



Readiness Package: Readiness Progress and Multistakeholder Self-Assessment Report for Bhutan

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Executive Summary

Bhutan started REDD+ activities in early 2015, financed through the Forest Carbon Partnership Facility (FCPF). The REDD+ program in Bhutan was built on a solid foundation of environmental, forestry, and land-use policies and pre-existing institutional arrangements that contribute substantially to REDD+ Readiness. For the readiness phase, the Royal Government of Bhutan received a Readiness Grant of US\$8.6 million from the FCPF of the World Bank.

This multistakeholder self-assessment report presents Bhutan's progress on four components of REDD+ readiness: (i) readiness consultation and organization, (ii) preparation of a National REDD+ Strategy, (iii) determination of Forest Reference Emission Levels, and (iv) establishment of National Forest Monitoring and Safeguard Information Systems. Apart from taking stock of readiness progress, this report also documents the strengths of the readiness phase and areas for further improvement to support full-scale REDD+ implementation.

This assessment was guided by the Forest Carbon Partnership Facility's self-assessment framework for REDD+ Readiness, comprising four main components, eight subcomponents, 34 criteria, and 58 diagnostic questions. Progress in all the main components and subcomponents was ranked on a four-color "traffic light" scale: green for significant progress, yellow for progressing well but requiring further development, orange for further development required, and red for not yet showing progress. The tool for using traffic light colors was quantitatively scaled based on indicators measuring the proportionate progress. The diagnostic questions used for the assessment were tailored to the country context (national, subnational, and community-level), supported by required progress indicators and a review of available information on different subcomponents and assessment criteria.

The self-assessment was carried out through a participatory and inclusive process involving two regional multistakeholder workshops covering the entire country. In total, 105 participants took part in the self-assessment process. In addition to the rating, areas for further improvement were recorded against each subcomponent based on the feedback from participants during the consultation process.

Overall, of 34 assessment criteria, 24 criteria were ranked GREEN, which indicates "significant progress was made" and six criteria were ranked YELLOW, meaning "progressing well, but further development required." Four criteria were ranked equally between the GREEN and YELLOW rating category during the participatory assessment process.

The overall results of the self-assessment on progress on various readiness components is summarized in table 0.1.

Table 0.1: Summary of Overall Achievement of REDD+ Readiness, by component

COMPONENTS	SUBCOMPONENTS	PARTICIPATORY RANKING	REMARKS
COMPONENT 1: READINESS ORGANIZATION & CONSULTATION	Subcomponent 1a: REDD national management mechanisms.		Significant progress
	Subcomponent 1b. Consultation, participation, and outreach		Significant progress
Component 1 Overall			Significant progress
COMPONENT 2: REDD+ STRATEGY PREPARATION	Subcomponent 2a. Land use evaluation, forest policy and governance		Significant progress
	Subcomponent 2b. REDD+ Strategy Options.		Significant progress
	Subcomponent 2c: Implementation framework		Significant progress
	Subcomponent 2d: Social and environmental impacts		Progressing well, further development required
Component 2 Overall			Significant progress
Component 3: Reference Emissions Level/Reference Levels			Significant progress
COMPONENT 4: MONITORING SYSTEM FOR FORESTS & SAFEGUARDS	Subcomponent 4a: National Forest Monitoring System.		Significant progress
	Subcomponent 4b: Information System for Multiple Benefits, Other Impacts, Governance, and Safeguards		Significant progress
Component 4 overall			Significant progress

Component 1: Readiness Organization and Consultation

The overall national ranking for component 1 is GREEN (of 10 criteria under this component, 9 are rated GREEN and 1, YELLOW). This component shows significant progress with REDD+ institutional arrangements. The Technical Working Groups (TWGs) and Task Force have been set up and operationalized, and their mandates are integrated and aligned with the existing forest management policies and structure of the country.

At the national level, the Ministry of Agriculture and Forests (MoAF), supported by the Watershed Management Division (WMD) as the National REDD+ Secretariat, has been established to provide technical assistance with support from TWGs and the REDD+ task force to facilitate national coordination for REDD+ implementation.

All the stakeholders and REDD+ implementing institutions identified are operating in an accountable and transparent manner under the guidance of the Gross National Happiness Commission Secretariat (GNHCS) and Ministry of Finance (MoF). A REDD+ information

center, in the form of a REDD+ website, has been established <https://www.dofps.gov.bt/documents/>; however, it would require further enhancements. Numerous capacity-building programs distributed across all sectors covering the entire country have been implemented, encompassing a wide range of stakeholders, including policymakers, technocrats, local and regional administrative authorities, local communities, the general public, politicians, academia and other nongovernmental and civil society organizations.

The consultation and outreach programs also involved women and marginalized groups. To strengthen gender mainstreaming, a REDD+ gender action plan has been developed for Bhutan, along with a capacity needs assessment report. However, with the implementation of REDD+ activities, capacity building in participatory approaches and the technical aspects of REDD+ would need further enhancement.

Various pilot activities were carried out under the REDD+ readiness program, most notably the pilot activities on Payment for Environment Services (PES) within the Department of Forests and Park Services (DoFPS) and the Glued Laminated Timber (Glulam) project with the Royal Academy, Pangbisa, Paro.

Component 2: Preparation of a National REDD+ Strategy

The overall national progress ranking for component 2 is GREEN (of 15 criteria under this component, 8 are rated GREEN, 4 are rated YELLOW, and 3 are ranked equally between GREEN and YELLOW). The National REDD+ Strategy (NRS) of Bhutan has been developed based on a number of analytical studies and consultations on various aspects of forestry, including land use, drivers of land-use change, forest laws, policies, and governance for REDD+ program implementation in Bhutan. The assessments were carried out as part of the study on the drivers of deforestation and forest degradation, the development of safeguard frameworks, such as the Feed Grievance Redressal Mechanism (FGRM), the development of the National REDD+ Strategy and Action Plan, and national land-use zoning planning.

The purpose of the assessment of land use, drivers of land-use change, forest law, policy, and governance was to identify the key drivers of deforestation and/or forest degradation, as well as activities concerning conservation, sustainable forest management, and the enhancement of forest carbon stocks. The key drivers identified in the Drivers of Deforestation and Forest Degradation (D&D) report include State Reserved Forest (SRF) land allotment, hydropower projects, roads, agriculture, mines and quarries, and roads for deforestation, while timber harvesting, firewood, forest fires, and livestock were identified as the key drivers of forest degradation.

The NRS of Bhutan has proposed four Strategy Options that are highly relevant and respond to the drivers identified and underlying causes of deforestation and forest degradation. These Strategy Options will be implemented via several crosscutting policies and measures (PAMs). There are 10 PAMs identified in the NRS. Under each PAM there is a set of proposed actions, and different organizations will be responsible for implementations.

Component 3: National Forest Reference Emission Level

The overall national progress ranking for component 3 is GREEN (of three criteria under this component, two are rated GREEN, and one is ranked equally between GREEN and YELLOW). Significant progress on the Forest Reference Emission Level (FREL) has been achieved as the FREL/FRL documents have already been endorsed by the government and were submitted to the United Nations Framework Convention on Climate Change (UNFCCC). Bhutan has developed its national FREL/FRL strategy, which serves as a benchmark for assessing the performance of REDD+ activities being implemented in the country.

The national FREL (concerning emissions from deforestation) and FRL (concerning emissions and removal from “+” activities of the REDD+ program) were developed through a series of consultative meetings and training/workshops. In determining the FREL and FRL, all relevant national circumstances were accounted for, and an adjustment of 0.1 percent of biomass carbon stock was made to FREL, while no adjustment was needed for the FRL. Future needs are identified and are reported as a part of the improvement plan.

Component 4: National Forest Monitoring System and Safeguard Information System

The overall national progress ranking for component 4 is GREEN (of six criteria under this component, five are rated GREEN, and one is rated YELLOW). Bhutan has made solid progress with developing a National Forest Monitoring System (NFMS). However, further development is required to make its measurement, reporting and verification (MRV), and monitoring functions fully operational for assessing additional activities and pools, including forest degradation and removals, as well as to provide information on non-carbon benefits (NCB), the impacts of multiple benefits, and governance safeguards.

In line with 4/CP.15, 1/CP.16 and 11/CP.19, the Department of Forest and Park Services (DoFPS) of the Ministry of Agriculture and Forests (MoAF) has developed a robust and transparent National Forest Monitoring System (NFMS) with the following objectives: (i) monitor the health and state of Bhutan’s forests for enabling long-term conservation and sustainable forest management and uphold the constitutional requirement of maintaining 60 percent forest cover in perpetuity; and (ii) generate accurate and holistic data on forest area and carbon stock changes in a transparent and consistent manner using globally accepted methodologies for national and international reporting.

Under each objective, the NFMS is further divided into two categories (i) monitoring and (ii) measurement, reporting and verification (MRV). The NFMS is based on a combination of ground measurement through the National Forest Inventory (NFI) and remote sensing to generate a report on the state of national forests. The NFMS of Bhutan comprises four components: (i) a Satellite Land Monitoring System (SLMS), (ii) a Multipurpose National Forest Inventory (NFI), (iii) a National Green House Gas (GHG) Inventory, and (iv) forest monitoring with an associated web-portal.

Based on the overall assessment, this Readiness Assessment Package (R-Package) concludes that the Government of Bhutan has made significant progress in fulfilling the key readiness requirements. Overall, Bhutan receives a GREEN rating for the four major components. Gauging from the significant progress made in many areas, as measured by the 34 criteria, it can be concluded that Bhutan is now ready to enter the REDD+ implementation

phase with actions focused on various additional areas for improvement to be addressed during the ongoing process, considering that readiness is an iterative process.

Acronyms

ADAO	Assistant Dzongkhag Agriculture Officer
ADLO	Assistant Dzongkhag Livestock Officer
AFD	Administration and Finance Division
AGB	Above Ground Biomass
ALO	Assistant Livestock Officer
ALOS	Advanced Land Observation Satellite
AWBI	Association of Bhutanese Wood-Based Industries
BBPL	Bhutan Board Product Limited
BCs	Biological corridors
BDS	Benefit Distribution Systems
BLSS	Bhutan Living Standards Survey
BSM	Benefit Sharing Mechanism
BWS	Bomdeling Wildlife Sanctuary
CAB	Construction Association of Bhutan
CBA	cost-benefit analysis
CBD	Convention on Biological Diversity
CF	community forest
CFMG	Community Forest Management Group
CFO	Chief Forestry Officer
CITES Flora	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COPs	Conference of Parties
CSI	Cottage and Small Industry
CSO	Civil Society Organization
D&D	Drivers of Deforestation and Forest Degradation
DAO	Dzongkhag Agriculture Officer
DGPC	Druk Green Power Corporation
DLO	Dzongkhag Livestock Officer
DoA	Department of Agriculture
DoFPS	Department of Forests and Park Services
Dy. CFO	Deputy Chief Forestry Officer

EIA	Environmental Impact Assessment
ESMF	Environmental and Social Management Framework
FAO	Food and Agriculture Organization
FCPF	Forest Carbon Partnership Facility
FGRM	Feedback Grievance Redressal Mechanism
FIRMS	Forest Information Reporting and Monitoring System
FMCB	Forest Management Code of Bhutan
FMU	Forest Management Units
FNCA	Forest and Nature Conservation
FNCRR	Forest and Nature Conservation Rules and Regulations of Bhutan
FO	Forestry Officer
FREL	Forest Reference Emission Level
FRIMS	Forest Resources Information Management and Reporting System
FRL	Forest Reference Level
FRMD	Forest Resources Management Division
FYP	Five-Year Plan
GCF	Green Climate Fund
GDP	Gross Domestic Product
GFC	Global Forest Change
GFOI	Global Forest Observations Initiative
GHG	greenhouse gas
GIS	Geographic information system
GIS/RS	Global Information System/Remote Sensing
GIZ	German Agency for International Cooperation
GMO	genetically modified organism
GNH	Gross National Happiness
GNHC	Gross National Happiness Commission
GNHCS	Gross National Happiness Commission Secretariat
HFLD	high forest/low deforestation
HWC	human-wildlife conflict
ICIMOD	International Centre for Integrated Mountain Development
IIP	REDD+ Investment & Implementation Proposal

IPCC	Intergovernmental Panel on Climate Change
ITMS	Institute of Traditional Medicine Services
JDNP	Jigme Dorji National Park
JKSNR	Jigme Khesar Strict Nature Reserve
JSWNP	Jigme Singye Wangchuck National Park
JWS	Jomotsangkha Wildlife Sanctuary
LDD	Local Development Planning Manual
LFMP	Local Forest Management Plan
LPO	Livestock Production Officer
LULC	land use and land cover
LULUCF	Land Use, Land-Use Change and Forestry
MDG	Millennium Development Goals
MoAF	Ministry of Agriculture and Forests
MoEA	Ministry of Economic Affairs
MoF	Ministry of Finance
MoWHS	Ministry of Works and Human Settlement
MRV	measurement, reporting and verification
MTR	mid-term review
NAPA	National Adaptation Plan of Action
NBC	National Biodiversity Centre
NCD	Nature Conservation Division
NDC	Nationally Determined Contribution
NEC	National Environment Commission
NFI	National Forest Inventory
NFMS	National Forest Monitoring System
NGO	non-governmental organization
NKRA	National Key Result Area
NLCS	National Land Commission Secretariat
NPV	Net Present Value
NRDCI	Natural Resources Development Corporation Limited
NRS	National REDD+ Strategy
NSB	National Statistics Bureau

NWFPs	non-wood forest products
OAG	Office of the Attorney General
PAMs	Policies and Measures
PA	protected area
PCU	Project Coordination Unit
PES	Payment for Environmental Services
PFO	Principal Forestry Officer
PHCB	Population and Housing Census of Bhutan
PLRs	Policies, Legislations and Regulations
PMU	Project Management Unit
PNP	Phrumsengla National Park
POM	Project Operation Manual
PPD	Policy and Planning Division
PSO	Project Support Officer
PWS	Phibsoo Wildlife Sanctuary
QAQC	Quality Assurance & Quality Control
RAMCO	Regional Agriculture Marketing Corporation
RBP	results-based payments
REDD+	Reducing Emissions from Deforestation and forest Degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks
RGoB	Royal Government of Bhutan
RMNP	Royal Manas National Park
RNR	Renewable Natural Resources
RO	Range Officer
R-Package	Readiness Assessment Package
R-PP	Readiness Preparation Proposal
RSPN	Royal Society for Protection of Nature
SAARC	South Asian Association for Regional Cooperation
SDG	Sustainable Development Goals
SDSS	Spatial Decision Support System
SEPAL	System for Earth Observation, Data Access, Processing, Analysis for Land Monitoring

SESA	Strategic Environmental and Social Assessment
SFED	Social Forestry and Extension Division
SFM	sustainable forest management
SIS	Safeguard Information System
SLMS	Satellite Land Monitoring System
SMART	Spatial Monitoring and Reporting Tool
Sr. FO	Senior Forestry Officer
Sr. FR	Senior Forestry Ranger
SRF	State Reserved Forest
SRFL	State Reserved Forest Land
STEP	Systematic Tracking of Exchanges in Procurement
SWS	Sakteng Wildlife Sanctuary
TCB	Tourism Council of Bhutan
TFD	Territorial Forest Division
TOT	training of trainers
TWG	Technical Working Group
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
UNREDD	United Nations REDD Programme
UWICER	Ugyen Wangchuck Institute for Conservation and Environmental Research
WCNP	Wangchuck Centennial National Park
WMD	Watershed Management Division

1. INTRODUCTION

Since early 2010, Bhutan has been implementing activities geared toward preparing for the mechanism for reducing emissions from deforestation and forest degradation and the role of sustainable forest management, conservation of forest carbon stocks and enhancement of forest carbon stocks (REDD+). REDD+ Readiness gained momentum with the approval of funding to support the Readiness Fund of the Forest Carbon Partnership Facility (FCPF) of the World Bank in 2013, with implementation starting in 2015. Since the start of implementation in 2015, Bhutan has received a US\$8.6 million grant and has made considerable progress, which is reflected in the Readiness Assessment Package (R-Package).

The R-Package document presents the progress made by Bhutan during the REDD+ readiness phase from 2014 to 2022. Various consultation workshops and meetings were held with stakeholders for their views and feedback on the progress made. The Readiness Assessment of Bhutan's progress captures lessons learned, assesses remaining gaps, and identifies activities for the way forward to transition to implementation of its National REDD+ Strategy and Action Plan.

The assessment provides an opportunity for Bhutan to demonstrate its commitment to REDD+. The assessment also helped Bhutan identify the remaining gaps and further needs and as well gather feedback and guidance from multiple stakeholders and the FCPF Participants Committee (PC).

2. BACKGROUND

Bhutan is a small, landlocked country located in the eastern part of the Himalayan mountains, with a geographical area of 38,394 km². The country is characterized by mountainous landscapes with steep precipitous slopes, which descend rapidly into narrow river valleys. The elevation ranges from approximately 100 meters in the southern foothills to over 7,500 meters along the main ridge of the Himalayas (Norbu et al. 2008).

Bhutan has a wide range of geographic and climatic conditions, making it a rich repository of biological diversity and ecosystems. Conditions vary in different parts of the country due to changes in topography and altitude. There are three main climatic zones: subtropical in the southern foothills below 1,000 meters and river valleys; temperate in the central parts below 4,500 meters; and alpine in the northern parts above 4,500 meters in altitude (Yangchen et al. 2015). There is a small area under glaciers and perpetual snow on the higher mountain ranges. Bhutan's average annual rainfall varies from 1,020 millimeters to 1,520 millimeters, with the majority of precipitation being generated from the annual monsoons (NEC 2006). Temperatures typically range from 15 °C to 30 °C in the subtropical zone and between -4 °C to 26 °C in the central temperate regions (NEC 2016).

The most dominant land cover is forest, making up 70.46 percent of the total land area (MoAF 2017a). Approximately 51 percent of Bhutan falls under designated Protected Areas (Pas), comprising five national parks, four wildlife sanctuaries, a strict nature reserve, and several biological corridors (BCs) connecting the PAs (DoFPS 2016b; NEC 2016).

Bhutan has a population of 779,666, which is becoming increasingly urbanized, with 37.8 percent estimated to be urban and 62.2 percent rural (NSB 2017a; NSB 2018). Since 2005, Bhutan's total population has increased by 16 percent, at a rate of 1.3 percent per annum. The population density has increased from 17 persons/km² to 19 persons/km², but the country still has one of the lowest population densities in the world.

