in the right direction. Regular change analysis in forest resource will determine chronic underlying causes and hep identifying revised solutions if the solutions already determined are not effective.

In summary, following overall actions are necessary to address forest degradation issues:

1. ***Ensure implementation of participatory forest management practices*** through development of PFMP plans. This is to assure that communities are part of the management structure at local level and forests cannot be conserved with department's command and control system only.

2. ***Integrate local monitoring of forest degradation activitiesinto provincial forest monitoring system***to ensure timely detection of relevant drivers and take direction of measures to address them at local and provincial level

3. In addition, an ***effective institutional coordination*** system, including non-forestry stakeholders, needs to be in place to remove bottlenecks and underlying causes of forest degradation as a team (e.g., agriculture, livestock, energy). This may be done by reconstituting Provincial REDD+ Management Committee (PRMC).

4. ***Activate KP Forest Commission (FC) and Forestry Roundtable (FRT)***. Forest Commission under the revised Forest Act was a supreme body headed by the provincial Chief Minister (or his appointee), which has the power to address contradictory policy, can give quick policy decisions to address emergencies, and ensure that laws / policies are respected. Forestry roundtables are Circle based citizens fora constituted by forest users, owners, and civil society to voice major concerns on forest governance. FRTs thus act as advisors to the FC and the Forest department to reflect if the management practices and policies are effective in their outcome.

5. ***Awareness of politicians, legislature, media, and citizens*** is necessary to enhance political and public will for supporting sustainable management of forest resources with institutionalised community participation.

5.3.2 Reduced pressure and demand for firewood, timber and grazing

A major underlying case of forest degradation in KP is lack of efficient and alternative energy, especially in hilly areas. Provision of alternative and efficient energy sources to reduce harvesting for firewood, wood substituteto curb illegal harvesting, and a non-destructive grazing systems are needed to reduce pressure on the forests. Alternative sources of fuelwood for heating and cooking may reduce the demand for fuelwood. Promotion of fuel-efficient cook stoves, solar panels and energy plantations on barren/ private lands may also reduce the rate of degradation in natural forests.Based on the underlying causes, the PRAP proposes the following five actions as a collective solution:

- *Alternative and more efficient energy sources* promoted and provided on pilot basis. The alternative energy refers to doing away from use of firewood for heating and cooking. Efficient energy refers to methods which lead to reduced consumption of firewood for multiple benefits (cooking beside water heating or space heating along water heating). Proven models of fuel-efficient stoves need to be shortlisted and promoted through market-based solutions since free distribution of stoves has failed several times in KP. One way of market-based solution is to train local hardware stores on approved design and provide them a start-up incentive so that the stoves continue to be build and sold. Similarly, smart startups may be supported to promote solar energy for cooking. Where funds and potential are available, small hydropower projects may be introduced for a longer-term benefit.
- *Multi-purpose (energy and palatable)*trees raised at suitable sites to meet local demands. This may include integrated farming and agroforestry practices, adoptedsupported with provision of grants and material. This must be supported through local awareness raising, capacity development and provision of incentives to make farm / energy / agro forestry more attractive for citizens and communities.
- *Incentive based PES Schemes*[27] designed and implemented for attractive trade off to random wood extraction for selling. Nature oriented eco-tourism practices may be included here since KP has an immense potential in this regard.
- *Encourage wood substitutes* for construction through a market-based solution needs to be promoted by providing attractive incentive to the businesses. Until and unless market is incentivised for introduction of affordable alternative building material, the prices will not go down, illegal timber extraction will continue to happen, and the citizens will use expensive wood since they have no option. The provincial government may promote such markets introducing relevant tax exemptions/ reductions, providing subsidies,or introducing cash reward system from REDD+ payments for promoting such markets.
- There is a need to *strengthen local community participation* in forest management to strengthen communal controls on free grazing (and associated practices such as forest fire), which is chiefly responsible for damaging natural regeneration. Suitable context specific measures need to be encouraged for integration in the PFMPs.

5.3.3 Reduce demand for illegal timber extraction for selling (construction and firewood)

As opposed to the previous driver which has to do with subsistence use, this driver is purely liked with exploitation of forest for commercial purpose by random removal of trees (which include activities such as deliberate forest fires, girdling etc.). Multiple measure may be tried including a stricter rule of law, making timber selling increasing more difficult and attractive, and strengthening participatory management of forests. Two actions are proposed against underlying causes of forest degradation:

- *Promote forest wood substitutes* as explained earlier to reduce the demand side for timber, monopoly of timber and incentive for illegal harvesting
- *Timber harvesting and trade made more difficult by:*
    - Strengthening community controls and participatory management
    - An efficient complaint system and disposal of justice
    - An effective forest monitoring system to detect issues

27Pilot PES schemes already designed for Naran/ Kaghan forests implemented as test case for potential replication