At the core of the country's economy is the people-centered development philosophy of Gross National Happiness (GNH), which transcends every aspect of the economy and has been the driving force behind socioeconomic development over the past 55 years. The GNH Screening Tool evaluates, monitors, sets goals, and raises the national consciousness about what conditions are conducive to the happiness and well-being of the people and the country as a whole. Bhutan follows a five-year socioeconomic development planning cycle that operationalizes GNH. The planning cycle started with the first Five-Year Plan (FYP) in 1961. Under the guidance of the Gross National Happiness Commission Secretariat (GNHCS), the FYPs articulate the socioeconomic development priorities and programs to be implemented. The twelfth FYP covers the period from 2018 through to 2023 and monitors nine domains: education; health; living standards; ecological diversity and resilience; time use; culture; psychological well-being; community vitality; and good governance. The 12th FYP identifies national key results areas (NKRAs), which have been formulated based on national aspirations, priorities, and international and regional commitments such as the Sustainable Development Goals (SDG).

2.1 ENVIRONMENTAL CONTEXT

Climate Change Impacts: Many climate-induced impacts have occurred in Bhutan, including glacial lake outbursts, forest fires, landslides, and flooding. Pest problems have also increased several times over compared to the past. New pests have appeared, like army worms, and the extent of damage has increased, affecting many crops. Climate change continues to pose a serious challenge to Bhutan's economic development and peoples'

livelihoods. Farming communities will be directly impacted by temperature changes and unpredictable monsoon patterns caused by climate change. The glacial systems will experience faster rates of melting, affecting the base flow of rivers and potentially impacting hydropower and other infrastructure developments. Climate change is also likely to have a bearing on Bhutan's extensive forest cover, rich biodiversity, and clean water resources, which are important attractions for visiting tourists. The sensitivity of Bhutan's economic and social spheres to climate change signals the importance of climate change response measures that focus on a wide range of landscape-level considerations. These measures will directly or indirectly lead to the enduring preservation of forests.

Low Carbon Development: During the 2009 15th Session of Conference of Parties of the United Nations Framework Convention on Climate Change (UNFCCC) in Copenhagen, the Royal Government of Bhutan (RGoB) committed to remaining carbon neutral, ensuring that the greenhouse gas emissions (GHG) remain below the sequestration capacity of its forests. Bhutan's National Strategy and Action Plan for Low Carbon Development (NEC 2012) is a key step toward supporting the carbon neutral declaration. The strategy presents various scenarios by analyzing development paths from 2005 until 2040. In order to remain carbon neutral, transformative long-term legislative, policy, mitigation, and adaptation measures are required to reduce GHG emissions.

Climate Change Mitigation: The foundation of mitigation efforts rests on conserving national forests as carbon sinks. However, it is also necessary to manage the growing emissions arising from economic development in other sectors. The RGoB has already initiated a range of mitigation and adaptation policies, regulatory measures, and actions. Some of the key actions include the development of the National Environment Protection Act (2007); National Strategy and Action Plan for Low Carbon Development (NEC 2012); Bhutan Transport 2040 Integrated Strategic Vision (ADB 2013); National Forest Policy (MoAF 2011); Nationally Determined Contributions (RGoB 2015); Economic Development Policy (RGoB 2016a); and the National Energy Efficiency & Conservation Policy (MoEA 2017). The RGoB is also in the process of developing a Climate Change Policy (NEC 2018 [draft]). The RGoB and the World Wildlife Fund launched Bhutan for Life, an initiative that aims to support the management of Bhutan's protected areas network. The program includes activities that increase forestry and climate change mitigation, as well as support ecosystem adaptation.

Climate Change Adaptation: In recognition of the vulnerability of forests, water systems, glacial flows, and agricultural production, the RGoB prepared a National Adaptation Plan of Action (NAPA) (NEC 2006). This plan helps prioritize medium- to long-term climate risks and provides appropriate response measures. The NAPA complements existing regulatory and policy instruments that are geared toward protecting the environment. In its submission to the UNFCCC, Bhutan outlined a series of measures that form part of the Nationally Determined Contributions (NDC) (NEC, 2nd Nationally Determined Contributions, 2021).

2.2 FORESTRY

The RGoB recognizes forests' value and honors them in its Constitution. Forest management in Bhutan has evolved over the years. The management approach has shifted from having a primary focus on protection toward balancing conservation with sustainable management and forest utilization in the context of climate change and livelihoods. As such, the National Forest Policy 2011 has an overarching goal of sustainable management of forest resources and biodiversity conservation for meeting the long-term needs of people. The Forest and Nature Conservation Act 1995 (FNCA) provides the legal framework for

appropriate forest use and enabling community and social forestry. The Forest and Nature Conservation Rules and Regulations of Bhutan 2017 (FNCRR) cover general aspects of managing State Reserved Forest Land (SRFL), as well as management requirements for the following:

- *Protected Areas* cover 51 percent of the country's total area and are focused on the conservation of biological diversity and integrated development for people residing within the parks.
- *Community Forests* are managed by the local communities to meet their requirements for forest produce. As of January 2022, there were more than 800 operational community forests throughout the country (MoAF 2017b).
- *Forest Management Units* cover 5 percent of the country and are areas prescribed for commercial logging and non-wood forest products.
- *Watershed Management Plans* are developed for degraded and critical watersheds.
- *Heritage Forests* are sacred areas protected for their cultural value and traditional rights.
- *Local Forest Management Areas* are areas outside of existing formal management regimes and are managed by the forest department for the local communities.

2.3 REDD+ IN BHUTAN

The RGoB is a signatory to the UNFCCC. It is a REDD+ partner country, as Bhutan formally initiated the REDD+ program in 2010. The objective of REDD+ is to reduce emissions from deforestation and forest degradation and increase CO₂ sequestration through the sustainable management of forests, conservation of forest carbon stocks, and enhancement of forest carbon stocks. REDD+ participant countries are eligible for results-based payments (RBP) for verifiable emission reductions and/or enhanced carbon stocks.

The development of Bhutan's REDD+ framework is divided into three phases, as displayed in figure 2.1. Phase one is the readiness phase, during which the relevant institutional systems are established, and the national strategy is prepared. This stage transitions into phase two, which focuses on implementation activities based on the strategy. The third phase involves the implementation of fully measured, reported, and verified actions, for which results-based payments (RBP) could be received. The preparation of this national strategy document signals Bhutan's transition toward phase three.

Figure 2.1: Phases of REDD+ Framework Development

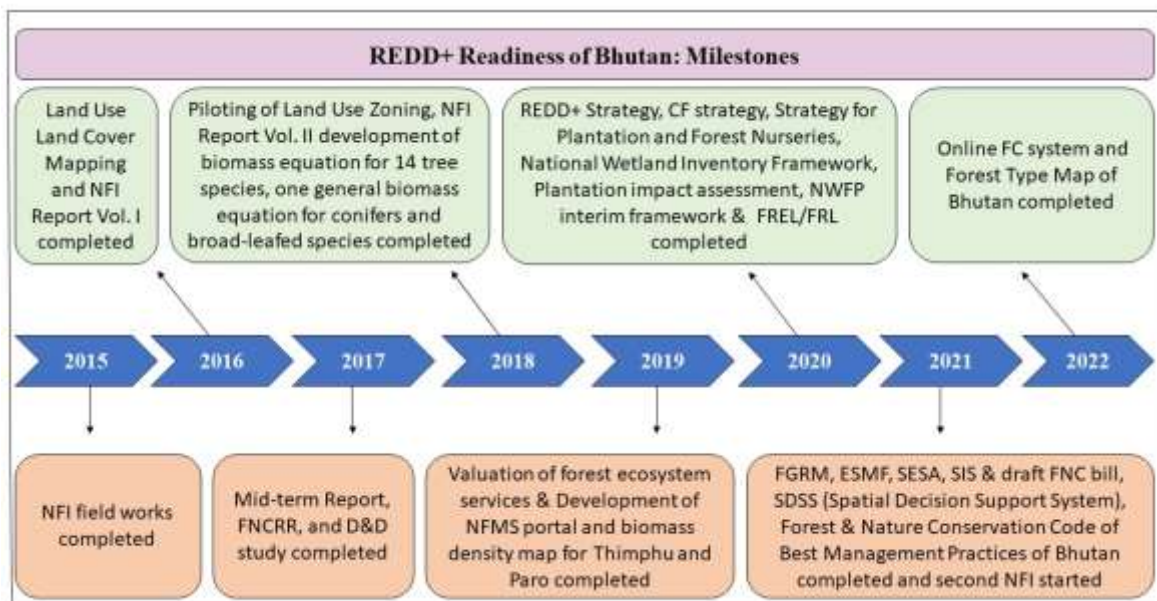


Bhutan sought support by submitting a Readiness Preparation Proposal (R-PP) to the Forest Carbon Partnership Facility and received an initial grant of US\$3.8 million in 2013, followed by an additional grant of US\$4.8 million in 2017. Bhutan has made tremendous gains in forest conservation, as reflected in the milestones attained with the support of the REDD+ Readiness grant (figure 2.2). The following achievements are important components of moving the forest agenda forward in general and for financing for REDD+ implementation in particular:

- Establishment of institutional and implementation arrangements
- Analysis of the drivers of deforestation and forest degradation

- Preparation of the National REDD+ Strategy and Action Plan
- Institutionalization of the National Forest Monitoring System, which will help regularly monitor and report forest cover changes and account for GHG emissions and removals from forestry
- Development of an FREL/FRL, which provides the tool needed to justify Bhutan's position on carbon neutrality and implementing measures to protect and enhance forest cover
- Preparation of a fund mobilization strategy, a safeguards framework, and drafting of a benefit-sharing framework

Figure 2.2: Milestones under the REDD+ Readiness Process



The RGoB recognizes that addressing climate change and achieving environmental, economic, and social aspects of sustainability require a multifaceted approach from all sections of society. The importance of preserving forests through sustainable management is critical throughout this process. REDD+ provides crosscutting and complementary measures, which will provide opportunities to support and strengthen Bhutan's existing national and international commitments. Bhutan has demonstrated its commitment to being part of the global effort to combat climate change with its signatory position to the UNFCCC and ratification of the 2015 Paris Agreement. The holistic measures identified through REDD+ will help reduce deforestation and forest degradation, maintain forest cover, and ensure that Bhutan remains carbon neutral, while also considering national economic development interests. REDD+ will help strengthen Bhutan's resilience to climate change, as forest conservation is essential for both mitigation and adaptation.

2.4 REDD+ READINESS FUNDING AND FINANCIAL STATUS

Bhutan received funding from different sources to support the implementation of REDD+ Readiness activities under the four components. The main sources of funding included the

FCPF, Royal Government of Bhutan (RGoB), the REDD+ Himalayas project supported by the International Centre for Integrated Mountain Development (ICIMOD), the German Agency for International Cooperation (GIZ), the United Nations REDD programme (UNREDD) Technical Support project, and the Green Climate Fund (GCF) REDD+ Readiness and Watershed Management in Bhutan. Table 2.1 presents the summary of financial resources for Bhutan's REDD+ readiness program, while table 2.2 presents the details of FCPF REDD+ Readiness grant expenditures for Bhutan.

Table 2.1: Summary of Funding for Bhutan's REDD+ Readiness Preparedness

Source of Funding	Amount in US\$ million	Years
FCPF World Bank	8.6	2015–2022
UNREDD	0.44	2013–2015
ICIMOD GIZ	0.525	2015–2018
GCF	0.595	2021–2023
RGoB	0.372	2014–2022

Table 2.2: Details of FCPF World Bank REDD+ Readiness Grant

Project Component	Budget (USD)
<i>Component 1: Readiness Organization and Consultation</i>	
1.1. National Readiness Management Arrangements	600,000
1.2. Information Sharing and Early Dialogue with Key Stakeholder Groups	664,000
1.3. Capacity building and training for REDD+ implementation	655,008
<i>Subtotal</i>	<i>1,919,008</i>
<i>Component 2: Preparation of REDD+ Strategy</i>	
2.1. Assessment of Land Use, Land Use Change Drivers, Forest Law, Policy and Governance	880,000
2.2. REDD-plus Strategy Options	815,000
2.3. REDD-plus Implementation Framework	1,567,269
2.4. Social and Environmental Impacts during Readiness Preparation and REDD-plus Implementation	395,000
<i>Subtotal</i>	<i>3,657,269</i>
<i>Component 3: National Forest Reference Emission Level and/or a Forest Reference Level</i>	
3.1. Develop a national forest Reference Emission Level and/or a Forest Reference Level	567,992
<i>Subtotal</i>	<i>567,992</i>

<i>Component 4: Design Systems for National Forest Monitoring and Information on Safeguards</i>	
4.1. National Forest Monitoring System	2,361,731
4.2. Designing an information system for multiple benefits, other impacts, governance and safeguards	94,000
<i>Subtotal</i>	2,455,731
<i>Grand Total</i>	8,600,000

2.5 SUMMARY OF OVERALL REDD+ PROGRESS IN BHUTAN

A summary of the overall progress in REDD+ readiness at the R-Package stage, compared to progress at the Mid-Term Review (MTR), is presented in table 2.3.

Table 2.3: Summary of Progress from Mid-Term Review to R-Package and Self-Assessment

Subcomponents	Assessment Criteria	Mid-Term Progress	Participatory Ranking
Subcomponent 1a: REDD national management mechanisms.	1. Accountability and transparency		
	2. Operating mandate and budget		
	3. Multi-sector coordination mechanisms and cross-sector collaboration		
	4. Technical supervision capacity		
	5. Funds capacity management		
	6. Feedback and grievance redress mechanism		
<i>Overall subcomponent 1a:</i>			
Subcomponent 1b. Consultation, participation, and outreach.	7. Participation and engagement of key stakeholders		
	8. Consultation process		
	9. Information sharing and accessibility to information		
	10. Implementation and public disclosure of consultation outcomes		
<i>Overall component 1b:</i>			

Subcomponent 2a. Land use evaluation, forest policy and governance.	11. Assessment and Analysis	Green	Green	Yellow
	12. Prioritization of direct and indirect drivers/barriers to forest carbon stock enhancement.	Green	Green	Green
	13. Links between drivers/barriers and REDD+ activities	Green	Green	Green
	14. Action plans to address natural resource rights, land tenure and governance	Yellow	Yellow	Yellow
	15. Implications or impacts on forest laws and policies	Yellow	Green	Yellow
Overall subcomponent 2a:		White	Green	Green
Subcomponent 2b. REDD+ Strategy Options.	16. Selection and prioritization of REDD+ strategic options	Orange	Green	Green
	17. Feasibility assessment	Red	Green	Green
	18. Impact or implication of strategic options on existing sectoral policies	Red	Yellow	Yellow
Overall subcomponent 2b:		White	Green	Green
Subcomponent 2c: Implementation framework.	19. Adoption and implementation of laws/legislation and regulations	Orange	Green	Green
	20. Guidelines for implementation	Yellow	Green	Green
	21. Benefit-sharing mechanisms	Orange	Yellow	Yellow
	22. National REDD+ registry and monitoring system for REDD+ activities	Red	Green	Yellow
Overall subcomponent 2c:		White	Green	Green
Subcomponent 2d: Social and environmental impacts	23. Analysis of social and environmental safeguards issues	Yellow	Green	Green
	24. REDD+ Strategy Design with Respect to Impacts	Red	Yellow	Yellow
	25. Environmental and social management framework	Orange	Green	Green
Overall subcomponent 2d:		White	Yellow	Yellow

Component 3: Reference Emissions Level/Referen ce Levels	26. Demonstration of Methodology			
	27. Use of historical data and adjusted for national circumstances or context			
	28. Technical feasibility of the methodological approach, and consistency with UNFCCC/IPCC guidance or recommendations and guidelines			
Overall component 3:				
Subcomponen t 4a: National Forest Monitoring System.	29. Documentation of monitoring approach or methodology			
	30. Demonstration of early system implementation			
	31. Institutional arrangements and capacities			
Overall subcomponent 4a:				
Subcomponen t 4b: Information System for Multiple Benefits, Other Impacts, Governance, and Safeguards	32. Identification of non-carbon aspects and relevant social and environmental issues			
	33. Monitoring, reporting and information sharing			
	34. Institutional arrangements and capacities			
Overall subcomponent 4b:				

3. Component 1: READINESS ORGANIZATION AND CONSULTATION

3.1 SUBCOMPONENT 1A: NATIONAL REDD+ MANAGEMENT ARRANGEMENTS

As part of implementing REDD+ Readiness, National REDD+ management arrangements (subcomponent 1a) outlined the following implementation activities in the R-PP: (a) establishment and operationalization of a REDD+ Task Force and Technical Working Groups (TWGs), including a capacity needs assessment and capacity building of the task force and working groups; (b) establishment of a REDD+ information center (hardware for database management and operating costs, recruitment of an information specialist); (c)

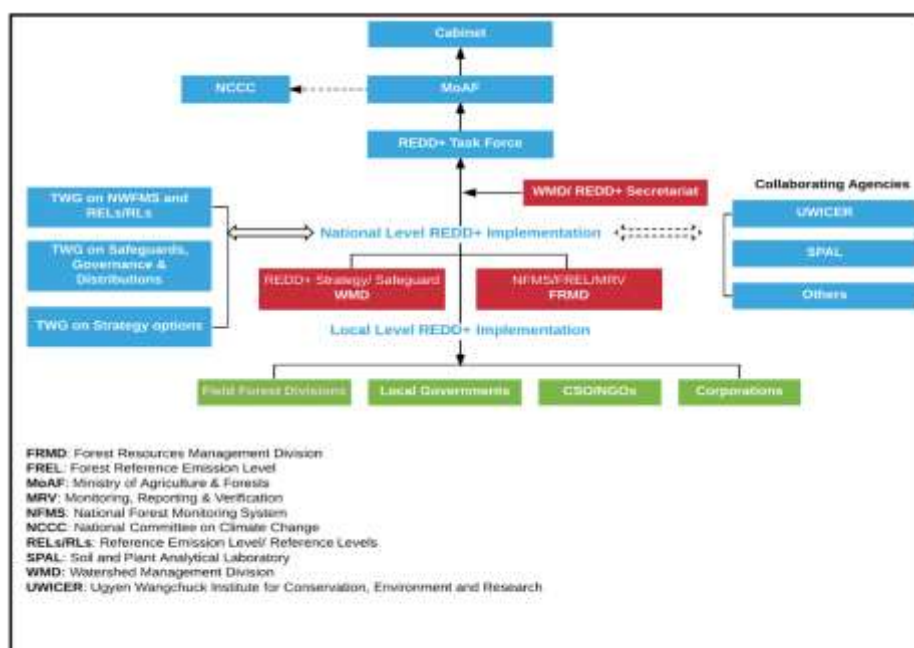
establishment of a REDD+ secretariat (national and regional office space including amenities, furniture, and computers and capacity building of the local staff); and (d) support for the REDD+ Readiness process (technical support, capacity building).

The key expected outputs from implementation of these activities included the following: the REDD+ Secretariat strengthened and functioning; the REDD+ Task Force and TWG operational; capacity building of TWG members; field offices serving as REDD+ Regional Offices; capacity building of local staff and stakeholders; REDD+ information center established and functioning; training needs assessed and report ready; and reports and information from seminars and study tours reflected in the strategy.

Progress and Achievements of Subcomponent 1a: National REDD+ Management Arrangements

Through implementation of the activities above and the delivery of expected outputs, there has been progress on all indicators under subcomponent 1a (National REDD+ management arrangements). Figure 3.1 presents the REDD+ institutional and management arrangements.

Figure 3.1: Institutional and Management Arrangements for REDD+ Implementation



Key achievements under subcomponent 1a (National REDD+ Institutional and Management Arrangements):

- All institutions required for implementing REDD+ activities have been established. Regular meetings take place between the key sectors represented in the Task Force and Technical Working Groups and other relevant stakeholders, civil society organizations (CSOs) or non-governmental organizations (NGOs).
- Operational mandates for all national institutions are in place and all required national institutions have been established to coordinate with other agencies associated with implementing REDD+.
- Technical supervision capacity of the national institutions, such as the WMD and Forest Resources Management Division (FRMD), has been enhanced through

capacity-building exercises, training, and responsibility for various REDD+ activities.

- The fund management system is formalized. The Ministry of Finance is responsible for managing funds at the central level, and sufficient capacity exists in the Ministry. The Project Management Unit (PMU) has been mandated to manage funds at the project level under the guidance of the Ministry of Finance.
- The mechanism for FGRM was developed and has been established.

Bhutan's REDD+ management arrangements, therefore, have the capacity to (1) manage implementation of REDD+ funding, including the FCPF grant; (2) co-ordinate REDD+ activities; (3) integrate REDD+ into broader national or sectoral domains; (4) manage complaints and potential grievances by stakeholders; and (5) organize information sharing and stakeholder consultation and participation. The details of progress on specific criteria are presented below.

Assessment Criterion 1: Accountability and transparency

Bhutan's national development planning framework is a highly integrated and transparent process based on the people-centered development philosophy of Gross National Happiness (GNH), which has been the driving force behind socioeconomic development over the past 55 years. The GNH Screening Tool evaluates, monitors, sets goals, and raises the national consciousness about what conditions are conducive to the happiness and well-being of the people and the country as a whole. Bhutan follows a five-year socioeconomic development planning cycle that operationalizes GNH. Under the guidance of the Gross National Happiness Commission Secretariat (GNHCS), the Five-Year Plans (FYP) articulate the socioeconomic development priorities and programs to be implemented. Currently, Bhutan is implementing its 12th FYP that covers the period from 2018 to 2023 and has identified 17 national key result areas (NKRAs) based on the nine domains adopted for the GNH framework: education; health; living standards; ecological diversity and resilience; time use; culture; psychological well-being; community vitality; and good governance. Of the 17 NKRAs, three NKRAs are directly relevant to the DoFPS: (i) NKRA 5: Healthy Ecosystem Services Maintained; (ii) NKRA 6: Carbon Neutral, Climate Disaster Resilient Development Enhanced and (iii) NKRA 8: Water, Food and Nutrition Security Ensured. While REDD+ activities cut across the three NKRAs above, they are directly linked to NKRA 6, and it is explicitly mentioned as a separate outcome in Program 4 (Climate Smart and Disaster Resilient Development Programme) of the Ministry to achieve NKRA 6.

The procurement officer in the Administration and Finance Division (AFD) of the MoAF was the procurement specialist for the project. The budget for implementing the activities is routed through the Ministry of Finance, per the RGoB rules, and managed by an accountant appointed specifically to deal with accounts for this project. The accountant is based in the AFD. The budget is distributed to the implementing offices annually, per the approved work plan. Implementation of the project activities was audited annually by the Royal Audit Authority and Procurement Specialist of the World Bank. In addition, monitoring is also carried out through annual reviews of performance scores by all the agencies and a mid-term and terminal evaluation of each plan. The annual review of the performance of each sector will provide a score for a particular sector based on its annual targets, and a sector will be rated outstanding, good, or in need of improvement at the end of each year.

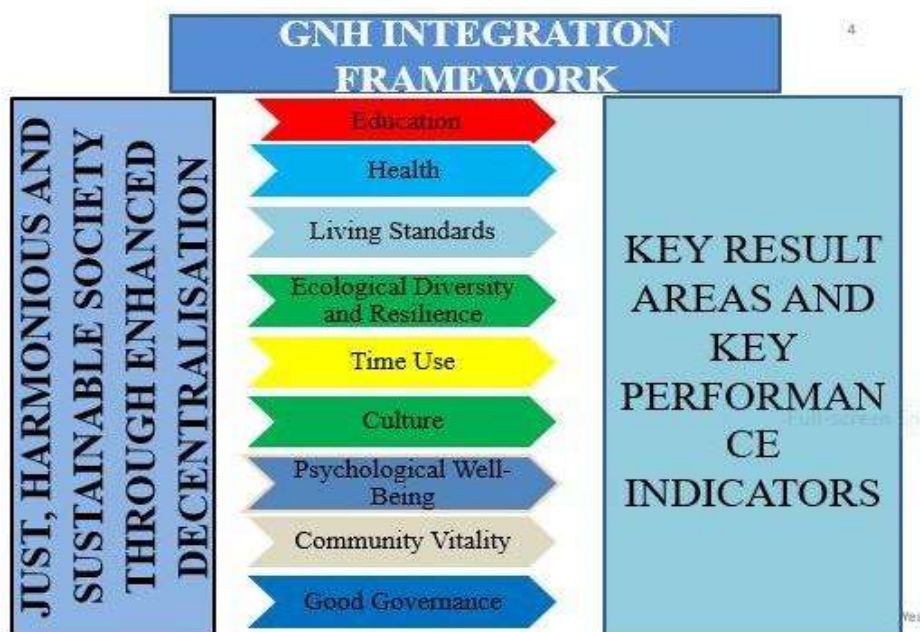
According to the 12th FYP, annual plans and programs are prepared, and a budget has been approved based on the activities that contribute to national development and sustainable

environment management. The budgets are tagged with a code that differentiates between RGoB or donor-supported funds, which enables proper monitoring and evaluation of funds. The financial management system is administered online, which ensures tracking of activities and expenditures. At the end of the year, evaluation of the activities and their progress is carried out by the GNHC, while the financial activities are audited by the Royal Audit Authority (RAA) and the Internal Audit Unit of each ministry. The audit reports are presented to the Parliament of Bhutan during their ongoing sessions.

Assessment Criterion 2: Operating mandate and budget

The Constitution of Bhutan enshrines the protection and conservation of the environment and mandates the maintenance of 60 percent forest cover in perpetuity, as outlined in the R-PP. Over the years, a set of strong laws and policies has evolved to ensure that the protection, management, and sustainable use of forests are mainstreamed across all governments. The policies are translated and implemented through Five-Year Plans (FYP). Under the guidance of the GNHC, Bhutan has established an integrated and transparent planning framework for economic development. The 12th FYP began implementation in November 2018 after being endorsed by the National Assembly. The vision that guides this plan emphasizes Maximization of Gross National Happiness through a “JUST, HARMONIOUS AND SUSTAINABLE SOCIETY THROUGH ENHANCED DECENTRALISATION” focusing on self-reliance and inclusive, green socioeconomic development. The GNHC as the overall coordinator for the planning framework (Figure 3.2) ensures all the resources mobilized from the development partners are aligned with the FYP that has been adopted by the Parliament and implemented through annual performance agreements, with targets and indicators signed by the Prime Minister and heads of all the agencies. The Department of Forests and Park under the Ministry of Agriculture and Forests has the mandate to ensure sustainable management of forest and implements five major programs in the 12th FYP, including: *sustainable management and utilization of forest resources and land enhanced, enhanced generation of RNR technologies, climate smart and disaster risk reduction, the Highland Development Program, and coordination and support services.*

Figure 3.2: National Planning Framework for the 12th FYP



The 12th FYP framework provides guidance on budget allocation and implementation in different sectors, as coordinated by the GNHC. The REDD+ budget allocation system also follows the same modality. The Ministry of Finance is the national agency responsible for managing and allocating budgets for all the ministries. The budget for implementing project activities is routed through the Ministry of Finance, per the RGoB rules and regulations on financial and procurement management. The REDD+ project funds were deposited directly from the World Bank to the designated account created for the project in the Royal Monetary Authority, from which the money is released to the Ministry of Finance. The Ministry of Finance then releases the money directly to the finance divisions of the implementing agencies (WMD, FRMD, Tarayana Foundation, National Land Commission, Territorial Forest Divisions, National Soil Service Centre, etc.) based on the work plan and release request letter sent by the PCU (WMD). The REDD+ Secretariat in WMD, DoFPS, MoAF houses the PCU, with the Chief of WMD as the Project Director. The REDD+ Secretariat ensures that all the budgeting, procurement and other activities are done in line with both World Bank and RGoB rules and regulations.

Assessment Criterion 3: Multi-sector coordination mechanisms and cross-sector collaboration

The REDD+ Readiness preparation process followed the FYP framework, which will also be used in the REDD+ implementation phase. The FYP development framework is designed to promote institutional collaboration and coordination. The national REDD+ institutions and management arrangements for Bhutan are aligned with the FYP and ensure that REDD+ activities are coordinated with, integrated into, and influencing the broader national or sector policy frameworks through the established institutional arrangements and platforms.

Table 3.1: Agencies and their Roles in the REDD+ Process

Agencies	Role in REDD+ Readiness
Gross National Happiness Commission Secretariat	Ensure REDD+ programs are in line with government plans and policies
National Land Commission Secretariat	Cadastral data, advice and guidance on land use change and land tenure
National Environment Commission Secretariat	GHG reporting, National Communication, UNFCCC Focal Point with a secretariat—with sectoral technical committees.
Ministry of Agriculture and Forests	Coordinate and implement REDD+ program
Ministry of Economic Affairs	Land clearance system, represented in the technical working group, ensures harmonization of their policies with that of REDD+ vision
Ministry of Foreign Affairs	Represent Bhutan at the government level in all international negotiations
Ministry of Finance	Facilitate budget availability for REDD+ implementation
Ministry of Home and Cultural Affairs Department of Local Government, Dzongkhag Administration, Gewog Administration	Represented in REDD+ Task Force, REDD+ committee at the local level facilitates disseminating information to local communities
Non-Governmental Organizations and Civil Society Organizations Royal Society for Protection of Nature Bhutan Trust Fund for Environmental Conservation National Commission for Women and Children Tarayana Foundation	Represented in REDD+ Task Force, Technical Working Groups and provide recommendations on relevant issues and assist the government with REDD+ readiness and implementation
Natural Resources Development Corporation Ltd.	Represented in the Technical Working Groups and recommendations on relevant issues and assist the government with REDD+ readiness and implementation
Royal University of Bhutan	Represented in Technical Working Groups and contribute to research and studies, advocacy, etc.

Details on the major institutions and platforms involved in the REDD+ process are presented below:

- **REDD+ Secretariat:** The Ministry of Agriculture and Forests is the focal institution. Therefore, there is a close interface between the agriculture and forestry sectors. The Watershed Management Division (WMD) under the DoFPS functions as the REDD+ Secretariat, ensuring overall coordination in implementing REDD+ Readiness activities in Bhutan. The REDD+ Secretariat also serves as the PMU administering the FCPF and other grants pertaining to REDD+ and ensures coordination and linkages between and among the Task Force, REDD+ Technical Working Groups (TWGs), implementers, and collaborators. The functions of the REDD+ Secretariat include but are not limited to (a) facilitating and managing all REDD+ readiness activities; (b) coordinating and participating in international REDD+ dialogues and providing information and material on Bhutan to the Chairperson of the REDD Taskforce, NEC during negotiations at international fora, such as COPs; and (c) coordinating capacity building and stakeholder engagement and disseminating information on REDD+ readiness at the national and local levels. The REDD+ Secretariat has an accountant and procurement officer.
- **REDD+ Task Force:** The REDD+ Task Force is the official national forum for discussion and coordination of matters related to REDD+. The Task Force comprises representatives from key relevant stakeholders in the Ministry of Agriculture & Forests, Ministry of Finance (Department of Macro-economic Affairs), National Environment Commission Secretariat, Gross National Happiness Commission Secretariat, Tarayana Foundation (CSO), and Bhutan Trust Fund for Environment Conservation. The Task Force provides policy support and REDD+ implementation guidance, oversees the work of the TWGs, and guides implementation of the R-PP including (i) reviewing the quarterly and annual progress of the project based on reports prepared by the WMD; (ii) guiding the WMD on project implementation; (iii) reviewing and approving updated procurement plans; and (iv) evaluating the progress of field implementation. The REDD+ Task Force chaired by the Director of DoFPS.
- **REDD+ Technical Working Groups (TWGs):** As part of the implementation arrangements, there are three REDD TWGs: (1) National Forest Monitoring System & Reference Emission Level; (2) Safeguards, Governance and Benefit Distribution; and (3) Strategy Options. Each group has clear terms of reference and is designed to focus on the operational level to provide technical inputs for implementation of each thematic area for REDD+ Readiness and implementation of result-based emissions reduction programs. The REDD+ TWG, in coordination with the WMD, leads the implementation of activities under thematic components and subcomponents.
 - ✓ *TWG on Strategy Options:* The TWG on Strategy Options comprises members of the Social Forestry & Extension Division, DoFPS, Nature Conservation Division, Forest Protection & Enforcement Division, Ugyen Wangchuck Institute of Conservation, Environment and Research from the Department of Forests & Park Services, National Soil Service Center from Department of Agriculture, Department of Livestock and Natural Resources Development Corporation Limited. This TWG leads discussions and generates proposals for the development of REDD+ Strategy Options for Bhutan and the design of demonstration activities through a consultative process.
 - ✓ *TWG on NFMS and REL/RL:* The TWG on NFMS and REL/RL are composed of members of the Forest Resources Management Division, Watershed Management Division, National Land Commission Secretariat, Ministry of Works and Human Settlement, Department of Hydropower and Power Systems and Ugyen Wangchuck Institute of Conservation, Environment and Research. This TWG (1) assesses and supports the establishment of REL/RL in Bhutan, (2) supports the design and implementation of NFMS, and (3) ensures that lessons and experiences from current forest-monitoring systems in Bhutan are incorporated into the NFMS design and that

lessons from similar analyses in other countries are integrated into recommendations for Bhutan's system.

- ✓ *TWG on Safeguards, Governance and Benefit Distribution*: This TWG comprises members of the Watershed Management Division, Bhutan Trust Fund for Environment Conservation, Royal Society for Protection of Nature, College of Natural Resources and Social Forestry & Extension Division. This TWG (1) supports the assessment and development of safeguards as part of Bhutan's REDD+ readiness process, (2) ensures that lessons and experiences from current or previous Benefit Distribution Systems (BDS) in Bhutan are assessed in the context of REDD+ requirements; and (3) ensures that lessons from similar analyses in other countries are integrated into recommendations for a REDD+ distribution system in Bhutan.

The REDD+ Task Force and REDD+ Technical Working Groups provided the platform to critically review crucial REDD+ components, such as the National REDD+ Strategy and Action Plan, the Safeguard Framework components, and the National Forest Reference Emission Level. This also enabled the REDD+ Secretariat to ensure and take on board the concerns and issues of all relevant stakeholders. All such issues were identified within these TWG meetings or during the bilateral meetings with the concerned agency, organized via the TWG members. The issues were reflected during the assessment studies of drivers, reflected in the REDD+ Strategy, and will be further validated with recommendations and implementation under the REDD+ Investment and Implementation Proposal, which was completed in June 2022.

The TWGs also helped the REDD+ Secretariat reach out to distant and rural communities. For example, the Tarayana Foundation, as the TWG and REDD+ Task Force member, conducted community consultation in the villages where they are well known by the communities. This was important as communities were more open and comfortable sharing issues related to REDD+ or natural resources management. Similarly, the Royal Society for the Protection of Nature (RSPN) coordinated with the REDD+ Secretariat to help build capacity in the local communities.

Bhutan has signed several international treaties and agreements that have implications for the forestry sector, most notably: the Convention on Biological Diversity (CBD), the United Nations Convention to Combat Desertification (UNCCD), the United Nations Framework Convention on Climate Change (UNFCCC), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), UNESCO World Heritage Convention, International Plant Protection Convention (IPPC), the Millennium Development Goals (MDG) and the South Asian Association for Regional Cooperation (SAARC) Development Goals (SDG).

At the national level, REDD+ resources helped supplement the efforts of DoFPS in enhancing coordination between the forest sector and other agencies to ensure that the requirements conform to the various international treaties and agreements are reflected in business plans, forest management plans, and implementation procedures. Project resources were also shared with other agencies in the Ministry (National Soil Service Centre, Department of Agriculture) as well external agencies including the National Land Commission, for the land-use zoning pilot (land capability classification) and development of related regulations, and the Royal Academy in Pangbisa in Paro to pilot the Glu-lam

initiative, technology intended to promote the sustainable use of timber. As part of the initiative to improve collaboration with the wood-based industries and other corporate and private sectors in the country, the project helped with organizing regular consultations on operational management of Forest Management Units (FMU), training field data managers, developing guidelines, and organizing a trip for wood-based industries to New Delhi, India to a trade fair based on wood products. Several participants bought new equipment made using technology that will enhance the value-added of the wood and reduce wood wastage in their sawmills and furniture units. Many workshops and consultations involved stakeholders from various sectors, particularly those mentioned in table 3.3, who contributed significantly to improving cross-sectoral coordination while also enhancing knowledge on climate change and related issues.

Substantial effort has been made to create awareness and share information across a wide range of stakeholders throughout the development of National REDD+ Strategy and Safeguards documents. This was achieved primarily through workshops, meetings, and focus group discussions while developing the REDD+ Strategy, the study on drivers, and the safeguards documents. Information has also been shared through the REDD+ website developed for the purpose of disseminating information and works undertaken under the REDD+ program.