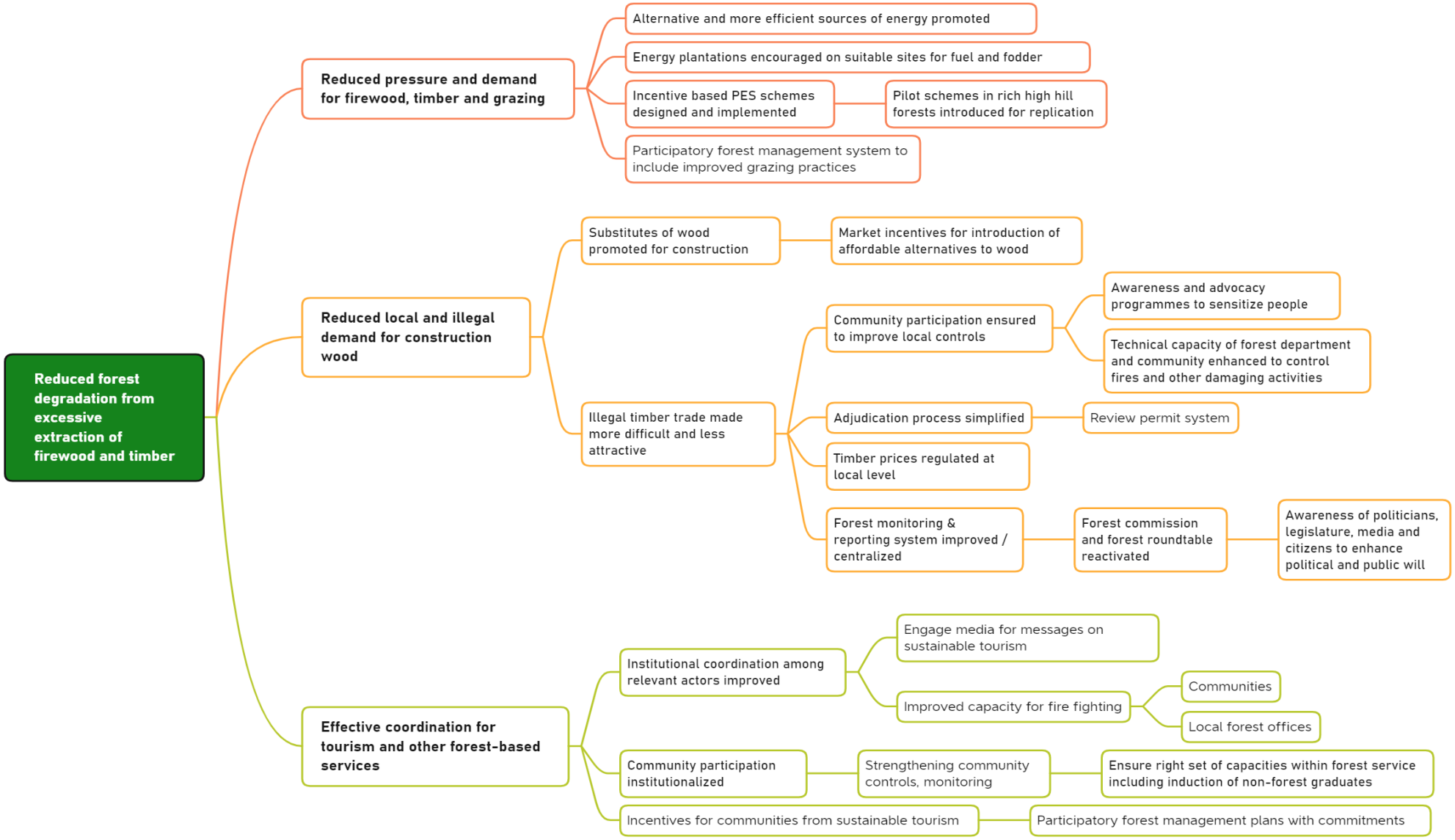

Figure 10: Reduced forest degradation from excessive extraction of firewood and timber

Table 14: Addressing drivers of forest degradation

Driver	Key underlying causes	Proposed Actions to address the underlying causes	Indicative Timeframe			Responsible Agencies/Actors		Indicative targets	Indicative Budget (PKR mill.)
			Short term (1-3 yrs)	Medium term (1-7 yrs)	Long term (1-10 yrs)	Lead	Support		
High demand for energy wood, construction timber and grazing	High dependence on forest for fuelwood	• Switch to alternative and more efficient energy sources • Identify hardware vendors and market-based subsidies for alternative energy + train hardware • Encourage energy solutions with incentives				Energy, power departments	Private sector, engineering universities, Forest department	At least 30% community in hotspots switch to energy mix	70
		• Identify incentive policy to promote energy plantation • Improved awareness among masses on planting stock available in nurseries for planting				Forest department	Landowners, farmers, media, communities		5
		• Identify Forest based PES schemes[28] to incentivize conservation. • Develop benefit sharing mechanism and implement				Forest department	Private sector	02 PES schemes Agreed benefit sharing mechanism	-
		• Implement participatory forest management and monitoring practices • Conduct and implement PFMPs • Capacity building on participatory approach				Forest department,	Communities Agriculture District administration	Training of community	1460
	High dependance on forest for construction timber	• Promote forest wood substitutes to curb illegal harvesting of trees • Discover options, list SMEs, businesses • Incentivise wood substitute businesses to expand				Forest department	FBR, private sector	Identify companies and subsidy including free publicity	30
		• Community participation to improve local controls (participatory forest management approach) • Illegal timber trade made more difficult by: • Community participation to improve local controls • Making legal process faster + Regulating timber prices • Effective forest monitoring system for timely detection				Forest department	Communities, Law department,	Strengthen and empower community institutions, revise legal procedures	- -
		• Improve coordination among relevant departments • Reconstitute PRMC, other bodies • Regular meetings and implement decisions				Forest department	Agriculture, Revenue, Tourism, Mining	PRMC notification, meeting minutes	-
	Excessive grazing pressure	• Multi-purpose tree planting: energy &palatable species				Forest department	Farmers, institutions	Choice of mixed species	100
		• Participatory forest management system to include improved grazing practices				Communities	Forest department, graziers / owners	Strengthen empower community	-

28 A Payment for Ecosystem Services (PES) scheme is aimed at compensating *forest owners or users* to ensure a certain level of health in specific ecosystems to maintain or improve environmental services that the forest provides, including the increase in forest carbon stocks and reduced deforestation and forest degradation. The basic idea of a PES scheme is that forest owners or direct users can ensure the provision of environmental service for the enjoyment and use of those who can compensate for it. PES schemes would create a positive incentive to keep or improve forested areas (in quality or extension) and to avoid other activities that destroy or degrade the forest. PES schemes should also promote alternative sustainable activities to provide additional income to forest owners or users. NRS, 2018

Driver	Key underlying causes	Proposed Actions to address the underlying causes	Indicative Timeframe			Responsible Agencies/Actors		Indicative targets	Indicative Budget (PKR mill.)
			Short term (1-3 yrs)	Medium term (1-7 yrs)	Long term (1-10 yrs)	Lead	Support		
Illegal timber extraction for construction (and fuel for selling)	No access to legal timber due to ban on commercial harvesting	• Review system of timber permits • An efficient complaint system and disposal of justice against forest offences • Review judicial procedure on forest offences • Strict monitoring, including acting on early warning from communities				Forest department	Legal right holders; communities; Revenue department	Revised system of permits	20
		• Promote wood substitutes to discourage illegal harvesting • Discover options, list SMEs, businesses • Incentivise wood substitute businesses to expand				Forest department	FBR, private sector	Identify companies and subsidy including free publicity	30
	Poor coping capacity within department to induce good governance + Weak implementation of participatory approach	• Activate KP Forest Commission (FC) and Forestry Roundtable (FRT) • Reconstitute, activate FC Act /FRT rules and clarify roles • Conduct regular meetings				Forest department	Law department	Restore notification of FRTs and FC	11
		• Awareness of politicians, legislature, media, and citizens • Higher Education / secondary education curricula and communication material • Conduct regular campaigns using multiple media				Forest department	Media; political leaders	Awareness raising sessions	10
		• Improved and participatory monitoring mechanisms • Capacity building of relevant actors • Regular reporting and pay attention to solving problems identified				Forest department	Communities	At least 3 sessions per community groups	10
		• Implement participatory forest management practices • Conduct PFMPs + Capacity building of relevant actors				Forest department	Communities District admin.	15 PFMPs covering area of 100,000 ha	-
Improperly managed tourism activities	Forest fires due to negligence	• Improve capacity for firefighting (communities, local forest offices)				Forest department	Communities, Local forest offices	Fire-fighting equipment in fire prone forests	30
		• Awareness of raising through media on responsible tourism				Media	Forest department; local tour operators	Awareness raising campaigns	10
	Lack of PPP policy for eco-system-based services	• Institutional coordination among relevant actors				Forest departments	Tour operators, communities, Tourism dpt.		4
		• Strengthening community controls • Institutionalize participatory forest management				Forest departments	Local tour operators, communities	Strengthen system of community wardens	4
		• Incentives for communities from sustainable tourism; integrated in participatory forest management plans				Forest departments, communities	Local tourism operators, Tourism department	Define PES system	2

5.4 Social and environmental risks of the proposed actionsand safeguards

This section provides an analysis of any likely social or environmental harm on people or resources as a result of proposed actions for addressing underlying causes of forest degradation. Major social and environmental risks associated with implementation of actions are given in **Table 15**:

Table 15: Social and environmental risks associated with implementation of actions in KP

Risks	Likelihood[29]	Impact	Mitigation measure to be taken by REDD+ Cell in the province
The risk to biodiversity from higher tendency to use exotic fast-growing species for agroforestry.	• Medium	• Low	Establish SOPs for incentivised agroforestry schemes and production systemsincluding how species will be selected for different types of ecological conditions.
Alternative energy / building material are expensive to afford by common people and their hardship increases.	• High	• Medium	Provide policy incentives to market players and regulate market prices.
Rebound effect of unsustainable energy options with high emission risks	• Medium	• Low	Together with energy actors, carefully analyse possible alternatives and encourage cleaner options with providing market support and encouraging smart start-ups.
A centralized technology-oriented monitoring system is misperceived as an attempt to centralize forest resources.	• High	• Medium	Run awareness campaign at community level to address misperceptions
The risk of elite capture in participatory forest management	• Medium	• Medium	Active participation of field staff of the forest department and CDEGAD essential to ensure inclusiveness
Disputes within community when participatory community groups try to counter deforestation or free grazing	• High	• Medium	Strong skills are needed at the DFO level to mediate such disputes. Communities need to be equipped with legal justifications to counter stubborn elements; ensure graziers have suitable alternatives; ensure grievance redressal mechanism works.

5.5 Removing barriers to enhancement activities

Multi-stakeholder consultation led to identifying a number of measures to remove potential barriers to enhancement activities. Some of these measures overlap with the solution pathways for addressing underlying causes of deforestation and forest degradation and thus have already been explained in the earlier section and compiled in **Table 16** and **Figure 11.**

29 Likelihood Chances of this risk becoming real. The impact refers to extent to which this will sabotage REDD+ implementation and its effectiveness

Table 16: Removing barriers of enhancement activities

Inclusive and transparent management and monitoring system
• Provincial and Circle level forest monitoring system established to cater for monitoring results of action against drivers of deforestation, forest degradation, and impact of enhancement activities • Forest monitoring capacities of forest department enhanced including technical and technological skills • Participatory forest management plans prepared and replicated • Participatory approach adopted and community participation is institutionalized
Incentive-based investment into forestry sector
• Participatory forest management plans designed and implemented on pilot basis including enhancement activities • Public private partnerships between government and wood-based industries (tobacco, sports, furniture, wood kilns etc.) established for enhancement activities • Land tenure cleared and incentives provided through implementation of sustainable forest management and investment for enhancement • Coordination with tourism department and other actors improved
Forest extension and outreach strengthened
• Community awareness and skill development programme (with particular attention to women) on enhancement activities • Scope of TBTTP expanded to support large afforestation schemes targeting farmlands / barren lands. • Research on forestry topics and outreach to public improved • Participatory approach adopted in practical sense through already institutionalized mechanisms • Appropriate participatory grazing system on scientific basis adopted to reduce grazing pressure from livestock rearing • Improved outreach to masses on planting stock available in the nurseries to improve demand and supply of nursery plants. • Education Department /Higher Education Department to integrate REDD+, climate change and forest conservation topics in curricula in higher and secondary education to create awareness on forests and climate change.
Improved governance and law enforcement
• Forest law enforcement strengthened • Mobility resources enhanced for improved services • Forest monitoring and reporting capacities enhanced • Human and other technological resources increased for better forest monitoring and early warning • Local community support/ participation institutionalised with appropriate resources

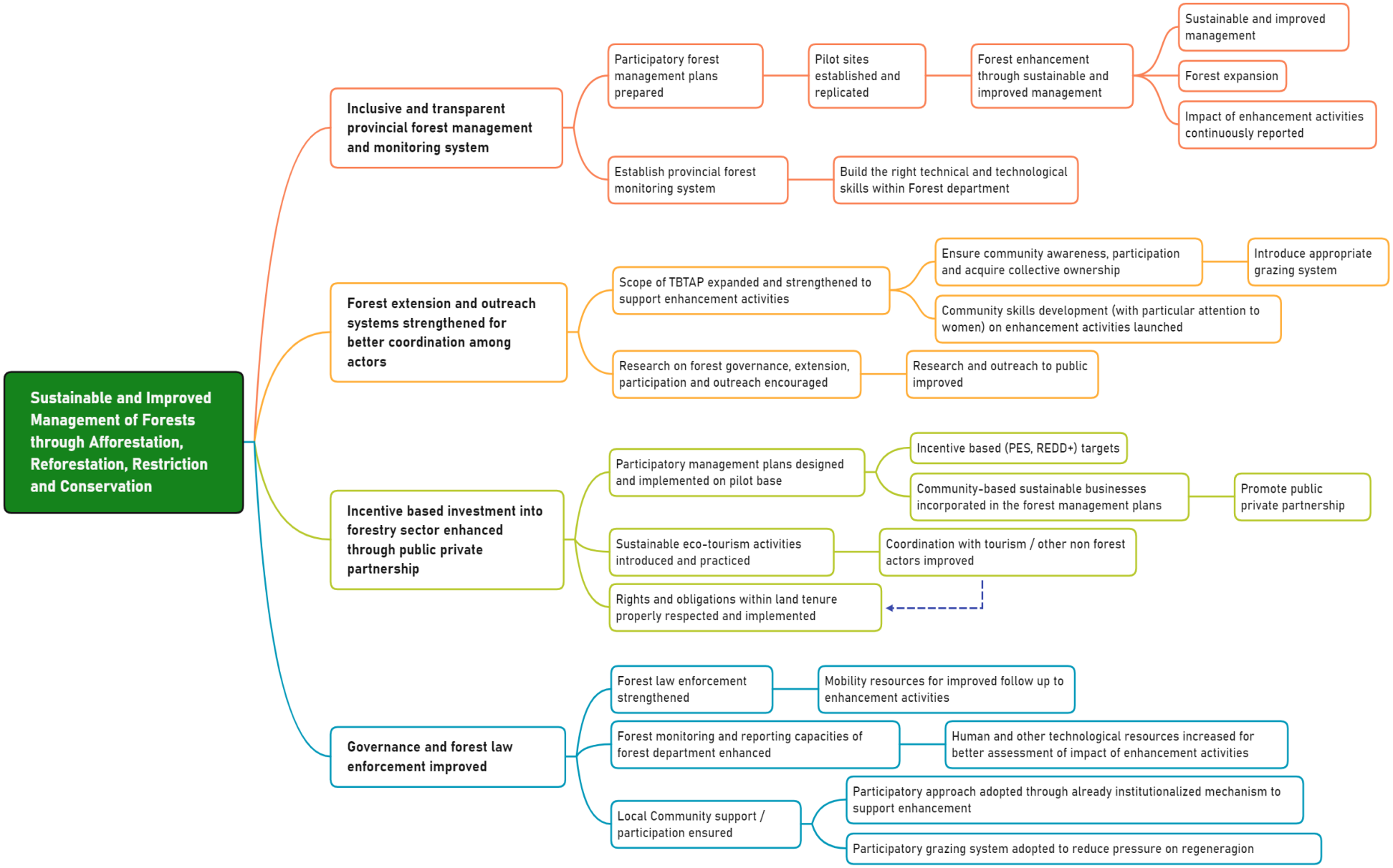

Figure 11: Sustainable and improved management of forests through afforestation, reforestation, restriction and conservation

5.6 Examples from proposed actions

Case study 1: Vertical Farming

Vertical vegetable farming is a climate and space smart technique, particularly designed for women, elderly and people with disabilities in Malakand division. It is highly resilient to climate extreme events, provides a great source of nutrition, good for household income, and has a low carbon footprint compared to conventional vegetable farming.

Picture 8: Vertical farming – low on space and water

- Optimized land use: 4 times more production from the same land
- 50% reduced demand for water
- Designed to address climate shocks (storm, intense rain, or thunderstorm
- Low cost and founded on local knowledge
- The plants receive adequate sunlight and nutrition
- Several cycles of picking are possible with an extended season
- Mulching sheet controls infestation of pests and weeds
- Fruit picking is easy

The impact of vertical farming on reduced deforestation and forest degradation has not been documented. However, this is a proven technique to improve livelihood and income from minimum land for small farmer who are also dependent on forests for livelihoods and cash income. Vertical farming also reduces the demand for converting larger pieces of land to agriculture.