Effort has also been made to engage youth by conducting sensitization workshops in six academic colleges, reaching around 2,000 participants comprising students and college faculty members. This was done once in 2016 and again in 2018. The workshops focused on climate change and the REDD+ program, watershed, soil and land management awareness. Summaries of the consultations and capacity-building activities are presented in table 3.3, and details are presented in Appendix A. Furthermore, the system of involving the stakeholders through the REDD+ Task Force and TWGs, which was very successful, will be further strengthened in the implementation phase to ensure better coordination.

The following are some of the lessons learned during the REDD+ readiness phase. These will be taken into account during the implementation phase:

- The requirement of a smaller technical committee, such as the Technical Working Groups (TWGs), with members from relevant agencies helped bridge the gap between the REDD+ Secretariat and the agencies involved. Bilateral meetings were organized easily between by REDD+ Secretariat and the agency, coordinated by the TWG.
- The TWG also provided opportunities for the identification of areas for future improvement, which now form the Policies and Measures (PAMs) under the REDD+ Strategy and is further validated for the development of the REDD+ Investment and Implementation Proposal.
- Community consultations—which were carried out thoroughly, provided real-life experiences, and ensured participation by women (which was mandatory)—also provided both perspective of the issues on the ground.
- Having partners on the ground helped the REDD+ Secretariat reach out to all stakeholders.

Challenges and their causes were analyzed and form the National REDD+ Strategy and Action Plan. They are being further validated as part of the REDD+ Investment & Implementation Proposal (IIP). Addressing the challenges will require resources, which will be sourced either through domestic financing or international financing, based on the IIP. Implementation of the IIP will begin with the REDD+ implementation phase for Bhutan.

The REDD+ Strategy and Action Plan has already been incorporated by agencies, in the form of the Low Emission Development Strategy for the forestry sector, and forms the core of the second NDC that was recently submitted to the UNFCCC.

Assessment Criterion 4: Technical supervision capacity

The implementation of components on Strategy and Safeguards is led by the WMD, while the FRMD is leading the implementation of components relating to the FREL, NFMS, and MRV. The FRMD coordinates the National Forest Inventory and houses the forest information and management system of the department. Other functional divisions and field divisions under DoFPS also implemented several activities under the REDD+ readiness program, including participatory forest management through community forestry, non-wood forest products, and mapping and capacity building for landscape restoration and forest fire management and research on forest dynamics and climate change. The Tarayana Foundation, as one of the main CSOs in the country, helped identify issues and generate recommendations from the local level as input into the National REDD+ Strategy and Action Plan.

The REDD+ program and the FCPF grant have helped immensely in building the institutional capacity of DoFPS and relevant stakeholders in Bhutan. The Food and Agriculture Organization (FAO) conducted several training sessions with the core technical team on Systems for Earth Observation, Data Access, Processing, Analysis for Land Monitoring (SEPAL), e-cognition, and geoportals. Similarly, regular training and capacity-building exercises focused on data analysis, with the support of the REDD+ project, helped the technical staff analyze the data collected from the NFI and produce a two-part “state of the nations” forest report: NFI report I and NFI report II. Numerous other training sessions have been conducted on geographic information systems (GIS), silviculture management, Forest and Nature Conservation Acts, and rules and regulations for foresters and rangers across the country. At the regional and local government levels, several training sessions were carried out, as shown in table 3.3. This has built capacity and raised awareness of different aspects of environment, climate change, and biodiversity conservation. Moreover, there is a wide range of agencies participating in REDD+ implementation activities, and their roles and potential responsibilities have already been articulated in various documents (table 3.1). Thus, capacity building has helped enhance REDD+ implementation.

As a result of these combined efforts, tremendous progress has been made in building the institutional capacity of the DoFPS technical staff, particularly in the areas of remote sensing, national forest inventories, and forest information management system. These activities have also enhanced service delivery as well sustainable forest management. Specifically, the Bhutanese team successfully prepared the forest reference emission level document with FAO-supported technical training on data analysis. The REDD+ activities also provided ample opportunity for the REDD+ Secretariat and other DoFPS officials to participate in the UNFCCC COPs and other REDD+ meetings, seminars, and training exercises at the international level. These experiences provided an opportunity to showcase the work done in Bhutan in the field of conservation and to present the issues that require international attention and support. This joint work contributed to advancing the global agenda on sustainable development, climate change, and demonstrated ways that Bhutan could fight to preserve natural resources to save the planet.

During the formulation of the draft bill on Forest and Nature Conservation, extensive consultations with local government leaders were conducted, which also helped enhance

understanding of the importance of forest conservation, the regulations and the responsibilities, and the services provided to the public by the department.

Assessment Criterion 5: Funds management capacity

The FCPF grant was managed by the Ministry of Finance of the Royal Government of Bhutan, which is also the focal point for the World Bank in the country. Bhutan's National REDD+ Secretariat is housed in the DoFPS within the Ministry of Agriculture and Forests. It manages the FCPF grant and other funding for REDD+ readiness, coordinates the implementation of REDD+ Readiness activities, and facilitates the integration of REDD+ considerations into national development plans. The Administration and Finance Division of the Ministry of Agriculture and Forests and Ministry of Finance (MoF) provided financial management for the REDD+ Readiness process. The Project Management Unit, housed in the Watershed Management Division of the DoFPS, had fiduciary responsibility for all aspects of project management.

The grant followed the national financial norms and procedures and the Project Operation Manual (POM). The budget was tagged to codes that differentiate between RGoB or donor-supported funds, which enabled proper monitoring and evaluation of their use. The financial management system was based online, which helped with tracking activities and expenditures. At the end of the year, evaluation of the activities and their progress was carried out by the GNHC, while financial activities were audited by the Royal Audit Authority (RAA) and Internal Audit Unit of each ministry. The audit reports were presented to the Parliament of Bhutan during their ongoing sessions. The REDD+ project activities were also screened and implemented through this process and in the future, the government will aim to introduce more online and systematic management to further streamline budgeting and project implementation.

Adequate capacity for managing the FCPF funds existed within the AFD and the MoF. A project support officer was recruited to monitor day-to-day operations and ensure compliance with the World Bank Financial Management procedures. Procurement of goods and services was carried out by the PMU, with support from the procurement section within the AFD. PMU capacity was enhanced through regular training, provided by the World Bank, on Systematic Tracking of Exchanges in Procurement (STEP), procurement, and financial management.

Assessment Criterion 6: Feedback and grievance redress mechanism

A Study on Feedback and Grievance Redress Mechanisms (FGRM) <https://www.dofps.gov.bt/documents/> was completed in 2021, and recommendations for the establishment of this mechanism were approved. The FGRM is a space for stakeholders to discuss and solve problems through an acceptable, independent, and institutionalized mechanism for resolving conflicts stemming from REDD+ implementation. The design considers formal and informal networks. The Report outlined the FGRM Framework, including potential grievances and conflicts that may arise as a result of the implementation of REDD+ activities and a plan for building on strengths and addressing gaps. The mechanism proposed was adopted with minor customization for the Bhutan for Life project (which was paused until the REDD+ FGRM was completed) under the same department.

Practical implementation or operationalization of the proposed mechanism has already started; therefore, lessons learned from development of the mechanism will help the DoFPS address gaps in the future.

As part of the study for preparing the FGRM Report, six consultation workshops were held: three at the local level and three at the regional level. In addition, focus discussions and meetings were held with key stakeholders. The participants of the workshops and consultations included representatives from key ministries and departments, NGOs/CSOs, elected local government leaders, community forest group members, and village representatives (appendix B). Details of this process are provided in annexes 1 to 3 of the FGRM report.

Gaps and Areas for Further Development under Subcomponent 1a

While significant progress has been made on REDD+ management arrangements, gaps and areas for further development remain.

Gaps:

- Involvement of private and corporate sectors, particularly those working in wood-based industries, needs to be strengthened.
- The multisector coordinating capacity of the institutions is weak.
- The technical supervision capacity of the staff working in the regional offices is weak. In addition, the technical capacity of the CSOs/NGOs and staff of other relevant sectors is weak.

Areas for further development:

- Regular meetings should be organized since there is a tremendous opportunity to engage and collaborate with these sectors to enhance the wood value chain contributing to sustainable forest management and climate change mitigation
- It is important to continue to use the robust, existing national frameworks and institutions for any project implementation in the country.
- Training and workshops should be conducted regularly.
- The technical supervision capacity of the staff and CSOs/NGOs needs to be upgraded. Targeted training should be provided to the relevant stakeholder groups.
- There is a need to continue strengthening the capacity of PMU staff stay abreast of the latest procurement regulations.
- More awareness raising activities should be conducted so that local people are fully aware about the
- There is also a need to mobilize resources for capacity building and operationalizing the FGRM.

Results of the Self-Assessment for Subcomponent 1a – National REDD+ Management Arrangements

Table 3.2: Summary of Self-Assessment for Subcomponent 1a: National REDD+ Management Arrangements

	Progress
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Assessment Criteria	Significant Progress	Progressing well, further development required	Further development required	Not yet demonstrating progress	Remarks
(1) Accountability and transparency					
(2) Operational mandates and budget					
(3) Mechanism for multisector coordination and cross-sector coordination					
(4) Technical supervision					
(5) Fund management capacity					
(6) Feedback and Grievance Redress Mechanism					

3.2 SUBCOMPONENT 1B: CONSULTATION, PARTICIPATION, AND OUTREACH

As part of the organization and consultation regarding REDD+ Readiness, the R-PP outlined the following activities for implementation: (a) preparation of an information-sharing and consultation process (developing awareness-raising program materials, i.e. a documentary, posters, brochures); (b) capacity building of local communities and training of trainers (TOT); (c) communication media (developing a website; media campaign process); (d) workshops and seminars (Dzongkhag, regional, and national levels). Output from implementation of these activities included: the development of awareness-raising materials training of local trainers to carry out community-level training sessions and workshops, development of a REDD+ website <https://redd.dofps.gov.bt/>, and increased awareness among communities and local government officials of the REDD+ program.

Progress and Achievements of Subcomponent 1b: Consultation, Participation and Out-reach

The national institutions responsible for leading the REDD+ process regularly engaged with key stakeholders and facilitated their participation in the readiness preparation process. The consultation, participation, and outreach build on those established during the formulation and implementation of activities under the R-PP. The outcomes of consultation, participation, and outreach efforts with key stakeholders guided the preparation of key documents, such as the Strategic Environmental and Social Assessment (SESA) and Environmental and Social Management Framework (ESMF) as well as

development of the national REDD+ strategy, reference levels, and monitoring systems (Appendix A).

As a result of implementation of the above activities, the following have been achieved:

- (a) A stakeholder engagement plan was developed and implemented throughout the readiness process.
- (b) The consultation process was established.
- (c) All REDD+ Readiness activities, particularly preparation of the REDD+ strategy, were developed through a participatory and consultative bottom-up approach.
- (d) An information-sharing mechanism was established.
- (e) Information is shared through the REDD+ website, workshops, meetings, the DoFPS website, publication of documents, posters etc.
- (f) All reports produced by the REDD+ PMU are available on the website.

Detailed descriptions of progress made and the major achievements of activities for each criterion under component 1b are presented below:

Assessment Criterion 7: Participation and engagement of key stakeholders

The REDD+ Secretariat has been coordinating with diverse stakeholders, including government agencies, NGOs, CSOs, and local government leaders, to encourage the active participation of key stakeholders in the REDD+ process. Stakeholder engagement in the national REDD+ process started with the preparation of the R-PP, taking the national administrative structures into account. At the local level, governance is structured around 20 Dzongkhags (districts) containing 205 Gewogs (subdistricts). The DoFPS field divisions and offices spread across all 20 Dzongkhags implement forestry plans and programs. Dzongkhag administrations are collaborators in preparing the REDD+ Readiness program and will serve as implementation collaborators. Consultations have involved all relevant stakeholders from the local to national levels.

All the major stakeholders are represented in the Task Force and the three TWGs, as mentioned in Component 1a, and met throughout the development of the documents to review and guide the works. Effort has been made to engage with other stakeholders regularly. The Task Force and TWGs are composed of stakeholders from different backgrounds, including from CSOs and NGOs, such as the Tarayana Foundation (a CSO that works primarily with remote and distinctive communities). The Tarayana Foundation is represented in the REDD+ Task Force and has been an active participant in the REDD+ readiness process. Other NGOs, such as the Royal Society for Protection of Nature (RSPN) and the Bhutan Trust Fund for Environmental Conservation, are also represented in the Technical Working Group (TWG) and contributed to the REDD+ Readiness process.

Special effort was made to involve the Tarayana Foundation and Royal Society for Protection of Nature (RSPN) to conduct consultations at the local level to inform the development of the National REDD+ Strategy and Action Plan. The Tarayana Foundation and RSPN were included in light of their good work and rapport with local communities (especially marginalized and remote communities). This ensured that all stakeholders were consulted. The REDD+ process required participation by women in consultations, for which special arrangements were made. In some consultation meetings, separate meetings were held for men and women to ensure maximum participation.

The RGoB has taken a proactive role in ensuring full participation and engagement of all relevant stakeholders throughout the REDD+ Readiness phase, starting from 2014, whether for capacity-building programs or the preparation of various documents. The consultation and engagement process led to the achievement of many milestones in addition to the REDD+ documents, such as the completion of the national forest inventory and subsequent reports; the draft forest and nature conservation bill of 2021, which was tabled in the parliament; the pilot of national land use zoning and glulam initiatives; and other capacity-building programs. Table 3.3 shows the events that have taken place, involving a total of 12,528 participants and ensuring maximum outreach to stakeholders by the department.

Table 3.3: Summary of REDD+ Consultations and Capacity-Building Activities

Year	Capacity Building	Management	Sensitization	Governance	Stakeholder engagement	Total No. of events	No. of participants
2015	5	0	1	0	6	12	380
2016	12	2	11	4	10	38	2,636
2017	0	1	0	0	0	1	51
2018	0	3	0	0	2	5	2,617
2019	10	4	2	6	6	28	3,938
2020	5	2	1	0	24	32	2,134
2021	14	1			47	62	753
Total	46	15	15	04	99	178	Total: 12,528 Female: 4,380 (35%) Male: 8,148 (65%)

Assessment Criterion 8: Consultation process

The REDD+ Secretariat has undertaken extensive consultations with a wide range of relevant stakeholders on the various components of REDD+. This was achieved by building on the early information and social mobilization campaign and dialogue conducted during the R-PP preparation phase and the consultations carried out during the MTR formulation phase.

For development of the National REDD+ Strategy and Action Plan, a training-of-trainers session was conducted for representatives of each forest office (territorial forest divisions and parks) in the districts and the Tarayana Foundation. The forest officials conducted consultations in 20 districts and 205 gewogs across the country. Similarly, the Tarayana Foundation covered all their constituencies and held consultations with local marginalized and remote communities. The issues and actions proposed from the local levels formed the

main building blocks and informed the development of the strategy document. Development of the SESA, ESMF, and FGRM followed the same approach, with consultations at the national, regional, and local levels. Recognizing that the stakeholders involved in the REDD+ process are from a range of diverse backgrounds, including varying levels of literacy, and from different linguistic and cultural backgrounds, various appropriate consultation methods and materials were used to meet the specific needs of the stakeholders. Local languages were always used during consultations with local communities and local government leaders.

Bhutan has developed an investment proposal for implementing the REDD+ strategy, which was completed by the end of July 2022. The investment proposal further details the drivers of deforestation and forest degradation and involves analysis of the typology and substance of the underlying drivers of deforestation and forest degradation. It encompasses the social, economic, and environmental dimensions of the policies and programs of stakeholders at the national, district, and subdistrict levels.

Assessment of the social dimension involved the examination of stakeholder inclusion and participation, including gender analysis in the governance of forest resource in the areas of (a) planning, (b) management, (c) environmental impact assessment, (d) harvesting, (e) value addition to the timber and non-wood products, (f) non-wood forest product enterprises, (g) marketing of products, and (h) environmental impact assessment, by taking the Cancun Safeguards into account.

The consultation processes generated detailed information on (i) gaps in the sustainable management of forest resources; (ii) social and gender issues affecting deforestation and forest degradation; (iii) social, gender, and environmental issues affecting deforestation and forest degradation from land-use change; (iv) challenges with wood/timber flow and enterprise development of non-wood forest products (NWFPs) and ecosystem services that influence forest degradation; (v) efficiencies gained from wood-harvesting and value-added technologies that influence forest degradation; and (vi) institutional, organizational, and technical issues affecting deforestation and forest degradation.

The investment proposal will be complemented by analytical works and reports on (i) a detailed analysis of the direct and indirect drivers of deforestation and forest degradation, (ii) a capacity needs assessment for implementing the National REDD+ Strategy and Action Plan, and (iii) a comprehensive Gender Action Plan for implementation of the National REDD+ Strategy and Action Plan.

Assessment Criterion 9: Information sharing and accessibility of information

Throughout the readiness process, the institutional and management arrangements established continued to create opportunities for coordination, participation, and information sharing and access to information for various stakeholders and partners. The main avenues for sharing information are workshops and the REDD+, DoFPS, and MoAF websites.

- *REDD+ website:* The REDD+ Secretariat developed a website <https://redd.dofps.gov.bt/> to disseminate information and showcase the activities launched under the REDD+ program. Workshop reports, study reports, and publications are periodically uploaded to the REDD+ website. In addition to the

website, information can also be accessed through leaflets, workshops, training materials, special events, and newspapers. The website contains a wealth of information on REDD+ and outlines the national REDD+ framework and institutional arrangements for REDD+ implementation. The website is promptly updated whenever new information becomes available.

- *DoFPS website:* The DoFPS website contains all forestry-related information, which enhances information availability and accessibility to the public [bt.](#)
- *MoAF website:* The ministry's website ensures wider outreach and information dissemination. Most procurement for consultancy services is also announced on the website [bt.](#)
- *Social media:* Information on various REDD+ workshops and consultations and video on Bhutan's REDD+ strategy was shared through the Watershed Management Division's official Facebook page <https://www.facebook.com/search/top?q=watershed%20management%20division>.
- Information is also shared through various platforms, such as TWG meetings, consultation meetings, and workshops. Printed booklets are distributed during such events.
- In addition, to ensure wider outreach, training and workshops were conducted at four colleges and academic institutes. 16,151 copies of books related to forest, soil, and water conservation and climate change were printed and given to the Department of School Education and the Ministry of Finance for distribution to the libraries of the colleges and schools. These materials also helped in developing the curriculum on environment and education.

Assessment Criterion 10: Implementation and public disclosure of consultation outcomes

Various forms of consultation meetings were held, in accordance with the requirements and to make the REDD+ process participatory. The consultation meetings were very useful for gathering information on the challenges encountered and recommendations for moving the REDD+ program forward. The outputs from these consultation meetings were compiled by the REDD+ Secretariat, and several documents were prepared, most notably the National REDD+ Strategy and Action Plan.

Websites and reports are mainly used for disclosure of the outcome of consultations. Simultaneously, workshops were used as a platform to highlight how the feedback and suggestions received during the consultation workshops were incorporated and to enable revision of the reports and dissemination to stakeholders.

All final reports were uploaded to the REDD+ website for public viewing. At the moment, the following completed reports have been uploaded: (i) Drivers of Deforestation and Forest Degradation, (ii) National REDD+ Strategy and Action Plan, (iii) Benefits-sharing Mechanism, (iv) Feasibility and Cost-Benefit Analysis of REDD+ Strategy Implementation, (v) Valuation of Forest Ecosystem Services, (vi) Feedback and Grievance Redress Mechanism, (vii) Forest Reference Emission Level/Forest Reference Level, (viii) Strategic Environmental and Social Analysis (SESA), (ix) Environmental and Social Management Framework, and (x) Bhutan Safeguard Information System (SIS).

Gaps and Areas for Further Development under Subcomponent 1b

Despite the achievements above, gaps and areas requiring further development remain.

Gaps:

- More active engagement of the local people is needed.
- The full participation of the private sector was lacking due to limited resources.
- The information has not been accessible to all segments of society, such as people in remote areas.
- All segments of the local communities are not fully aware of the outcome of the consultations and do not know how these are integrated into the REDD+ strategy.

Areas for further development:

- Local people, stakeholders, and the private sector can be engaged more effectively if there are adequate resources for the implementation of activities on the ground.
- The level of involvement of all relevant institutions, organizations, and local communities should be scaled up when the resources needed to engage them in implementing activities become available.
- REDD+ activities should be undertaken regularly by the Forestry Department.
- Local communities living in remote areas need special attention.
- The reports and the consultation outcomes should be disseminated during the implementation of the REDD+ strategy. Stakeholders need to witness actions on the ground rather than have continuous meetings and assessments.

Results of the Self-Assessment for Subcomponent 1b—Consultation, Participation, and Outreach

The results of the self-assessment for component 1b: Consultation, Participation, and Outreach are presented in table 3.4.

Table 3.4: Summary of Self-Assessment for Subcomponent 1b: Consultation, Participation, and Outreach

Assessment criteria	Progress				
	Significant progress	Progressing well, further development required	Further development required	Not yet demonstrating progress	Remarks
(7) Participation and engagement of key stakeholders					
(8) Consultation process					

(9) Information sharing and accessibility of information					
(10) Implementation and public disclosure of consultation outcomes					

4. Component 2: REDD+ STRATEGY PREPARATION

4.1 SUBCOMPONENT: 2A. LAND USE EVALUATION, FOREST POLICY AND GOVERNANCE

As part of the implementation of subcomponent 2a, the R-PP outlined the following activities for implementation: (a) assess and update the current drivers; (b) assess community forest (CF) management and update in accordance with REDD+ options; (c) assess and update current forest governance; (d) conduct a study on Shifting Cultivation (Tseri); (e) assess FMU operations; (f) update and prioritize drivers in terms of contribution to overall emissions; (g) perform economic analysis of the Strategy Options; (h) update the Livestock for Green Enterprise Development and Poverty Alleviation program; and (i) study climate change effects on fire hazards and their behavior in affected forest ecosystems.

The expected output from implementation of these activities are as follows: (a) drivers of deforestation and forest degradation would be analyzed and updated for incorporation into the REDD+ Strategy; (b) reports on studies on Tseri, CF management, forest governance, the sustainability of FMU operations would be published and available for planning processes; and (c) economic strategy options would be analyzed and livestock-based green enterprises would be developed for communities.

Progress and Achievements of Subcomponent 2a: Land use evaluation, forest policy and governance

The following achievements have resulted from implementation of the above-mentioned activities:

- Assessment of drivers of deforestation and forest degradation is completed.
- The main drivers of deforestation and forest degradation have been identified and prioritized based on broad consultation and discussion with all the stakeholders at the national and district levels.
- Through the study on the drivers, the links between the main barriers/drivers and the Strategy have been identified. Recommendations for addressing them have also been provided in the National REDD+ Strategy and Action Plan.
- Furthermore, the drivers are being dissected and activities to address them proposed in the REDD+ investment proposal that is currently under development.
- Adequate provisions have been made in Forest Policies and Legislation for natural resource rights and land tenure, titling, and governance.
- The assessment of the impact on forest law and policy has been identified through the D&D study as well as the REDD+ feasibility study.

A detailed description of progress achieved under each criterion in the assessment of land use, drivers of land-use change, forest law and policy governance are presented below.

Assessment Criterion 11: Assessment and analysis

Numerous assessments and analytical studies were carried out on land use, drivers of land-use change, forest laws, policies and governance for the implementation of the REDD+ program in Bhutan. The assessments were carried out as part of the study on the drivers of deforestation

and forest degradation, the development of safeguard frameworks, including the FGRM, the development of the National REDD+ Strategy and Action Plan, and planning of national land-use zoning. The purpose of the assessment of land use, drivers of land-use change, forest law, policy and governance were to identify the key drivers of deforestation and/or forest degradation, as well as activities concerning conservation, sustainable management of forests, and enhancement of forest carbon stocks. The assessment also analyzed shortcomings of current land use practices, and forest law, policy and governance contribute to the drivers of deforestation and forest degradation and identified potential solutions.

The Drivers of Deforestation and Forest Degradation (D&D) report¹ focused on analysis of the direct drivers of deforestation and forest degradation, analysis of changes in land-use cover, assessment of deforestation and forest degradation patterns, analysis of underlying drivers, and analysis of the regulatory and policy framework. This D&D report formed the basis on which the REDD+ strategy of Bhutan was developed to address the drivers of deforestation and forest degradation and ensure sustainable forest management and conservation.

The identification of drivers of deforestation and forest degradation was a critical component of the National REDD+ Strategy. A full assessment of the drivers of deforestation and forest degradation in Bhutan was undertaken in 2017 (MoAF 2017a). This assessment included the identification and analysis of all critical drivers and agents; the resulting emissions; impacts of drivers; the barriers to forest conservation, forest enhancement, and sustainable management; strategic options and key interventions; and the potential for increased carbon removals. A detailed analysis of the drivers, particularly of the underlying drivers of deforestation and forest degradation, was also carried out to analyze how the policy, regulatory, organizational, programmatic, governance, managerial and technical capacity dimensions of each underlying driver impact degradation and deforestation and ways to address them.

The results of the deforestation and forest degradation analysis indicate that 392,683 hectares of forests were gained in a 15-year period, while around 74,445 hectares were lost, resulting in a net increase of 12 percent at an annual rate of 0.8 percent. However, there seems to be more degradation as 667,680 hectares of forests experienced degradation. There is no distinguishable pattern in degradation between 2000 and 2010, but between 2010 and 2015, some patterns emerged. Forest degradation was followed by forest loss along the southern border of Bhutan as well as along valley bottoms, while the major areas of forest gain can be clearly observed in high altitudes in the north.

Both direct and indirect drivers of deforestation and forest degradation have been identified in the D&D study. The key drivers of deforestation identified are State Reserved Forest (SRF) land allotment, hydropower projects, roads, agriculture, mines and quarries, and roads, while timber harvesting, firewood, forest fires and livestock were identified as the key drivers of forest degradation.

In Bhutan, there are several human activities that directly impact forest cover and loss of forest carbon. They result in forest loss in particular locations, but their overall impact on forest cover on a national basis is negligible due to increases in forest cover elsewhere in the country. Hence, based on the analysis of land use/land cover change, deforestation is not a concerning trend in Bhutan. National statistics indicate that SRFs are lost due to conversion to other planned land

¹ Drivers of Deforestation and Forest Degradation report (available online at <https://www.dofps.gov.bt/documents/>)

uses/activities. Therefore, the deforestation in the country was classified as primarily planned deforestation.

The assessment of drivers took stock of the historical and future drivers of deforestation and forest degradation in Bhutan in order to provide a clearer idea of what policies and measures (PAMs) could be put in place today to anticipate and address pressures on the forest in the future. PAMs are a key part of a National REDD+ Strategy and are the means to address driver pressures from within and beyond the forestry sector. This assessment explored a range of criteria and priorities to guide Bhutan’s consideration of what interventions can be adopted to shift the pressures on forests. The assessment suggested the prioritization of degradation over deforestation, as forest cover is slightly increasing while the overall health of the forests is degrading. In addition, the assessment acknowledges that future deforestation will take place, hence it would be advisable to analyze forest area loss under different scenarios with a view to safeguarding forests with high conservation value and significant carbon stocks.

Assessment of the regulatory and policy framework indicated that Bhutan is progressing well in implementing the REDD+ program. The basis for Bhutan’s strong commitment to its forests stems from the Constitution of the Kingdom of Bhutan, which directs every Bhutanese person, as a trustee of the Kingdom’s natural resources, to contribute to the protection of the natural environment and the conservation of the rich biodiversity of Bhutan. The constitution is backed by numerous policies and acts that emphasize the conservation and sustainable management of forests.

Assessment Criterion 12: Prioritization of direct and indirect drivers/barriers to forest carbon stock enhancement

The analytical study on the drivers of deforestation and forest degradation has identified the key drivers of both deforestation and forest degradation. The key drivers identified for deforestation were then prioritized based on the extent of forest areas estimated to be affected annually by the drivers. They were then validated through 34 consultation workshops carried out in the three different regions of Bhutan (South Central, East, and West), represented by different sectors from each region. The key drivers of deforestation are the allotment of State Reserved Forest Land and forest conversion for a range of purposes, which include hydropower projects, roads, agriculture, mining and quarries, and transmission lines, as shown in **Error! Reference source not found.**

Table 4.1: Priority Ranking of Drivers of Deforestation

Driver	Area affected annually (Ha/yr.)	Annual GHG emissions as a result of forest loss (tCO ₂ e/yr.)	Rank based on the extent of deforestation
SRF land allotment for various purposes	1,923	604,852	1 st
Hydropower projects	1,880	591,327	2 nd
Roads	820	257,919	3 rd
Agriculture	778	244,709	4 th

Mines and quarries	633	199,101	5 th
Power lines	542	170,478	6 th

The details for every driver of deforestation identified and their projected trends are described in the D&D report of Bhutan available at www.redd.dofps.gov.bt.

The key drivers of forest degradation identified were prioritized and ranked based on the timber volumes estimated to be affected annually by each driver. The findings were validated during the same consultation workshops mentioned above. In addition, annual GHG emissions were estimated based on the average carbon stock density calculated for the year 2000.

Table 4.2: Priority Ranking of Drivers of Forest Degradation

Driver	Annual degradation (m ³ /ha)	Annual GHG emissions as a result of forest degradation (tCO ₂ e/yr.)	Rank based on the extent of deforestation
Timber harvesting	163,009	117,394	1 st
Firewood	84,936	61,168	2 nd
Forest fires	111,969	88,560	3 rd
Livestock	Not available	Not available	4 th

The key underlying drivers of deforestation and forest degradation in Bhutan include governance challenges, inadequate law enforcement, economic pressures, and poverty and demographic factors. Land allotment decisions are compromised by limited guidance on addressing sectoral interests, which creates conflict, and a lack of an overarching, long-term spatial planning policy. The National Land Commission is currently undertaking land zoning in the country and is also in the process of developing an overarching land-use policy to streamline and strengthen the land allotment system for various development activities. Stemming illegal activities is challenging, and there are potential loopholes in the timber allotment system to divert subsidized timber to urban markets. To address this issue, a forest and nature conservation bill has been tabled in the parliament, and revisions are expected to address the above-mentioned issues. Poverty is decreasing; however, significant challenges facing some rural communities may result in pressures to degrade forests for economic or practical reasons. Urbanization is increasing, which leads to farm abandonment. The subsequent reversion to shrub land can result in increased human-wildlife conflict (HWC) in the remaining adjoining agricultural lands.

The NRS Action Plan of Bhutan was developed based on the vision of a broad range of stakeholders, including government, forest-dependent communities, non-governmental organizations, CSOs, and the private sector. Through extensive consultations and a collaborative process, which started in 2010, the government and stakeholders worked to identify potential strategy options and practical interventions, which were then incorporated into the strategy to help address the drivers of deforestation and forest degradation.

Assessment Criterion 13: Link between the drivers/barriers and REDD+ activities

The analysis of the drivers of deforestation and forest degradation provided the basic framework for understanding the causes of deforestation and forest degradation and the barriers to sustainable forest management, forest conservation, and enhancement of forest carbon stock. These drivers and barriers were the basis for nationwide consultation meetings to develop action plans to address them. The consultation meetings further validated the drivers and links were identified. The stakeholders identified possible action plans, which were compiled and included in the development of the National REDD+ Strategy and Action Plan.

The National REDD+ Strategy² (NRS) of Bhutan has identified four Strategy Options. The intervention actions proposed are highly relevant and respond to the drivers and underlying causes of deforestation and forest degradation identified.

These Strategy Options will be implemented through several crosscutting policies and measures (PAMs). There are 10 PAMs identified in the NRS. Under each PAM there is a set of proposed actions for which different organizations will be responsible. Several PAMs have been devised to develop the enabling environment to ensure that policies, laws, regulation, and approaches are strengthened and all work in harmony. These PAMs also address capacity and resource needs. This enabling environment is essential in addressing many of the underlying drivers of deforestation and forest degradation and in providing the platform for direct interventions. Other PAMs provide direct interventions, which will reduce the impacts of deforestation and forest degradation, while improving livelihoods and other co-benefits.

The combined results of the *Cost Benefit Analysis, Economic Valuation* <https://www.dofps.gov.bt/documents/> and *Climate Change Mitigation Potentials* showed that the four Strategy Options will enable Bhutan to address the direct and indirect drivers of deforestation and forest degradation; and overcome the identified barriers while contributing to the national economic development agenda.

Assessment Criterion 14: Action plans to address natural resources rights, land tenure and governance

All laws in Bhutan clearly recognize the ownership and rights to land, natural resources, and other traditional/user rights. For instance, the Land Act (2007), which is the preeminent law guiding land use in Bhutan, clearly mentions the natural resource rights, land tenure, land leasing, and allotment of SRF land. The Constitution of Bhutan (2008); the Forest and Nature Conservation Act (1995); the National Forest Policy (2011); the Forest and Nature Conservation Rules and Regulations (2017); the Land Act (2007); and the National Environmental Protection Act of Bhutan (2007) have adequate provisions to address natural resources rights, land tenure, and governance issues. For effective REDD+ implementation, four Strategy Options were identified, and 10 PAMs were detailed, which are described under component 2b. For each PAM, several activities, expected outcomes, and key performance indicators are set out under the REDD+ Action Plan (annex 1, NRS of Bhutan).

A detailed analytical assessment was done to develop the NRS for Bhutan and create the National REDD+ Benefit Sharing Framework (BSF). The DoFPS has historically focused its efforts on strengthening forest management, including ensuring equity in benefit sharing. Bhutan already has a number of systems for benefit sharing related to (a) biodiversity

² Bhutan National REDD+ Strategy.....

conservation: access and benefit sharing (ABS) of genetic resources and traditional knowledge; (b) PES for watershed protection and drinking water; (c) community forestry for the conservation and sustainable management of forest resources, including timber and non-wood forest products; (d) Cordyceps by the highlanders (a special case established by Royal Decree); (e) eco-tourism; and (f) farmer groups and cooperatives. However, the advanced BSF of Bhutan highlights the need for appropriate alignment of land and tree ownership and harmonization or legal integration of the two land tenure regimes (customary and statutory).

Development of the FGRM has been completed, and it is now being implemented. The FGRM was developed as part of the safeguard framework to assist policy makers and relevant stakeholders in building and implementing a long-term and effective REDD+ program anchored in good forest governance. The FGRM aimed to reduce the vulnerability of local communities and vulnerable groups, strengthen their participation, and ensure accountability. Implementation of the FGRM will address issues relating to natural resource rights (including forest resources), tenure, and governance.

Assessment Criterion 15: Implications for forestry law and policy

The feasibility assessment of the regulatory and policy framework during the drafting of the NRS confirmed the overall consistency of the Strategy Options with the objectives set in the relevant Policies, Legislations and Regulations (PLRs). The regulatory framework, policies, and strategies linked to forest resources in Bhutan support forest conservation and sustainable forest management, including community forest management. Regulatory frameworks include principles of natural resource governance, sustainable management and utilization of forest resources, rights and duties, access to information, and the equitable distribution of benefits. The legislative and policy framework provides a balanced pathway and enabling environment for implementing REDD+ measures intended to strengthen sustainable natural resources management in Bhutan.

The assessment recommended the introduction of a standardized and robust monitoring system, highlighting the need for a clear scope and sequencing of the process. Despite the existence of enabling policies, it also recommended the development of effective management plans and the strengthening of institutional arrangements with a clearly defined set of responsibilities linked to the PAMs. This has led to the revision of the Forest and Nature Conservation Act of Bhutan (1995) and the revision of the Forest Nature Conservation Rules and Regulations (2017) in 2021.

Gaps and Areas for Further Development under Subcomponent 2a

Gaps:

- The Forest and Nature Conservation Bill is being revised.
- The issues and interventions that need to be implemented are identified but require sufficient budget resources for implementation to ensure visible impact.

Areas for further development:

- Sensitization activity on drivers of deforestation and forest degradation should be built into DoFPS's future plan.
- Forest regulations and other action plans need to be developed.
- Information sharing and awareness raising should be strengthened. The REDD+ Secretariat will strengthen this activity through training and workshops.

Table 4.3: Assessment for Subcomponent 2a: Land Use Evaluation, Forest Policy and Governance

Assessment Criteria	Progress			
	Significant Progress	Progressing well, further development required	Further development required	Not yet demonstrating progress
(11) Assessment and analysis				
(12) Prioritization of direct and indirect drivers/barriers to forest carbon stock enhancement				
(13) Link between drivers/barriers and REDD+ activities				
(14) Actions plans to take into account the right to natural resources, land tenure, and governance				
(15) Impacts on forest law and policies				

4.2 SUBCOMPONENT: 2B. REDD+ STRATEGY OPTIONS

As part of the implementation of subcomponent 2b, the R-PP outlined the following activities for implementation: (a) develop a National REDD+ Strategy (conduct feasibility assessments (socioeconomic, political and institutional) relevant to REDD+, perform a cost-benefit analysis (CBA) of REDD+ activities, study financing mechanisms for REDD+ activities and transactions, identify pilot project areas and pilot benefit-sharing arrangements in CF, carry out economic valuation to assess non-carbon benefits (NCB) of the forests and their contribution

to community livelihoods); and (b) review and revise existing mechanisms/programs to benefit readiness activities (review existing research on alternative livelihoods, analyze domestic demand and trade of logs/timber, analyze capacity building needs to improve technical knowledge and skills, develop Environmental Impact Assessments (EIA) and SIAs for biomass disposal, pilot participatory boundary demarcation for REDD+ pilots, and improve the forest fire management mechanism).