Case study 2: Chilghoza pine nuts, Chitral (2003 to 2012)

Shishi valley is administratively a union council of the district Chitral. The nature has bestowed Shishi Koh valley of Chitral with numerous natural resources including Pine kernels. Most of the resources do not benefit poor and disadvantaged community of the valley because the resources are over exploited by influential traders who take advantage of the ignorance and remoteness of the local inhabitants. Pine kernel has been over-exploited by the external traders with 80% income going out of Chitral. Poor local community only found cutting of trees and selling wood more useful since they had no access to or knowledge of safe harvesting or processing. In 2003, first initiative on this value chain was introduced by Helvetas and KP Forest department under a join MOU. The objective was to conserve resource and save standing trees as a source of income generation.

Picture 9: Chilghoza Pine nut processing unit in Bannu

The impact of success in pine nut value chain on reduced deforestation and forest degradation therefore is proven and well documented. The results have been very promising, with at least 80% reduced complaints on cutting of trees, 68% increase in household incomes, 80% of already extracted nuts going to the markets instead of raw cones,

empty cone shells contribution 32% of the fuel requirement of the pine collecting families, and women acquiring small jobs for kernel extraction.

Case study 3: VDC formation a basis for PFMP in District Haripur (2011)

KP approved Community Participation Rules in 2004 which describes legal framework for organizing Village Development Committees and Joint Forest Management Committees. Integrated Natural Resource Management project (2006-2011) financed by Swiss Agency for Development and Cooperation /Helvetas and KP Forest department piloted implementation of community participation in designated forests and contributed to improving capacities within the department to conduct this process and also refine all the steps.

Chajjian village is situated in Khanpur Forest Range of Haripur Forest Division. Major land uses include agriculture, forest, grazing, and residential area. The total area of the village is 1675 acres out of which 252 acres of land is irrigated and rest of the land is rainfed. *Pinus roxburghii* (Chir) and *Olea ferruginea* (Olive) trees are in abundance. There are 587 household in the village with 80% clay paved houses. The first primary school was open in 1938. 95% of the population belong to the Awan clan).

A VDC was formed here in 2011 by the department. Both women and men participated in sessions organised for formation of the VDC. Social awareness raising sessions were held with various sub clans (called *khels*). This VDC has developed a village development plan. The plan aimed at managing resources for improved livelihoods. Four management units were established based on land uses and ownership: (a) Forests (b) Agricultural land (c) Pastures (d) Village Settlement.

Picture 10: Participatory approach in KP

This plan was implemented and yielded good results by drastically reducing forest fire incidents in the target villages, organizing a system of grazing with social measures, conducting regular planting campaigns (whereby plants were produced and sold by women) and introducing fuel efficient stoves to reduce firewood consumption. This experience will be used in future for developing PFMP and implementation.

5.7 Indicative budget

A total indicative budget for the actions identified is PKR 2140 million (8% within short term, 53% for medium term and 39% for long term actions). **Table 17** summarizes the Action Plan budget for short term, medium term and long-term activities.Indicative budget (short term, medium term, long-term) is given in **Figure 12.**

Table 17: Indicative budget for proposed actions (2022-2031) – KP PRAP

Actions	Indicative budget (PKR million)			
	Short term (1-3 years)	Medium term (1-7 years)	Long term (1-10 years)	Total
Forest enhancement activities	100	100	300	500
Managing high demand for agriculture / food production	0	25	130	155
Alternative livelihoods and employment	25	60	95	180
Provincial Forest Monitoring and MRV System	8	10	20	38
Law enforcement and monitoring	25	30	20	75
Land use planning and mapping	12	22	2	36
Reduce degradation through participatory approach	25	899	611	1535
Reduce dependence on forest for construction timber	0	15	15	30
Community based management of grazing	10	40	50	100
Address illegal timber trade issues	25	25		50
Capacity development of the department on participatory forest management	10	15	1	26
Improved capacity to manage forest fires	20	20	20	60
Improved coordination among multi actors	4	4	2	10
Total	164	1140	836	2140

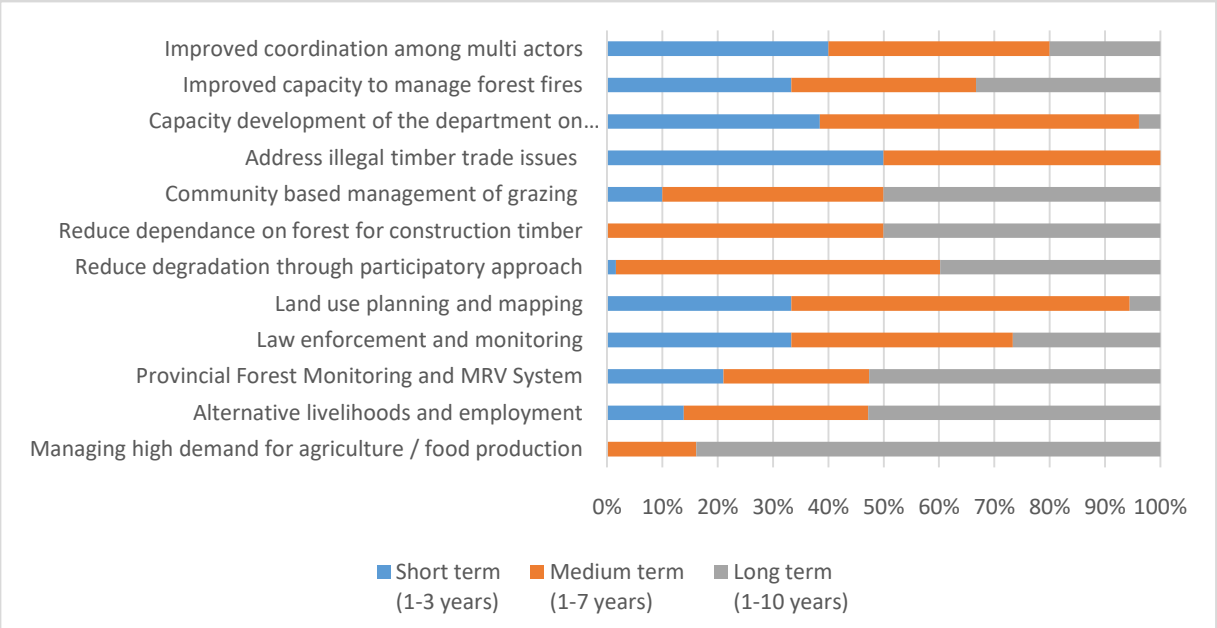

Figure 12: Indicative Budget proportions KP PRAP (%)

6 BENEFIT SHARING MECHANISM

The KP government recognizes REDD+ as a financial incentive-based forest management scheme to incentivize ongoing forest management initiatives and associated behavioral change among the local communities for addressing drivers of deforestation and forest degradation. The intent and approach of the government on REDD+ have been described in this REDD+ Action Plan.

A concept of benefit sharing mechanism was initiated in 2018 in KP province[30]. In addition, a benefit sharing mechanism was also proposed for a pilot Payment for Environmental Services (PES) scheme for moist temperate forests of Kaghan valley. These concepts were further discussed with the stakeholders during the preparation of Provincial REDD+ Action Plan.