The expected outputs from the implementation of the above-mentioned activities were: (a) a National REDD+ Strategy was developed, incorporating reports from studies on risks associated with REDD+, feasibility assessments, financing mechanisms for REDD+ activities and transactions and good governance system for implementing REDD+ activities; (b) the non-carbon benefits of forests were quantified, along with their contribution to rural livelihoods; (c) existing mechanisms/programs **to benefit** readiness activities were reviewed and revised (with five sub-activities); (d) a report was published on livelihood alternatives and the domestic demand and trade of logs/timber for implementing REDD+ activities; (e) capacity building needs were analyzed; (f) pilot site boundaries were demarcated using a participatory approach; (g) improved forest fire management practices were established.

Progress and Achievements for Subcomponent 2b: REDD+ Strategy Options

The following key activities have been completed:

- The selection and prioritization of the Strategy Options was achieved through an in-depth consultation and participatory process in all 20 districts and 205 blocks/gewogs.
- Through the study, analysis was carried out to prioritize the strategy options considering the legal, social, and environment aspects
- A preliminary assessment was conducted of the impact of the Strategy Options on existing sectoral policy.

The progress achieved in identifying and prioritizing the Strategy Options, the feasibility assessment, and its implications for sectoral policies are described below.

Assessment Criterion 16: Selection and prioritization of REDD+ Strategy Options

The study on the drivers of deforestation and forest degradation provided the basic framework for understanding the causes of deforestation and forest degradation and the barriers to sustainable forest management, forest conservation, and enhancement of forest carbon stocks. These drivers and barriers were taken as the basis for carrying out nationwide consultations for the development of an action plan to address these drivers and barriers. The consultation meetings further validated the drivers, and links were identified. The stakeholders provided ideas for possible action, which were compiled and led to the development of the National REDD+ Strategy and Action Plan.

The main purpose of the National REDD+ Strategy is to reduce emissions from deforestation and forest degradation and enhance carbon stocks through the conservation, sustainable management of forests, and enhancement of forest carbon stocks. The strategy seeks to achieve these measures within a far broader vision that also addresses co-benefits, including enhancing livelihoods, protecting ecosystem services, and conserving biodiversity. Therefore, the focus is on continuing to strengthen the conservation of existing forests and increase the adaptive capacity to climate change impacts without compromising opportunities for future economic

development and prosperity. To achieve the vision of the strategy, there are four multisectoral Strategy Options that take into consideration Bhutan's unique status as a net carbon sink. All four Strategy Options are equally important and can be viewed as strategic interventions.

The Strategy Options define the general direction that Bhutan will take to achieve the REDD+ vision. These strategic options are supported by a feasibility and cost-benefit analysis, strong social and environmental safeguards, a benefit-sharing framework, and a monitoring and evaluation system. During the process of developing the strategy, a number of alternative options were examined before settling on the four strategic aims, which will address the direct and underlying/indirect drivers of forest deforestation and degradation.

- *Option 1. Strengthened Forest Management Practices:* This option seeks to support the existing frameworks, policies, and regulations for sustainable forest management and capacity building, stakeholder and community participation, guidance and resource management monitoring and enforcement.
- *Option 2. Climate Smart Primary Production:* A key aspect of this strategic option is to improve forestry and agricultural productivity to enhance incomes and thus reduce the need for encroachment on forest land. Activities to enhance areas of degraded forest and the management of forest growth to foster increased carbon sequestration are also envisioned.
- *Option 3. Integrated Land-Use Planning and Management:* This option intends to strengthen land-use planning systems and processes by achieving greater levels of harmonization across policies, improved collaboration among implementing departments/agencies, improved institutional capacities, and a stricter monitoring and enforcement regime.
- *Option 4. Improved Rural Livelihoods:* This option includes the broadening of opportunities for income generation through the sustainable management of NWFPs, payment for ecosystem services, nature-based enterprises, and climate-smart agricultural and livestock practices. The option involves the promotion of high-yielding livestock, crop diversification, agroforestry, intercropping, greenhouse farming, advanced irrigation systems, soil conservation, and organic farming.

Assessment Criterion 17: Feasibility assessment

The feasibility assessment was carried out to understand how REDD+ Strategy Options may impact Bhutan's economic development and their implications for existing policies and institutional establishments. The assessment was based on the situational assessment of the drivers of deforestation and forest degradation, including a cost-benefit analysis of activities to address them. The cost-benefit analysis presents the implementation costs of each strategy option. The results of the feasibility assessment guided prioritization of the Strategy Options and PAMs.

Regulatory and Policy Framework: A detailed assessment of the interaction and coherence of the Strategy Options and relevant policies, legislation and regulations showed a relevant and conducive environment for the REDD+ program. The Constitution stipulates a minimum requirement of 60 percent forest of the total land cover at all times and, thus, directs the government to ensure sustainable forest management and safeguard Bhutan's rich biodiversity and ecosystems. Table 4.4 presents an analytical summary of relevant policies, legislation, and regulations.

Table 4.4: Summary of the Relevant Policies, Legislation, and Regulations.

Policy	Summary Details	Interaction with the NRS
Gross National Happiness (1972)	Bhutan's unique development philosophy.	Need to consider indicators that measure the health of ecosystems, including a robust information management system. All four Strategic Options Support GNH.
Forest and Nature Conservation Act (1995)	Provides the primary authority for forestry activities in the country and framework for conservation and sustainable management.	FNCA is key in maintaining 60% forest cover and recognizes the traditional and cultural rights of local people to access and use forest resources.
National Environment Strategy (1998)	"The Middle Path" recognizes the need to develop the economy, while still maintaining the country's rich cultural heritage, traditional values and the natural resource base.	NRS is consistent with the objectives in the NES. All four Strategic Options Support the NES.
Environmental Assessment Act of Bhutan (2000)	Stipulates that environmental clearance is a prerequisite for development consent and sets out the environmental terms for project requirements.	The analytical work under REDD+ has confirmed sentiments expressed by communities and many stakeholders regarding the environmental impact of the energy sector.
National Environmental Protection Act of Bhutan (2007)	Functions as the umbrella legislation for environmental management and sets roles and responsibilities of key agencies.	The Act does not mention climate change explicitly, but the framework encompasses considerations for addressing forest degradation.
Land Act (2007)	The preeminent law guides land use and allows for leasing and allotment of SRFL.	Natural resources rights and land tenure are quite clear, making the country relatively unique in the context of REDD+. Though no definition for carbon rights and no zoning of the land.
National Forest Policy (2011)	Defines the goal of sustainable management of forest resources and biodiversity to produce a range of social, economic and environmental goods and services.	While the NFP mentions climate mitigation and adaptation, it does not provide guidance on how to pursue this in relation to other priorities.

Water Act of Bhutan (2011)	Along with the early Water Policy (2007), this Act seeks an integrated approach for effective management of water resources.	References climate change, and the need to find a balance between the needs of water management and the demands of water users.
Economic Development Policy (2016)	Promotes the Five Jewels, sectors that constitute core growth areas: hydropower; cottage and small industries; mining; tourism; and agriculture.	States that the NLC shall prepare a national land use plan (zoning). Informed land-use planning can address the critical drivers of deforestation and develop necessary mitigation measures to reduce pressure on forests.
Bhutan 2020	Sets national aspirations and reaffirms GNH as a central development concept for the country.	NRS supports the concept that environmental conservation is at the core of development planning.

Implementation Costs: To implement the NRS, the cost of investments was assessed and a related cost-benefit analysis was undertaken to ensure that displacement of emissions to other sectors and regions was avoided. The CBA was conducted by evaluating each PAM over 20 years, assuming that the proposed budget for planned activities contained a certain level of emission reduction potential and socioeconomic benefits. It provided a net present value (NPV) of the suggested PAMs, which is often used as an indicator for financial viability (See Table 15 of the National REDD+ Strategy document). Based on the combination of expert consultation and cost modeling, a total cost of US\$54,595,000 was estimated for implementation of the NRS Strategy Options (table 13).

Table 4.5: Budget Estimates for Operating the Strategy Options

Enabling PAMs	Estimated Cost (US\$ millions)	Direct Intervention PAMs	Estimated Cost (US\$ millions)
PAM 1 Developing institutional and sectoral capacity building to achieve sustainable forest management	3,000,000	PAM 5 Achieving a highly diversified and technology-based timber supply chain	5,800,000
PAM 2 Strengthening the effectiveness of existing policies and methods across all forestry	1,670,000	PAM 6 Adopting fire management approaches that limit impacts on the environment and communities	5,000,000

jurisdictions and areas			
PAM 3 Strengthened cross-sectoral planning and coordination	4,600,000	PAM 7 Establish plantations to provide sustainable wood products supply, increase carbon-stock, and enhance biodiversity	21,600,000
PAM 4 Harmonized EIA process to ensure infrastructure proposals are assessed and monitored as a package	1,600,000	PAM 8 Promoting the development of enterprises that sustainably manage NWFPs	1,075,000
		PAM 9 Broadening opportunities for income generation from ecosystem services	2,250,000
		PAM 10 Develop climate smart approaches in agriculture	8,000,000
Total Estimate	10,870,000		43,725,000
Grand Total		54,595,000	

- **Financial Gain and Risk Analysis:** A detailed analysis of estimated costs and benefits for each PAM was carried out in the D&D study. The details are available under the section “*estimated costs and benefits*” of the D&D report. The risk analysis was covered in the same report, for which details can be found under the section “*risks and mitigation measures: SESA & ESMF*” of the D&D report.
- **Institutional Analysis:** To ensure roles and responsibilities are well aligned while implementing REDD+ activities, thorough analysis of the relevant institutions and capacity requirements was conducted. For institutional settings, refer to the sections under subcomponent 1a.

Assessment Criterion 18: Implications of Strategy Options for existing sectoral policies

The historical absence of a land-use plan for Bhutan has been a significant impediment to effective environmental management. The projected allotment of SRFL for various development activities may result in significant deforestation and forest degradation unless there are adequate national spatial planning processes. The preeminent law guiding land use is the Land Act, 2007. The Act defines the mode of decision making on land use, allowing for subdivision and leasing, and provides procedural guidance and conveyances. To date, there have been challenges to achieving strong cross-sectoral planning. Land allotment decisions are made at the project level, with input from line ministries and approval by the local government or National Land Commission Secretariat (NLCS). The lack of an overarching long-term spatial planning policy means that decisions often occur in a piecemeal manner. There is a lack of adequate guidance, decision criteria, or accessible data and information, in order to align or mitigate regulatory and sectoral policy conflicts and reconcile trade-offs across different land-use interests. Therefore, there is a need to harmonize existing land-use planning legislation and policies, by developing a strategic approach to land use.

This strategic approach will require the establishment of a common reference frame in the form of a national land-use zoning system and geospatial management system. Land allotment based on national information and a land-use zoning system will encourage institutional decision making with definitive land characterization and a better understanding of land-use interests and trade-offs. This, in turn, will enhance biodiversity and ecosystem services, such as improving the quality and quantity of water resources, while also improving law enforcement and helping alleviate land disputes. However, the environmental, social, and economic goals should be adequately balanced to ensure that environmental considerations will not be sacrificed when trade-off decisions are made. It will address some of the underlying drivers of deforestation and forest degradation, including governance challenges, policy and regulatory enforcement, as well as conflicting sectoral policies. Investments will focus on providing support to mainstream and implement integrated spatial planning and participatory land-use planning.

Stemming illegal activities is challenging, and there are potential loopholes in the timber allotment system to divert subsidized timber to urban markets. Efficient check post management systems are required to monitor the movement of timber and other forest produce. Through the REDD+ project, an online forest clearance system was developed; however, it would need to be tested, improved, and rolled out. Similarly, there is a need to enhance the patrolling capacity for detecting illegal activities, particularly across the long, porous southern border. Modern technologies, such as drones, SMART, and other information technologies, will be necessary to safeguard forest resources.

Urbanization is increasing, which has led to farm abandonment. By 2030, 50 percent of Bhutanese will live in urban areas, according to United Nations population statistics (www.Worldometers.info). Urbanization has the potential to directly affect forests as a result of the deforestation that is often required to make room for urban expansion. Furthermore, farm abandonment is occurring because of outmigration, especially in economically depressed areas where market access is limited or not available. Many of these farms are reverting to shrub land and forest, which is leading to human-wildlife conflict because of fragmentation of the cropping system. Conflicts also occur in settlement areas where there has been habitat fragmentation because of deforestation, habitat loss, and degradation (Distefano 2005). These conflicts can have social and economic impacts and threaten the viability of the wildlife population. Records show that 55 percent of crop damage can be attributed to damage from wildlife (NEC 2016).

The overall resource base of forests in Bhutan for producing good quality construction timber is limited given the large extent of protected areas, the remote location, and steep mountain terrain of many of the forest areas. Only around 14 percent of the total forest area is considered capable of producing commercial timber. Timber is allotted at subsidized royalty rates to the rural population for housing construction, maintenance and repair, and other purposes. At present, an individual may take advantage of subsidized timber (4,000 cft in log form or standing tree basis in log form) once in 25 years for new construction. Subsidized timber for repair/renovation/extension of rural houses (700 cft in log or standing tree basis in log form) is supplied once in 12 years. To make shingles, standing trees are supplied once in three to five years, depending on the climatic condition of the locality. The amount of timber required to meet the allotments changes from year to year, but in general, subsidized timber allotment accounts for 72 percent of overall timber harvested.

According to interviewees, the Rural Subsidized Timber Policy (2020) needs to be redesigned as housing requirements have changed. Given that building materials are shifting away from reliance on wood, houses do not need to be repaired and rebuilt as often, and more people are living in suburban and urban areas than before. Furthermore, the concept of entitlement is based on demand from beneficiaries, not what the forest can sustainably provide, and acts as a disincentive for local people to steward the surrounding forest. There is also concern that the entitlement competes with community forestry, which is a local forest governance approach that relies on local community management. The present allotment system has many loopholes that provide opportunities to divert rural, subsidized timber to urban markets by relabeling it as commercial timber. This is incentivized by the price difference between rural and commercial timber, which has grown over time. Although changes to the Forest and Nature Conservation Rules and Regulations (2017) address the corrupt and illegal activity identified by the Anti-Corruption Commission in 2009, it does not comprise a redesign of the policy itself, which will need to be considered in the near future to appropriately address this issue.

Gaps and Areas for Further Development under Subcomponent 2b

Gaps:

- Prioritization of the Strategy Options was done based on the study on drivers of deforestation and forest degradation and also based on consultation and study covering all relevant stakeholders throughout the country.
- Lack of an overall land use policy

Areas for further development:

- The Strategy Options need to be expanded on in the REDD+ investment proposal.
- The cost-benefit analysis needs further study using more parameters.
- The NLC is developing the land-use policy at the moment, reflecting on sectoral policies

Results of the Self-Assessment for the Subcomponent 2b

Table 4.6: Summary of the Self-Assessment for Subcomponent 2b

	Progress
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Criteria of assessment	Significant Progress	Progressing well, further development required	Further development required	Not yet demonstrating progress	Remarks
(16) Selection and prioritization of Strategic Options for REDD+					Prioritization based on the drivers identified
(17) Feasibility assessment					
(18) Impact of strategic options on sector policies					

4.3 SUBCOMPONENT: 2C. IMPLEMENTATION FRAMEWORK

As part of the implementation of subcomponent 2c, the R-PP outlined the following activities for implementation: (a) develop a regulatory framework based on an assessment of existing regulation; (b) develop a framework for REDD+ activities and a registry; (c) develop a benefit-sharing modality; (d) conduct institutional reform (study gaps in institutional arrangement); and (e) build capacity. The expected outputs from the implementation of the above-mentioned activities include: (a) the suitability of institutional arrangements for REDD+ were reviewed and gaps were highlighted; (b) the current regulatory framework was assessed for coherence pertaining to the implementation of REDD+; (c) gaps and inconsistencies were identified and addressed; (d) benefit-sharing mechanisms/modalities were developed for REDD+; and (e) the regulatory framework for REDD+ activities was developed.

Progress and Achievements for Subcomponent 2c: Implementation Framework

The Forest and Nature Conservation Rules and Regulations (FNCRR) 2017 was revised in 2020 with adequate provisions for REDD+ activities. The revisions to the Forest Management Code of Bhutan (FMCB) and the Forest and Nature Conservation Act (FNCA) are being finalized.

The National REDD+ Strategy and Action Plan of Bhutan was completed in 2020, with a clear implementation framework. The Feedback Grievance and Redress Mechanism was completed and approved by the government in 2021. A REDD+ investment plan is being developed based on the findings of the D&D study, gender assessment, and capacity needs assessment reports.

The National REDD+ Benefit Sharing Framework document was completed in 2020.

A REDD+ registry has not been developed for Bhutan; however, the database management system related to forestry and REDD+ activities is housed at the Forest Resource Management Division (FRMD) of DoFPS as part of the NFMS/FREL/MRV.

Details of the progress and achievements in development of the implementation framework are highlighted below.

Assessment Criterion 19: Adoption and implementation of legislation/regulations

The NRS of Bhutan provides a detailed framework for implementation of REDD+ activities in the country and considers the institutional mandates, policies, and regulations at the national and district levels. The framework defines legal, policy, institutional, economic, and governance arrangements necessary to implement the REDD+ Strategy Options.

Institutional setup for REDD+ implementation has been described in component 1a; however, the institutional setting will be reviewed once implementation of REDD+ starts. Monitoring and evaluation of REDD+ has been integrated into existing national frameworks. The GNHCS monitors the implementation of plans and programs at the national level through annual status monitoring of the NKRAAs and corresponding KPIs as well as the mid-term review of the five-year plans. The implementation of the five-year plans is monitored through the national M&E system (single system).