This PRAP proposes a contract-based agreement between local stakeholders and Forest Department to provide legal grounds for REDD+ implementation and sharing of Carbon and non-Carbon benefits. In the proposed REDD+ benefit sharing model,the monetary returns from REDD+ activities (carbon credits sale) would be divided differently for different forest tenures into various heads. There are a few fundamental principles to be followed:

1. The final decision for sharing the Carbon benefits with entities outside the province will rest with the provincial government as the owner of land and natural resources in the province.
2. The decision to engage with voluntary market or buyers of Carbon credits either directly by the province with voluntary markets or via Federal Ministry of Climate Change will also rest with the provincial government in the best interest of forest resources and beneficiaries.
3. REDD+ benefits need to be seen independently of timber benefits. In case of scientific harvesting through sustainable forest management, the sale proceeds will be distributed exactly as stipulated for Reserved, Protected, Guzara or any other legal categories of the forests. In case of REDD+ benefits, the same proportion of revenue sharing do not have to be applied since Carbon is a new product and the revenue will be generated due to reduced deforestation and forest degradation.
4. A greater share to the forest owners, right holders and users will result in better REDD+ benefits since most of the drivers to be removed originate at that level. The forest owners, right holders and forest users must be incentivised to contribute more to addressing drivers.
5. The owners' and non-owners' share will be divided into cash and kind. In kind benefit distribution will be ensured in the shape of schemes which have a direct contribution to reducing drivers of deforestation and forest degradation and forest enhancement.
6. The cost of transaction for individual REDD+ case under negotiation with a potential buyer will not be more than 10% of the total potential revenue so that maximum benefits may be retained for different stakeholders.

In case of different legal forest tenures, following benefit sharing mechanisms are proposed:

1. Reserved forests:
    a. Out of the total Carbon sale proceed, 50% of the share will go to the government after deducting all transactional costs of the site-specific negotiation and third-party

[30]Devising Benefit Sharing Mechanism for REDD+ under Different Land Tenure Systems

monitoring and verification. The Government of KP will retain 10% of the amount and allow the rest of the revenue to be deposited in the Forest Development Fund.

b. Out of the remaining 50%,
    i. Half will be distributed to the forest right holders (cash)
    ii. The second half will be spent in village development activities directly relevant to reducing drivers of deforestation and forest degradation (such as alternative energy development projects and installations). The latter benefits will be enjoyed both by right holders and customary forest users.

2. Protected forests:
    a. Out of the total Carbon sale proceed, 30% of the share will go to the government after deducting all transactional costs of the site-specific negotiation and third-party monitoring and verification. The Government of KP will retain 10% of the amount and allow the rest of the revenue to be deposited in the Forest Development Fund.
    b. Out of the remaining share, 70% will be distributed to the forest right holders and customary forest users:
        i. 40% will be distributed to the forest right holders (cash)
        ii. 30% will be spent in village development activities directly relevant to reducing drivers of deforestation and forest degradation (such as alternative energy development projects and installations). The latter benefits will be enjoyed both by forest right holders and customary forest users.

3. Guzara forests:
    a. Out of the total Carbon sale proceed, 10% of the share will go to the government after deducting all transactional costs of the site-specific negotiation and third-party monitoring and verification. Out of this, the Government of KP will retain 10% of the amount and allow the rest of the revenue to be deposited in the Forest Development Fund.
    b. The remaining 90% is meant for guzara owners and customary forest uers:
        i. 50% will be distributed to the Guzara owners (cash)
        ii. 40% will be spent in village development activities directly relevant to reducing drivers of deforestation and forest degradation (such as alternative energy development projects and installations). The latter benefits will be enjoyed both by Guzara owners and customary forest users.

In all the cases, the Federal Ministry of Climate Change will be entitled for 5% share out of the Government's share on case-to-case basis determined by their engagement in finding a potential market, negotiation on behalf of the province and providing any technical assistance.

Figure 13 provides a schematic explanation of the benefit sharing mechanism in KP.

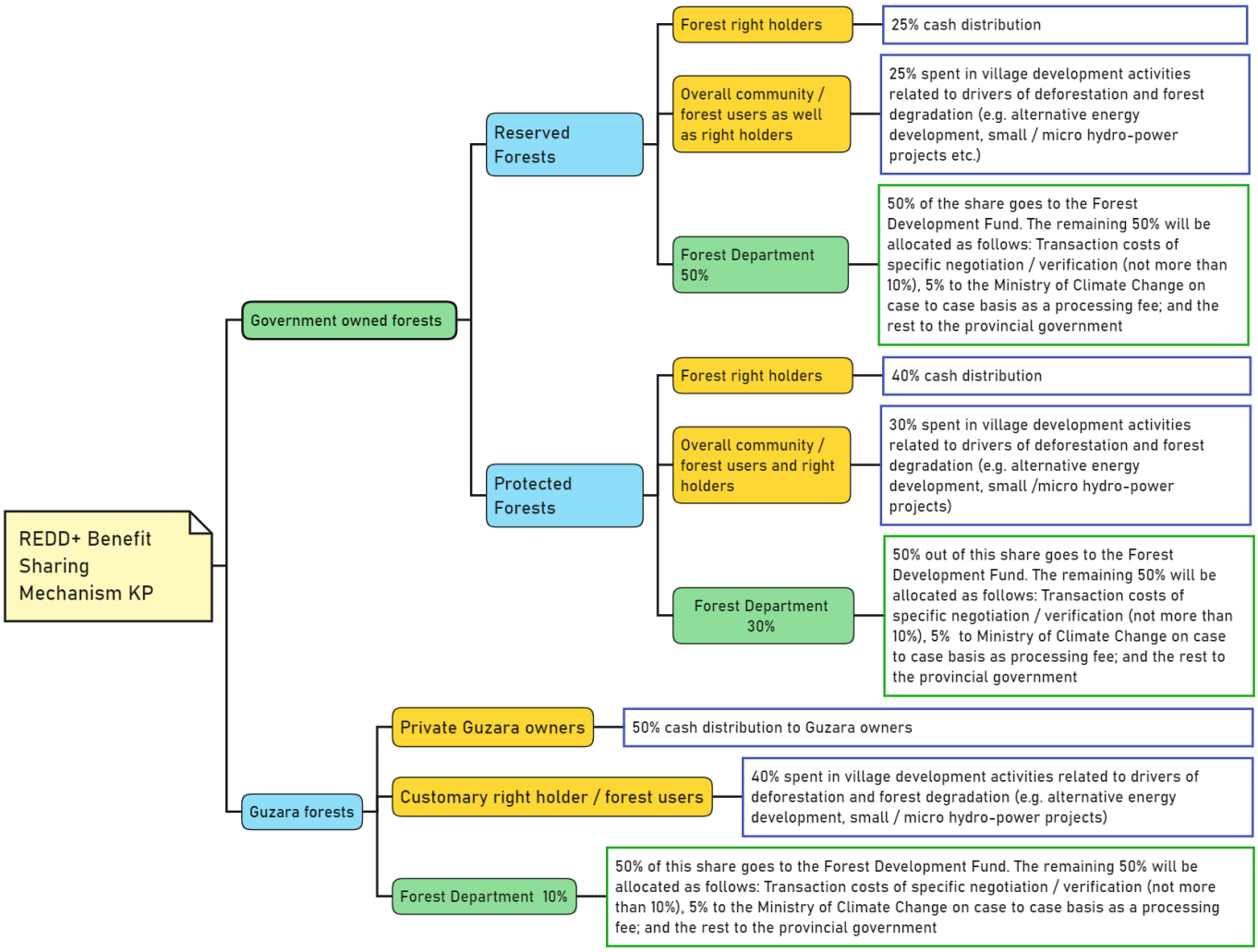

Figure 13: Flow Chart of Financial Benefits Accrued from REDD+ Programme

7 INSTITUTIONAL ARRANGEMENTS FOR IMPLEMENTATION OF REDD+ Action Plan

7.1 Institutional anchorage of REDD+ and responsibilities

The NRS established REDD+ institutions at national and sub-national level. However, KP's sub-national REDD+ Strategy proposes the establishment of a number of other institutional set-ups at provincial level, regional/forest circle and district/local levels. In addition, it also proposes establishment of certain thematic working groups to guide implementation of various technical aspects of the strategy. For synchronizing the PRAP with NRS and KP's sub-national REDD+ strategy, the organogram for REDD+ Implementation in KP, as envisioned in NRS and KP's sub-national REDD+ strategy (**Figure 14**).