The National Forest Policy of Bhutan (2011) has the overarching goal of ensuring sustainable management of forest resources and biodiversity conservation to meet the population's long-term needs. The Forest and Nature Conservation Act (FNCA) (1995) provides the legal framework for appropriate forest use and for enabling community and social forestry. The Forest and Nature Conservation Rules and Regulations of Bhutan (FNCRR) (2017) cover general aspects of managing State Reserved Forest Land (SRFL), as well as management requirements for protected areas, community forests, forest management units, watershed managements, and local forest management areas.

The 2017 FNCRR has been revised recently and now has adequate provisions for supporting REDD+ activities. It covers the issues of forest management, environmental protection and conservation, community participation, wood industries, enrichment plantation, forestry research, training, and education. The revised FNCRR provides for rationalization of rural timber allotment with a view to ensuring the optimal utilization of timber resources with minimal forest degradation. Management practices on ensuring sustainable forest management are described in detail in the Forest Management Code of Bhutan (FMCB) (2021). Revision of the 1995 Forest and Nature Conservation Act of Bhutan is in the final stage and is with Parliament for finalization and adoption. The provisions to support REDD+ activities, especially to safeguard the natural resources for both carbon as well as non-carbon benefits, are further strengthened and included in the revised bill.

Assessment Criterion 20: Guidelines for implementation

The National REDD+ Strategy and Action Plan of Bhutan 2020 outlines a clear implementation framework. The document was developed after a series of consultation workshops at both the national and local levels. Local consultations were carried out across the country covering all 20 districts and 205 gewogs (blocks). The NRS entails carbon rights, benefit-sharing mechanisms, REDD+ financing modalities, and institutional arrangement and coordination. The documents on the Feedback Grievance and Redress Mechanism, outlining detailed and adequate provisions for handling grievances and issues while implementing REDD+ activities, have been approved by the government very recently.

The department has finalized the proposal for implementing the NRS of Bhutan. The report is prepared based on the NRS and further analytical studies, such as a detailed study of the drivers

of deforestation and forest degradation, gender assessment and action plan, and a capacity needs assessment for implementing REDD+ activities in the country.

REDD+ implementation in the country will be backed by the following existing guidelines and strategies:

- *National Community Forestry Strategy*: It strategically charts the way ahead to ensure that community forestry contributes to Bhutan's overall socioeconomic and environmental development goals and to local democratization, and thus guides the future implementation of the community forestry program. It is based on a thorough analysis and reflection on the experiences gained with community forestry so far. The strategy guides all stakeholders involved in community forestry towards establishing an even more enabling framework for community forestry and simpler, but robust planning, implementation, and monitoring procedures, so that community forestry continues to thrive for the benefit of the rural communities of Bhutan.
- *Plantation Strategy of Bhutan, 2019*: The plantation strategy of Bhutan was revised in 2019 to make the plantation program more productive economically, socially, and environmentally and to streamline the plantation program. This document helps combat forest degradation by turning barren and degraded land into forest and by engaging in reforestation in cleared or logged forests. Through this strategic plantation program, barren and degraded areas are restocked to sustain forest productivity and, at the same time, improve the environment. This strategy guides the department with effective planning and implementation of the plantation program, while meeting the forest resources requirements of the recent policy and legislation of the Royal Government of Bhutan.
- *Forest Management Code of Bhutan*: The code provides guidance for forest management in Bhutan, covering sustainable forest management, wildlife conservation, watershed management, forest protection and enforcement, community forestry, and payment for environmental services. The code was prepared integrating all existing guidelines for forest and biodiversity management in Bhutan to ensure that all SRF are managed scientifically to optimize the use of its production, protection, conservation, and ecosystem functions.
- *Non-wood forest products development strategy*: The development of non-wood forest products is a crosscutting issue, including policy and legal frameworks, NWFP resource management, marketing and trade, research and capacity building, among other areas. Therefore, the national strategy for the development of non-wood product development draws on the contributions of many stakeholders from different backgrounds. There are currently over 800 community forests and 140 NWFP management groups. These networks facilitate a range of community-based programs and activities, which provide a platform to share expertise, build capacity, and help market products. A significant number of groups have the potential to produce items for sale. REDD+ implementation will support and continue building on this progress by strengthening supply chains, increasing the value-added of products, and accelerating the commercialization and domestication of NWFPs. Understanding the requirements for support and guidance will entail an assessment of existing bylaws and regulations and capacity for promoting the domestication, management, and trading of NWFPs.
- *Local forest management plans*: These are the management plans developed for those areas outside of existing formal management regimes (CF, FMU, PA, watersheds) and are managed for localized forest area management. There are numerous LFMPs already being developed and mainly cover the smallest administrative units (gewogs) of Bhutan.

Assessment Criterion 21: Benefit-sharing mechanism

The implementation of the Strategy Options and associated PAMs will lead to a range of benefits. Benefits will include monetary benefits (direct cash) and nonmonetary benefits for goods and services. Emphasis is placed on leveraging cash benefits that will be used for the implementation of National REDD+ Strategy and Action Plan through its various PAMs.

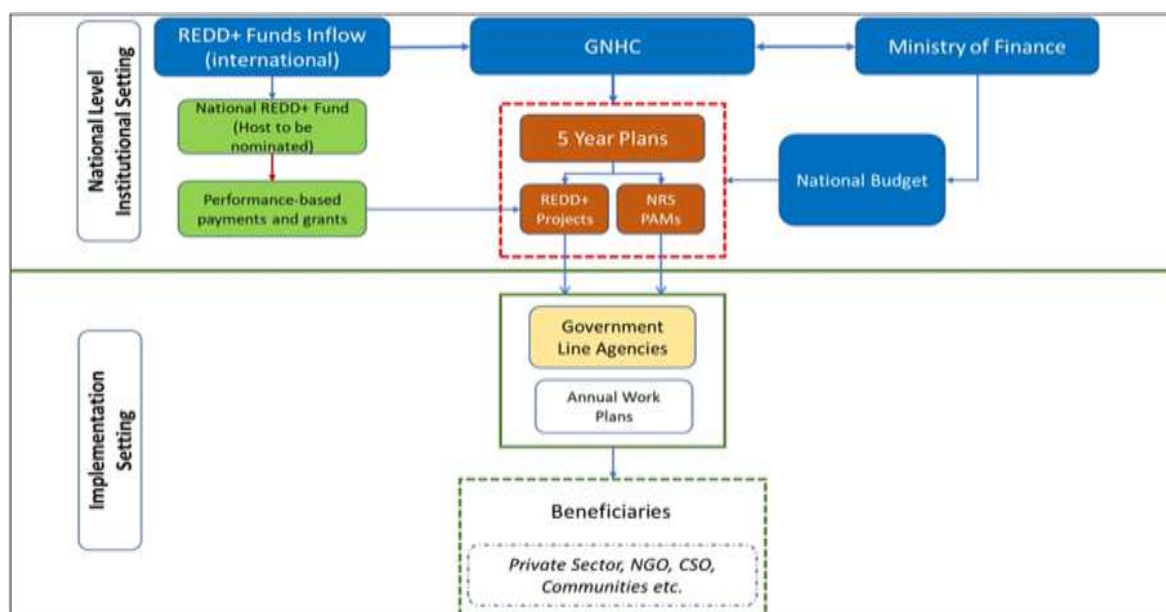
The implementation of the REDD+ strategy will also lead to several non-carbon benefits. Non-carbon benefits encompass a wide range of positive outcomes resulting from REDD+ activities beyond those associated with avoided emissions and/or carbon sequestration. They include social, environmental, and governance benefits. Social NCBs of REDD+ activities may include providing opportunities for livelihood improvement and facilitating the empowerment of individuals and communities. Environmental benefits may range from biodiversity conservation to increased resiliency of ecosystems and improved ecosystem services, such as water regulation and erosion control.

For transparent and equivalent sharing of benefits, a benefit-sharing mechanism has been developed and is ready for implementation. Details are available in the *“National REDD+ Benefit Sharing Framework document.”*³

Figure 4.1 illustrates the proposed institutional setting for REDD+ funds management. Any funding inflow from international sources is mobilized through GNHC and channeled into a REDD+ window within the Ministry of Finance. Funding can then be allocated in line with the FYP and NRS PAM Action Plan for all institutions that hold roles and responsibilities for REDD+ implementation. The Ministry of Finance is the financial arm of the government, and as a permanent institution, has the required capacity and systems in place to administer relatively large quantities of funds. The mainstreaming of REDD+ into the National Five-Year plans will mean no separate process is required for fund allocation and monitoring and evaluation.

³ National REDD+ Benefit Sharing Framework document.

Figure 4.1: Framework for Benefit Sharing



Assessment Criterion 22: National REDD+ Registry and system for monitoring REDD+ activities

Bhutan has not yet established a National REDD+ Registry as there is limited potential to benefit from results-based payment for which a registry is required. The registry is expected to be part of a climate fund, which is currently under development by the National Environment Commission Secretariat. To monitor the REDD+ PAMs, the proposed institutional arrangement in figure 4.1 under component 4a will be used and, if required, modified and tailored to function as the national REDD+ Registry. The database management system related to forestry and REDD+ activities is housed within the Forest Resources Management Division (FRMD) of DoFPS as part of the NFMS/FREL/MRV. The system has georeferenced information on REDD+ initiatives, activity data, emission factor data for different land uses and land-use change, and national forest inventory data, including REDD+ safeguards.

The NFMS and MRV was developed based on the existing national framework. The implementation of plans and programs at the national level is monitored by the GNHCS through annual status monitoring of the NKRA and the corresponding KPIs and the mid-term review of the five-year plans. Therefore, all the agencies and local governments have ensured that crosscutting themes such as environment, disaster management, gender, vulnerable groups and sports are mainstreamed in the programs and projects. Similarly, the Local Development Planning Manual (LDD, GNHCS, Local Development Planning Manual, 2021) guides local governments to integrate crosscutting issues and opportunities in their plan and programs.

Gaps and Areas for Further Development under Subcomponent 2c

Gaps:

- Full awareness-raising on FMCB is yet to be carried out, and revised FNCA awareness activities and implementation have not been tested in the field.
- The REDD+ investment plan is being finalized.
- The benefit-sharing mechanism has not been tested in the field.
- The National REDD+ Registry and system monitoring of REDD+ activities have not been developed.

Areas for further development:

- Revision of the FNCA 1995 should be completed.
- The REDD+ investment plan of Bhutan and awareness building should be completed.
- The BSM needs to be tested in the field and adjusted, if necessary.
- The National REDD+ Registry will be developed if the situation demands in future.

Results of the Self- Assessment for Subcomponent 2c

Table 4.7: Summary of the Self-Assessment for Subcomponent 2c

Criteria of assessment	Progress				Remarks
	Significant Progress	Progressing well, further development required	Further development	Not yet demonstrating progress	
(19) Adoption and implementation of legislation/regulations					
(20) Guidelines for implementation					
(21) Benefit sharing mechanism					
(22) National REDD+ registry and system monitoring REDD+ activities					

4.4 SUBCOMPONENT: 2D. SOCIAL AND ENVIRONMENTAL IMPACTS

As part of the readiness process, the R-PP outlined the following activities for implementation: (a) conduct an SESA (identify and analyze key drivers influencing society and environment, analyze policy and strategy framework related to REDD+, assess the social and environmental impact of REDD+ activities, establish a monitoring system); and (b) develop an ESMF for the Strategy Options identified. The following outputs are expected from the implementation of these activities: (a) key drivers influencing society and environment have been identified; (b) social and environmental impacts have been assessed; and (c) a monitoring system has been established and an ESMF developed.

As a result of implementation of the aforementioned activities, the following achievements and have been noted:

- The key drivers influencing society and the environment have been identified.
- The social and environmental impacts have been assessed,
- The monitoring system has been established.
- The ESMF has been developed.

Progress and Achievements for Subcomponent 2d: Social and Environmental impacts

The following have been completed through the implementation of the activities:

- The SESA and ESMF have been completed.
- Based on the SESA, a number of both positive and negative social and environmental impacts were identified, which were then integrated into the NRS under the relevant Strategy Options, in particular, under the most relevant PAMs. The ESMF and FGRM were developed to address any potential impacts arising from REDD+ implementation.
- The ESMF was completed.
- The progress achieved for the social and environmental impacts are presented hereunder.

Assessment Criterion 23: Analysis of social and environmental safeguard issues

The Royal Government of Bhutan (RGoB) fully acknowledges that social and environmental safeguards are critical to ensure that planned activities are successful as well as to reduce conflict, optimize benefits, and help ensure that activities do not result in unintentional harm to people or ecosystems. The country already has legislation aimed at minimizing or mitigating harm to people and the environment, and at the same time deriving the most benefit from development activities, including REDD+. National policies, laws, and regulations that explicitly, and some cases implicitly, reflect social and environmental safeguards already exist.

The development of the SESA was informed by an analysis of Bhutan's existing safeguard policies and regulations along with relevant World Bank safeguards policies, in a manner that confirms the execution of REDD+ activities are in accordance with UNFCCC guidelines. Bhutan has completed a Strategic Environmental and Social Assessment to identify potential adverse impacts and risks of NRS implementation and ensure coherence with the relevant World Bank safeguards operational policies. Bhutan has completed the development of these instruments that include an SESA for its NRS and an ESMF to reduce the potential environmental and social risks and enhance the benefits of REDD+ implementation. These safeguard documents provide clear directions for managing and mitigating the environmental and social risks and impacts of future investments (projects, activities, and/or policies and regulations) associated with the implementation of the country's REDD+ strategy.

Assessment Criterion 24: Impacts of REDD+ Strategy design

The strategy development and safeguard framework development were carried out in a complementary manner. Each process informed the development of the other and was accomplished through several consultation processes. The SESA under the REDD+ framework of Bhutan was developed to ensure that REDD+ activities "do no harm," and where possible, go beyond this to "do good" and achieve multiple (carbon and non-carbon) benefits during the implementation of the REDD+ activities. The safeguard framework identifies the possible

social and environmental impacts that might arise during the implementation of REDD+ activities (SESA) and accordingly proposes the measures to minimize these negative impacts through the ESMF.

The SESA formulation process included the following activities: (i) identifying and prioritizing the drivers of deforestation and degradation; (ii) analyzing the legal, policy, and institutional aspects of REDD+ Readiness; (iii) assessing the environmental and social issues linked to the Strategic Options or Policies and Measures (PAMS) contained in the NRS; and (iv) establishing outreach, communication and consultative mechanisms with relevant stakeholders. The baseline data and information collected for the development of the SESA has been used for development of the ESMF, which will provide the measures to minimize or address any negative (social or environmental) impacts that may arise during the implementation of REDD+ activities.

Based on the findings from development of the SESA, several positive and negative social and environmental impacts were identified, which were then integrated into the NRS under the relevant Strategy Options, in particular, under the most relevant PAMs. For instance, the SESA identified the potential environmental risk of introducing exotic species owing to the improper implementation of the proposed management plans. This potential risk has been proposed for interventions under PAM 7 of the NRS through improved capacities on the management and control of invasive species and grazing. Similarly, all the social and environmental impacts identified through the SESA process are duly acknowledged and interventions are designed under the relevant PAMs of the NRS.

The ESMF and FGRM for the NRS of Bhutan are also developed and these instruments will help address any potential impacts and grievances arising from REDD+ implementation. Table 4.8 presents the social and environmental impacts of each PAM, based on which activities for implementation in the strategy and action plan have been designed to address these negative impacts and enhance the benefits (<https://www.dofps.gov.bt/documents/>).

Table 4.8: Positive and Negative Impacts Identified under Each PAMs (SESA)

Positive Impacts		Negative Impacts	
Environmental	Social	Environmental	Social
PAM 1: Strengthening sustainable forest resources management and conservation of biodiversity beyond Protected Area			
PAM 2: Promote diversification and efficiency in the wood value chain			
PAM 3: Strengthen Forest fire management			
PAM 4: Plantation development and restoration of degraded areas for increased carbon stock, biodiversity conservation and sustainable supply of wood products (timber and firewood)			
PAM 5: Harmonizing land-use planning (cross-sectoral integrated land-use planning)			

PAM 6: Support and strengthen environmental impact assessment and compliance monitoring system and coordination
PAM 7: Sustainable management of NWFPs (domestication and cultivation) and promote enterprise development
PAM 8: Encourage and promote income generation from ecosystem services in key sectors
PAM 9: Climate smart livestock farming practices
PAM 10: Climate smart agriculture practices

Assessment Criterion 25: Environmental and Social Management Framework

Countries that have received funding from the FCPF for REDD+ Readiness preparation through the World Bank are required to ensure compliance with the social and environmental safeguards of the World Bank and are required to mainstream their findings into the NRS. The Strategic Environmental and Social Assessment (SESA) and Environmental and Social Management Framework (ESMF) were developed to create a sustainable institutional structure that ensures effective management of social and environmental issues beyond the readiness phase of the REDD+ process. Bhutan has both the SESA and ESMF endorsed and ready for implementation.

As required by the World Bank, Bhutan developed an ESMF as a direct output of the SESA process. The ESMF for the NRS of Bhutan has been endorsed by the RGoB and has been submitted to the UNFCCC. The ESMF of Bhutan lays out principles, rules, guidelines, and procedures for assessing issues and impacts associated with the planned REDD+ PAMs that may occur in the future but are not presently known or are uncertain. It provides a broad framework for the country to address environmental and social issues in the NRS as it is implemented.

The strategic aspect of the SESA is implemented at the national level. Upstream analytical work and robust consultations with key and relevant stakeholders were conducted with the aim of identifying the social, environmental, and gender issues, risks, and impacts related to the NRS. The SESA process ensured that social, environmental, and gender concerns would be integrated into the development and implementation process of the NRS and key intervention areas. Consultations were conducted using the community engagement approach used by several World Bank-financed projects supporting natural resource management in Bhutan and a platform for the participation of relevant stakeholders to integrate social, environmental, and gender concerns related to REDD+ implementation. Furthermore, recommendations were made on how to address gaps in relevant policy, legal frameworks, and institutional capacity to manage risks/impacts.

Gaps and Areas for Further Development under Subcomponent 2d

Gaps:

- Awareness raising about the SESA and ESMF will be carried out once the pandemic situation has improved.
- The SESA, ESMF, and FGRM are only partially implemented.
- Consultations and workshops were minimal due to the pandemic.
- Field testing was not done.

Areas for further development:

- Greater awareness of the documents is needed across the country.
- Full implementation of the SESA, ESMF, and FGRM for any development activities should be ensured.
- Field testing should be conducted and adjusted, if required.

Results of the Self- Assessment for Subcomponent 2d

The self-assessment for the social and environmental impacts are presented in table 4.9.