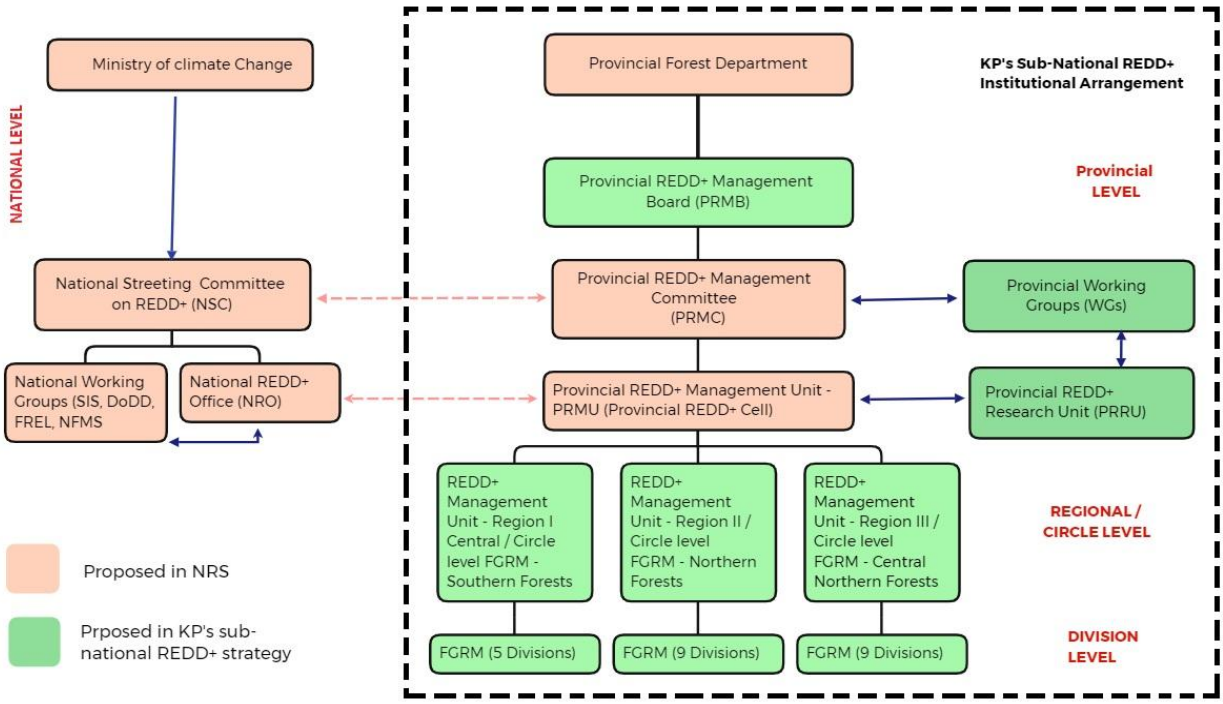

Figure 14: KP's sub-national REDD+ Institutional arrangements

1. **Provincial REDD+ Board:**The Provincial REDD+ Board (PRB) will be chaired by Secretary to the Government of Khyber Pakhtunkhwa, Forest, Environment and Wildlife Department. The REDD+ Board will carry out steering and liaison function involving the approval of REDD+ policies, plans, laws, and programmes.
2. **Provincial REDD+ Management Committee (PRMC):**This committee will be headed by the Chief Conservator of Forests-I and will help REDD+ Board in preparation of REDD+ policies, plans, laws, and institutional mechanisms, carrying out previously determined mandate and supervisory functions.
3. **Provincial REDD+ Thematic Working Groups (WGs):**Four groups are proposed to provide technical guidance as follows:
   a. Technical working group on FREL/FRL.
   b. Technical working group on Provincial Forest Inventory and MRV.

c. Technical working group on REDD+ Social and Environmental Safeguards and Grievance Redress Mechanism.
d. Technical working group on REDD+ Finance

4. **Provincial REDD+ Management Unit (PRMU):**This unit will be responsible for designing and implementation of REDD+ Strategies and Action Plans at the Provincial and Regional level in consonance with the national and international framework. The provincial REDD+ Management Unit will be headed by the provincial REDD+ focal person / Project Director of KP REDD+ Project.
5. **Three Regional REDD+ Management Units (RRMUs):** The Regional REDD+ Management Units (RRMUs) will be established in Peshawar, Abbottabad, and Swat. These regional units will (i) support the provincial REDD+ Management Unit and oversee field and implementation activities of the pilot REDD+ project sites, (ii) undertake awareness raising/capacity building activities for forest staff and local communities, and (iii) collaborate with Forest Divisions.
6. **Forest Circle Level REDD+ Social and Environmental Safeguards (SES) and FGRM:** The circle level SES and FGRM will be coordinated by the respective Conservator of Forests and will ensure adherence to the Social and Environmental Safeguards.
7. **Forest Division Level REDD+ SES and FGRM:** The division level SES and GRM will be chaired by the Divisional Forest Officer of the Forest Division concerned. It will work as feedback providing link and resource pool for the Provincial REDD+ Management Committee. It will also serve as a platform for discussions on and resolution of REDD+ related issues at the district level. It will provide data and information on REDD+ implementation at the district level to the provincial REDD+ Management Committee.

7.2 Feedback grievance and redressal mechanism

A Feedback Grievance Redress Mechanism (FGRM) hasbeen designed[31]at national level as part of national REDD+ readiness process to enable clear and effective handling of complaints or conflicts arising from the implementation of REDD+ activities. The FGRM is designed on the principles of legitimacy, accessibility, predictability equitability, transparency, rights compatibility and enabling continuous learning.The Standard Operating Procedures – SOPsfor FGRM are defined and integrated into Safeguard Information System – SIS (www.pakistansis.com). A systematic step-wise procedure will be adopted for FGRM: i) Receipt and registration of feedback, grievance or complaint; ii) Investigation of the grievance or complaint; iii) Resolution to the utmost satisfaction of parties and in accordance with the rules, and; iv) Monitoring ofimplementation of the agreed resolution. These steps are in accordance with the FCPF guidelines. In total 30 working days are contemplated from the moment the complaint is received until its disposal. A summary of the SOPs of FGRM is given in **(Table 19)**.The aggrieved parties may decide to use the FGRM in preference to other available mechanisms.

The grievance redressal is also part of the existing provincial forest related policies and programmes in which complaint procedures are already defined and platforms to lodge complaints are available. The KP province has also established its provincial FGRM for REDD+ following guidance from the national FGRM. This action plan proposes the DFO office as the main FDRM since it is locally located and is best known to the forest communities. The DFO office needs to publicize a specific desk, phone number and email address through which written complaints may be registered. If not resolved, the matter will be reported to the higher levels. The system is not operational yet, however efforts will be made to operationalize this to first sensitize DFO level staff on how to operate FGRM. Mass awareness campaign on REDD+ will also include publicity of FGRM so that they can access platforms made available to them to provide their feedback and lodge complaints.

[31] https://www.redd-pakistan.org/wp-content/uploads/2015/08/Draft-Final-Report_final.pdf.

Table 19: Recommended FGRM mechanism

Steps	Process	Processing days	Responsibility to Receive and Deal with Complaint	Communication Tools/ Channel	Outcome
1st	Receipt and registration of complaint / grievance	5 business days	Divisional level FGRM	**Channels**: Email, complaint box, specific desk, phone number	The Complaint is received, registered, lodged and sent to complaint officer at DFO level
2nd	Investigation	15 business days	Designated Complaint Officer	**Tool**: Diagnostic questions to gather information about relevant actors/ parties, nature of complaint, the request made by claimant and position of other party, violated, or recognised legal rights, supporting witness, evidence,and prayers from parties **Channel**: Complaint officer to contact directly with the claimant and other relevant parties	The complaint is resolved or taken to a relevant level for resolution. Comprehensively document grounds for complaint and record support from rules.
3rd	Resolution	15 business days	Designated Complaint Officer	**Tool**: Written response about decision process **Channel**: Face to face meeting with parties and mutual discussion at appropriate level i.e., district, village, or province	A signed agreement.
4th	Monitoring	3 – 12 months	Provincial REDD+ focal person	**Tool**: The FGRM monitoring database from which the information will be analysed **Channel**: Coordinated FGRM monitoring system between DFO and provincial REDD+ Cell	The patterns of complaints recognized, the causes of the complaint are identified, and the effectiveness of handling of complaints by PRMUs evaluated.

7.3 Assessment of existing capacities and coordination

This capacity needs assessment was guided by the following:

1. Capacity-Based Needs Assessment (CBNA) report of 2014[32] (updated in 2017-2018[33]) to ensure consistency and comparability in reporting the capacity gaps;
2. A recently conducted training needs assessment conducted by directorate of Institutional and Human Resource Development (IHRD)
3. Discussion on department's human and technical capacities during REDD+ Readiness consultations (R-Package)
4. Consultations on assessment of technical and extension systems at sub national level

The KP province has well established institutional capacities and resources to implement REDD+. However the department is in need for a full-fledged REDD+ unit with dedicated staff to supervise REDD+ implementation. The Forest department has its own financial management mechanism following the government financial management guidance for both public and international funded projects. The human resource is available at departmental level with requisite capacity (both academic and professional) to manage finances of government and donor funded projects. However, there is no designated staff for financial management of REDD+ activities, in particular, at provincial level. The communication strategy is also developed as part of provincial REDD+ strategy to keep the stakeholders informed about the REDD+ processes and progress. This is the reason that this discussion came up again during PRAP consultation and one of the outputs exclusively focuses on establishing REDD+ implementation framework.

The province has also established its provincial Feedback Grievance Redressal Mechanism for REDD+ following guidance from the national FGRM. However, it is not yet operational. This may become operation with the passage of time as PFMPs begin their implementation and cases arrive at the department for redressal, which in itself will contribute to improving the system.

The Forest Department has institutional capacity for regular monitoring, inventory, mapping and reporting including independent SLMS and NFI in compliance to the requirements of IPCC's forest carbon emission reporting. Well established GIS/RS Lab under the Planning and Monitoring Circle is operational with qualified GIS Expert, GIS Analysts and GIS Operators with required numbers. Computer and IT infrastructure is available but requires upgrading to perform SLMS based workflows. Field equipment such as handheld GPS is also available in adequate numbers to conduct inventory and validation ground truthing. Licensed GIS and RS software are available, though not in adequate quantities.

The GIS/RS Lab has good capacity image data acquisitions, processing and classification/analysis, field data collection and validations using sampling method and GPS. The Forest Department, however, has limited number of trained human resource for SLMS reporting following IPCC Guidelines and at planning and operational levels of Forest Inventory. Enhancements of capacities in planning and sampling design, conducting forest inventory, data management, calculations and analysis and Quality Assurance (QA) /Quality Control (QC) is required to operationalize NFI as a regular activity for provincial level Measurement Reporting and Verification (MRV). Further upgrading of computer hardware and necessary software is also required for fully operational NFI in the Forest Department. The KP Forest Department also has technical support from Pakistan Forest Institute (PFI) which possess institutional setup and infrastructure to undertake activities related to SLMS but lacks human resources and access to imagery data. PFI has well established GIS/RS Lab with required system hardware and software and technical capacities.

Another area requiring a fresh overview of capacities is community participation. As a whole, the KP's Forest department has suffered quick staff turnover at senior layer due to lack of fresh induction at regular intervals.

32https://www.unredd.net/documents/un-redd-partner-countries-181/asia-the-pacific-333/a-p-partner-countries/pakistan-1129/implementation-technical-including-tors-1845/mrv-and-monitoring-1852/15245-pakistan-nfms-capacity-building-needs-assessment-report.html?path=un-redd-partner-countries-181/asia-the-pacific-333/a-p-partner-countries/pakistan-1129/implementation-technical-including-tors-1845/mrv-and-monitoring-1852

33https://www.redd-pakistan.org/wp-content/uploads/2019/02/Capacity-Needs-Assessment-Technical-Capacity-Enhancement.pdf

Therefore, it is important that the human resources understand the spirit of forestry sector reforms that took place during the early 2000s, which included legal framework for community participation and joint forest management. The staff simply needs to implement the rules and utilize available material in achieving REDD+ / PRAP objectives.

It may be worthwhile for IHRD directorate to conduct a fresh training / capacity needs assessment in the context of PRAP and include those priorities under the IP 1 of this document

7.4 Alignment with policy

National REDD+ Strategy

The NRS provides the overall guiding framework for implementing REDD+ at national and sub-national level. The KP PRAP is aligned with the NRS REDD+ vision of optimizing forest ecosystem services and livelihood support on a sustainable basis and is consistent with the goals and objectives of NRS as given below:

i. Contribute significantly to reducing GHG emissions through avoided deforestation and forest degradation and to enhancing forest carbon stocks in order to mitigate climate change
ii. Provide sustainable flow of environmental services from forest ecosystems
iii. Make available alternatives for sustainable livelihoods to people dependent on forests
iv. Provide the required institutional, legal, and economic conditions to ensure the sustainable management of forest resources and ecosystems
v. Create the necessary governance structures for the implementation of cross-sectoral policies
vi. Ensure awareness of stakeholders concerning the role of forest in sustainable development, climate change and REDD+

Based on the wider goal of NRS, the objective of this PRAP, as mentioned in section 2, is to contribute to achieve the targets set out in the NRS.

National Forest policy (2016)

The approved National Forest Policy 2016 has two main policy objectives i.e. (i) expansion of forest cover and (ii) curbing of deforestation and promotion of forest conservation. Under these objectives, the National Forest Policy envisages for both the implementation of REDD+ and the full transfer of benefits arising therefrom, such as payments for preserving carbon stock to forest owners and right-holders. The KP PRAP is, therefore, designed to contribute to the objectives of National Forest Policy through implementation of REDD+ at sub-national level in Khyber Pakhtunkhwa.

KP's draft sub-National REDD+ Strategy

The Goal of KP's draft sub-national REDD+ strategy is to mainstream and enhance the role of forests in climate change mitigation and adaptation through effectively reducing greenhouse gases emissions from the forestry sector by controlling and reducing deforestation and forest degradation, promoting conservation and enhancement of forest carbon stocks and sustainable forest management. The KP PRAP is contributing to the objective of putting in place the requisite policy, legal and institutional conditions and enabling pillars that are conducive for supporting REDD+ implementation in Khyber Pakhtunkhwa.

Alignment with Provincial Sectoral Development Planning

This PRAP encompasses multi-sectors and related issues e.g., agriculture, infrastructure, energy, tourism, livestock, economic growth and poverty reduction. The prioritized actions are closely aligned with provincial sectoral development plans and promote co-ordination and cooperation with all relevant stakeholders. Also, as already mentioned the PRAP is not a static document and would require periodic revision taking inputs of the relevant provincial institutions and other stakeholders in the light of the experience gained from implementing the actions.

7.5 Monitoring Needs

Monitoring of actions is a critical aspect of this PRAP that helps to ensure effective implementation of the actions and tracking any undesirable change in time for alerting possible remedies. Regular monitoring must be in place with trained human resources. The PRAP proposes Provincial REDD+ Monitoring Unit (PRMU) in KP and Circle level monitoring units.

Monitoring of PRAPs will take place at three levels:

1. Individual actions at intervention and output level to address drivers / underlying causes – recurring monitoring
2. Monitoring of safeguards remedies to assure there are no social or environmental implications – project / action-based monitoring while assuring that grievances are addressed and agreed solutions are implemented. For this FGRM at divisional and circle level has already been set up that will report to provincial REDD+ management unit for further incorporation into provincial forest monitoring system.
3. Overall impact of actions on forest health and drivers of deforestation and forest degradation – medium and long-term monitoring

Currently, monitoring indicators for REDD+ related activities are being defined as part of sub-national forest monitoring system. However, forests have been monitored as per the standard methods/ protocols of working plans in addition of regular field staff visits and reporting. There is need of standardization and consistency in the procedures and methods for forest (including natural forests) monitoring at provincial and national level. Several forest related monitoring tools already exist, which need to be harmonized with new tools required for monitoring of PRAP. Founded on these, interlinked forest monitoring indicators and tools / mechanisms at federal and provincial levels have been proposed**Table 19**. This PRAP will help KP to formally and firmly, embed the provincial level forest monitoring indicators into existing national forest monitoring framework.

Since land and forest management within KP are the responsibility of multiple government institutions depending on the land cover specifications, a monitoring system that caters for all the aforementioned three levels is necessary to be designed by REDD+ management unit. There is a need to establish a thorough process for collecting, verifying, processing, analyzing and reporting data and create relevant capacities for performing these functions within the province. It is important for transparency and for empowering communities that the Forest department make information public. This will prevent unnecessary pressures to manipulate data or push for self-interpretation. The system will be linked with National Forest Monitoring System.

Table 20: Forest monitoring indicators and tools/ mechanisms at federal and provincial level

REDD+ Activities	Monitoring Indicators		Monitoring Tools/ Mechanism	
	National	Provincial Level	National	Provincial Level
Deforestation	Changes in national forest cover and land area (ha)	Conversion of forest land to agriculture and infrastructure schemes including housing	NFMS (SLMS) and other international studies e.g., FAO's FRA **Actors:** NRSC, GCISC, NRO	Provincial Forest Monitoring and MRV System in which regular staff / community surveillance are integrated **Actors:** PRMC, Provincial REDD+ Management Unit, Agriculture Department, Academia
Forest Degradation	Decrease in forest density (percentage of forest cover), Soil land degradation/ Erosion, Grazing, forest fires	Extraction / quantities of firewood; reports of illegal scattered cutting; unsustainable tourism and infrastructure; over grazing forest fires	NFMS (SLMS and NFI) Social/economic surveys **Actors:** NRSC, GCISC, OIGF, NRO, Provincial forest departments, Academia, Ministry of Food, Agriculture and Livestock	Provincial Forest Monitoring and MRV System in which regular staff / community surveillance are integrated; density-based forest cover assessment. **Actors:** Forest department, soil survey department, livestock department and Academia, communities
Enhancement of Forest Carbon Stocks	Areas (in ha) afforested/ reforested/ regenerated. No of plants planted each year	Afforestation (area in ha), reforestation (no. of plants/ area reforested in ha), regeneration (counting of no. of plants and area regenerated in ha)	SLMS, NFI, Afforestation/ reforestation plans, annual plantation targets/ reports from provinces, official statistics provided by other institution on plantations **Actors:** NRSC, OIGF, NRO, provincial forest departments, Academia, INGOs, NGOs	Provincial Forest Monitoring and MRV System in which regular staff / community surveillance are integrated; post activity reports and visits; counting of trees on regular basis to assess survival percentage. **Actors:** Forest department, communities, Academia, local NGOs
Conservation	Conservation policies/ laws/ regulations, protected area notifications of government	Implementation of laws, regulations etc., fire management	Protected area networks, enacted laws/regulations, guided by national Policy guidance **Actors:** NRSC, OIGF, NRO, provincial forest departments, Academia, INGOs, NGOs	Enforcement of laws/ regulations (enforcement checks); SFM, PES targets; reduced fire incidents **Actors:** Forest department, communities, Academia, local NGOs
Sustainable Management of Forests	No of Management Plans at national level	Management plans (forest types/ area covered)	Review reports of Implementation progress from provinces **Actors:** NRSC, OIGF, NRO, provincial forest departments, Academia, INGOs, NGOs	Review of implementation progress of PFMPs in different forest types / area covered) **Actors:** Forest department, communities, Academia, local NGOs

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	Names	Designations	Department
1	Ali Gohar	Chief Conservator of Forests	KP Forest Department
2	Muhammad Iqbal Swati	Chief Conservator Forests (Rtd.)	KP Forest Department
3	Gohar Ali	Divisional Forest Officer -1 FP&M	KP Forest Department
4	Iftikhar Ahmad	Director NTFP	Forest Department, KP
5	Fazal Illahi	Director CDE & GAD	Forest Department, KP
6	Muhammad Arif	Director DESAD Ex-PD REDD+	KP Forest Department
7	Anwar Ali	Director Research – PFI	Pakistan Forest Institute
8	Zahid Khattak	Assistant Director P&D forests	P&D Department, KP
9	Muhammad Ali	Conservator Wildlife	Forest Department, KP
10	Syed Muqtada Shah	Conservator	Forest Department, KP
11	Asghar Khan	Conservator	Forest Department, KP
12	Engr. Sajid Hussain	Soil Conservation Officer – Planning	Government of KP
13	Zobia Gul	Deputy Director CD&GAD	Forest Department, KP
14	Kaleem Shah	Deputy Director (HRD),	KP Forest Department
15	Muhammad Ibrahim Khan	M&E Officer (10-BTTP)	KP Forest Department
16	Tariq Khadim	Deputy Director, R&D Directorate	KP Forest Dept.
17	Fazal Illahi	Director CDE & GAD	KP Forest Department
18	Mr. Mohammad Riaz	Sarhad Awami Forestry Ittehad	CSO
19	M. Yousaf Khan	Conservator Forest (Malakand West)	KP Forest Dept.
20	Community consultations	Bamboret Chitral, Miandam Swat, Makhnial Haripur	Communities

To be attached once held

Provincial REDD+ ACTION PLAN

Khyber Pakhtunkhwa

2022-2031

A plan of action prepared with technical assistance from National REDD+ Office, Ministry of Climate Change, Government of Pakistan.