Table 4.9: Results of the Self-Assessment for Component 2d: Social and Environmental Impacts

Assessment Criteria	Significant progress	Progressing well, further development required	Further development required	Not yet demonstrating progress
(23) Analysis of social and environmental safeguard issues				
(24) REDD+ strategy design with respect to impacts				
(25) Environmental and Social Management Framework				

5. Component 3: REFERENCE EMISSION LEVEL/ REFERENCE LEVEL

As part of the readiness process, the R-PP outlined the following implementation activities for component 3:

- Conduct capacity building and review of methodologies for establishing REL/RL (hold an REL/RL capacity-building workshop with stakeholders; complete a study on REL/RL implementation in Bhutan and the methodological options available; hold a stakeholder consultation workshop to present findings of the REL/RL methodological study; have consultations to determine which methodologies to pilot at demonstration sites).
- Analyze historical land-use change trends at the national scale; land use change analysis activities; calculate historical annual emissions using emission factors from the national forest monitoring system.

- (c) Review relevant national circumstances and collect data (assess the drivers of deforestation, including policy and land use governance; hold a stakeholder consultation workshop to present findings of the study on national circumstances; develop potential REL/RL adjustment factors).
- (d) Select demonstration sites for piloting and testing of national and/or subnational REL/RL (submit proposals for locations of pilot sites where REL/RL methodologies will be tested; gather preliminary national and/or subnational REL/RL and feedback on the methodology used from the UNFCCC; derive lessons learned and feedback from implementation; refine the REL/RL methodology).

Progress achieved

Technical assessment of Bhutan's FREL and FRL was carried out by UNFCCC, and a report was published, which was found to be transparent, accurate, complete, and consistent as well as compliant with UNFCCC/ IPCC guidelines.

Through the implementation of the activities above, the following actions have been completed:

- National FREL and FRL have been developed with appropriate methodology.
- FREL and FRL have been developed using the historical activity data.
- National circumstances have been defined and the relevant data have been gathered. The adjustment is 0.1 percent of biomass carbon and not actual national circumstances.
- All REDD+ activities and carbon pools accounted for the development of the FREL and two separate FREL and FRL were developed to enhance transparency.
- Methodologically consistent with the greenhouse gas inventory in LULUCF.
- The historical data were used to generate activity data and emission factors where available, such as the carbon density of forests, biomass growth, the biomass expansion factor.
- The FREL and FRL of Bhutan is transparent (all REDD+ activities and carbon pools have been included), accurate (mostly national data), consistent (comply with UNFCCC and IPCC guidelines) and comparable.
- Technical assessment by UNFCCC was completed. The technical assessment was able to reconstruct the FREL of Bhutan.
- Bhutan is small country and there is no need for a subnational FREL.
- Future needs are identified and reported as part of the improvement plan.

Details of progress and achievements made under component 3 are highlighted below:

Bhutan's FREL/ FRL

Bhutan currently enjoys one of the world's most intact and pristine environments, rich biological diversity, low air pollution and low habitat fragmentation. The conservation of the environment is closely intertwined with religious beliefs and cultural myths, which are mainstreamed into the national policy framework.

Bhutan is the only country in the world with a constitutional mandate to maintain 60 percent of the country's land area under forest cover at all times. Today, more than 71 percent of Bhutan is under forest cover. Furthermore, Bhutan has been carbon negative since 2010. This was reported as part of the Second National Communication submitted to the UNFCCC.

At COP15 in 2009 Bhutan committed to remain carbon neutral and reaffirmed this commitment as part of the NDC1 and the updated NDC submitted to UNFCCC in 2021. Forests form the cornerstone of Bhutan’s commitment to remain carbon neutral. More than 50 percent of the land area is designated as protected areas, and the use of forest and forest resources are administered through the Forest and Nature Conservation Act 1995, Forest and Nature Conservation Rules and Regulations 2000, 2003, 2006, 2017, and amended rules and regulations 2020. This contributes to Bhutan having one of the lowest deforestation rates among countries in Asia, at 0.01 percent.

However, because of development activities and a growing population, land use changes are unavoidable. As a result, Bhutan experiences small-scale deforestation and an increased demand for wood and wood products. All efforts are made to restore degraded and barren areas through plantations and reforestation supported by the government.

Pursuant to the decision of UNFCCC and as a requirement of the REDD+ Readiness Package of the FCPF, Bhutan developed the national FREL and FRL to take stock of emissions and removal of CO₂ from the forest sector. It also set a baseline to measure future performance, with an adjusted historical approach for emissions and without adjustment for removals, for the reference periods of 2005–2009 and 2010–2014.

The FREL and FRL were developed through a series of consultative meetings and training/workshops. The week-long training for the development of activity data for deforestation was conducted by the Food and Agriculture Organization of the United Nations⁴ in Bhutan and the workshop on the general approach for developing the FREL and FRL was conducted in 2019. This workshop motivated Bhutan to develop a separate FREL (concerning emissions from deforestation) and FRL (concerning emissions and removal from “+” activities of REDD+).

While developing the FREL and FRL, all relevant national circumstances were accounted for, and an adjustment of 0.1 percent of biomass carbon stock was made to the FREL, while no adjustment was needed for the FRL.

Assessment Criterion 26: Demonstration of methodologies

Bhutan developed its FREL and/ or FRL using a stepwise approach at the national level. A national FREL and FRL were developed as most of the required data are available, and as Bhutan is a small country, there was no need for development of a subnational FREL and FRL. This is a significant advantage for Bhutan as a small nation, as REDD+ projects could be implemented at the national level.

Historical emissions from deforestation are estimated through analysis of remote sensing data. Historical emissions from the conservation of forest carbon stocks and sustainable forest management (SFM) are estimated using records of harvested timber for the reference period. Historical removals for the conservation of forest carbon stocks and SFM are estimated based on biomass increment in forest land remaining as forests; and historical removals from enhancement of carbon stocks were estimated using the plantation record and biomass growth

⁴ Technical components, such as capacity building and procurement, were contracted out to FAO.

for natural forests.⁵ The biomass increment and growth rate are derived from the NFI data, and non-CO₂ emissions from forest fires are estimated using the forest burned area record and IPCC default emissions and combustion factor.

Activity Data

Deforestation data over the 10-year reference period (2005–2014) were generated from satellite images, using a global forest change product, and geospatial analysis of time series data of Landsat 7 and Landsat 8 imagery. Each point of deforestation is validated in the field, with ancillary information maintained by the department and by visual interpretation of point of loss with high-resolution imagery from the collect earth platform. Average annual forest loss to different categories of non-forest land (cropland, grassland, settlement, and other land) was then obtained to estimate emissions. The total deforested area was then multiplied by the difference in carbon density between forest land and non-forest land to estimate CO₂ emissions due to deforestation, producing the FREL.

Second activity data consisted of the historical forest area under sustainable forest management, conservation of forest carbon stocks, and enhancement of forest carbon stocks. These were used to estimate removals, while the volume of wood removed from these areas and the area of forest damaged by fire was used to estimate emissions. The net balance of removals and emissions of these activities is called the FRL for Bhutan.

Emission Factors

The emission factor, or carbon density, was calculated using data from the National Forest Inventory and biomass equations. The emission factor was used to estimate emissions from deforestation (mainly at the Tier 1 level).

The wood density, biomass expansion factor, and carbon fraction of 0.47 was applied to estimate emissions from wood removals. Non-CO₂ gases—CH₄, CO, and N₂O—are also estimated from the forest area damaged by forest fires in accordance with the IPCC Guidelines 2006 and converted into CO₂ equivalents using the Global Warming Potential of AR5.

Removal Factor

The removal factor of 2.01 tonnes of dry matter per hectare per year was applied for the remaining forest and non-forest land converted to forest land during the reference period. This is a country-specific removal factor estimated through the NFI.

Forest Reference Emission Level

The FREL for deforestation was constructed by calculating the historical average emissions from deforestation and adding an upward adjustment of 0.1 percent of biomass carbon stock

⁵ Republic of Bhutan (2020) Bhutan's Proposed National Forest Reference Emission Level and National Forest Reference Level Submission for technical assessment to UNFCCC.

https://redd.unfccc.int/files/final_bhutan_frel_frl_20201207_for_webposting.pdf

and delayed emission from soil. The adjustment was determined based on an assessment of the national circumstances and future projections of developmental activities in the country. With adjustment, average annual emissions from deforestation increased to 505,837 metric tons of CO₂ from the historical average of 159,781 metric tons of CO₂ per annum.

Forest Reference Level

The FRL for sustainable forest management, conservation of forest carbon stocks, and enhancement of forest carbon stocks is constructed using the historical sequestration rate without applying any adjustment. CO₂ and non-CO₂ emissions due to timber harvesting and forest fires are subtracted from the total CO₂ sequestration by forest. The average net annual removal by Bhutan's forest is 8,539,085 metric tons of CO₂ per annum.

Bhutan also reported uncertainty regarding the use of error propagation methods for the FREL and FRL and outlined a list of future areas for improvement in the FREL and FRL submitted to UNFCCC.

While the FREL and FRL were developed using the available activity data and emission factors from the national forest inventory, the FREL and FRL of Bhutan can be improved through the following additional actions:

- (a) Develop forest type/land use and land cover maps annually or periodically using the same—preferably high-resolution—satellite imagery.
- (b) Enhance the database system.
- (c) Develop species-specific biomass allometric equations.
- (d) Conduct periodic inventory assessments.

Considering the significance of the improved data, Bhutan has developed a forest type map using ground data from the first NFI (2012–2015) and will produce another using data from the second NFI (2021–2022). Furthermore, there are plans to periodically produce land cover statistics.

The Forest Resources Information Management and Reporting System (FRIMS) was recently strengthened to address the data gaps identified. For example, there are cases of forest pest and disease infestation, but these statistics are not properly recorded. Other information includes forest loss from harvesting in privately owned land, construction of roads, and the location of plantation areas and mining activities. The FRIMS, which acts as a centralized information and data collection system, has been revamped recently to include comprehensive modules on each aspect of forest management to act as a data repository. There are plans to further enhance the system. A data protocol for the FRIMS has also been developed for the first time (FRMD, 2021) <https://www.dofps.gov.bt/documents/>. Training has been conducted to ensure proper usage of the protocol.

Fieldwork for the development of 25 more species-specific biomass allometric equations is under way, and it is expected that by the end of the 2022, the equations will be available for use. The first NFI used only 14 species.

Assessment Criterion 27: Use of historical data, adjusted for national circumstances

For the purpose of developing the FREL/FRL, all available historical data were used. Historical data on deforestation were generated for the periods of 2005–2009 and 2010–2014.

Average deforestation data for 2005–2009 and 2010–2014 were used to assess emissions from deforestation during the reference period 2005–2014. The rate of deforestation is very low at 0.01 percent, or 263 hectares, of forest loss annually. Based on the assessment of national circumstances and development projections, future emissions from deforestation are predicted to increase significantly annually in the next five years (2018–2023), which is higher than the historical average. While the historical deforestation rate is 0.01 percent, the deforestation rate is expected to increase to 0.10 as a result of the increased pressure from development activities in roads, hydropower, and mining.⁶ Possible increases are also projected in emissions from agriculture, forest fires, and harvesting of timber and firewood and, thus, can be considered a conservative estimate. Since there are development activities planned for 2018–2023 and beyond, these rates of deforestation are not representative of future emission scenarios in Bhutan. Therefore, an adjustment was made against average historical emissions.

Historical records of wood removals, plantations, and areas of forest damaged by fires (from 2005 to 2014) were also used to estimate the emissions from SMF, conservation of forest carbon stock, and enhancement of forest carbon stock.

The data used to develop the FREL and FRL were properly and transparently documented to enable reconstruction of the FREL and FRL. The UNFCCC technical assessment team was able to reconstruct the FREL and FRL using the same data and documentation provided by Bhutan, as evident in the UNFCCC technical assessment report. (<https://redd.unfccc.int/submissions.html?sortCountry=asc&sortYear=desc&country=btn>).

Assessment Criterion 28: Technical feasibility of the methodological approach, and consistency with UNFCCC/IPCC guidance and guidelines

The FREL and FRL were developed in accordance with the methodological guidance of the FCPF, the reporting guidelines of the UNFCCC, and a combination of the Tier 1 and 2 approaches provided in the IPCC guidelines. The document follows the recommendations of the Global Forest Observations Initiative (GFOI) methodological guidance. The methodology adopted for calculation of emissions and removal for the FREL and FRL is consistent with the GHG inventory report submitted as part of the second national communication to UNFCCC. The emission factor used in the FREL and FRL is a combination of the Tier 1 and Tier 2 approaches.⁷ Consistency in terms of method and data use will be maintained for future GHG inventories.

The UNFCCC assessment team noted that the data and information used by Bhutan in constructing its FREL and FRL are transparent, complete, and, overall, in accordance with the guidelines contained in the annex to decision 12/CP.17. The technical assessment team of the UNFCCC was also able to reconstruct the FREL and FRL of Bhutan based on the data shared with the assessment team. The methodological approach, therefore, allows for technical

⁶ Republic of Bhutan (2020) Bhutan's Proposed National Forest Reference Emission Level and National Forest Reference Level Submission for technical assessment to UNFCCC. https://redd.unfccc.int/files/final_bhutan_frel_frl_20201207_for_webposting.pdf

⁷ Republic of Bhutan (2020) Bhutan's Proposed National Forest Reference Emission Level and National Forest Reference Level Submission for technical assessment to UNFCCC. https://redd.unfccc.int/files/final_bhutan_frel_frl_20201207_for_webposting.pdf

assessment of the data sets, approaches, methods, and assumptions used in the construction of the FREL and FRL.

The FREL and FRL is consistent with UNFCCC and IPCC guidelines as all emission and removals are estimated using the processed-based approach or Gain-Loss Method. Equation 2.4 of the 2006 IPCC guidelines is adopted to estimate the emission factors, and emissions were estimated using equation 2.6 of the same guidelines.

$$\Delta C = \Delta C_G - \Delta C_L \quad \text{(Equation 2.4 of 2006 IPCC Guidelines)}$$

$$Emission = A \times EF \quad \text{(Equation 2.6 of 2006 IPCC Guidelines)}$$

Where,

ΔC = annual carbon stock change in the pool, metric tons C yr⁻¹

ΔC_G = annual gain of carbon, metric tons C yr⁻¹

ΔC_L = annual loss of carbon, metric tons C yr⁻¹

A = Activity Data

EF = Emission Factor

Table 5.1 shows the activity-specific IPCC equations used for development of the FREL and FRL.

Table 5.1: IPCC Equations used for Development of the FREL and FRL

Sl.No	REDD+ Activity	Equation	Remarks
1	Deforestation	Emission = A x EF	
2	Sustainable Forest Management	<p>1. $SMF_{Timber_emission} = H \times WD \times BEF \times CF \times 44/12$</p> <p>Where, $SMF_{Timber_emission}$ is emission from SMF in tCO₂, H is the volume of harvested timber (m³), WD is wood density (tm⁻³), CF is carbon fraction of 0.47, and BEF is the biomass expansion factor.</p> <p>2. Non-CO₂ emission from fire $L_{fire} = A \times M_B \times C_f \times G_{ef} \times 10^{-3}$</p> <p>(e)</p> <p>Where,</p> <p>(f) L_{fire} is the amount of GHG emissions from fire, in</p>	<p>1. Equation 2.12 (k)</p> <p>2. Equation 2.27</p> <p>3. Equation 2.9</p>

		<p>metric tons of each GHG (e.g., CH₄, N₂O)</p> <p>(g) A is the area burnt, in ha</p> <p>(h) M_B is the mass of fuel available for combustion, in t/ha</p> <p>(i) C_f is the combustion factor, dimensionless</p> <p>(j) G_{ef} is the emission factor, in (g/kg) dry matter burnt.</p> <p>3. Removal from forest growth</p> $SMF_{\text{Removal}} = A_{\text{smf}} \times G_{\text{mean}} \times CF \times 44/12$ <p>Where,</p> <p>SMF_{Removal} is removal by SMF (tCO₂ yr⁻¹), A_{smf} is the area under SMF (ha), G_{mean} is mean annual biomass increment (t d.m ha⁻¹yr⁻¹), CF is carbon fraction, and 44/12 is CO₂-e fraction.</p>	
3	Conservation of carbon stock	<p>1. $Con_{\text{Timber_emission}} = H \times WD \times BEF \times CF \times 44/12$</p> <p>Where, Con_{Timber_emission} is emission from conservation in tCO₂, H is the volume of harvested timber (m³), WD is wood density (tm⁻³), CF is carbon fraction of 0.47, and BEF is the biomass expansion factor.</p> <p>2. Removal from forest growth</p> $Con_{\text{Removal}} = A_{\text{smf}} \times G_{\text{mean}} \times CF \times 44/12$ <p>Where,</p> <p>Con_{Removal} is removal by conservation (tCO₂ yr⁻¹), A_{con} is the area under conservation (ha), G_{mean} is the mean annual biomass increment (t d.m ha⁻¹yr⁻¹), CF is carbon fraction, and 44/12 is CO₂-e fraction</p>	<p>1. Equation 2.12</p> <p>2. Equation 2.9</p>
4	Enhancement of carbon stock	<p>1. Removal from forest growth</p> $Plantation_{\text{tCO}_2\text{-e}} = (\text{Age of plantation (yr)} \times \text{Biomass growth (t d.m ha}^{-1}\text{yr}^{-1}) \times \text{Successful Plantation (ha)} \times .047 \times 44/12)$	<p>Modified by equation of 2.2 and 2.3</p>

Self-Assessment of the FREL and FRL

The development of the FREL and FRL followed a consultative and inclusive process, which was commended by many stakeholders from the Royal Government of Bhutan. They were presented to the REDD+ technical working group, Chief Forestry Officers, Renewable Natural

Resources Gross National Happiness Commission, National Environment Commission Secretariat, the Climate Change Coordination Committee and the National Environmental Commission.

In the self-assessment note, Bhutan’s FREL and FRL are assessed using the four-code indicators: (i) green–significant progress, (ii) yellow–progressing well, further development required, (iii) orange–further development required, and (iv) red–not yet demonstrating progress. Based on the information available and stakeholder consultation, the overall rating for the FREL is GREEN–YELLOW, with a few weaknesses and some areas for improvement.

Linkages with REDD+ Strategy Options and NFMS

The FREL and FRL was developed taking into account the major drivers of deforestation and forest degradation. Table 5.2 describes the linkages among the drivers of deforestation and forest degradation, REDD+ Strategy Options, and the FREL/FRL and NFMS.

Table 5.2: Linkages between REDD+ Strategy Options and the NFMS

Sl. No	Drivers	FREL and FRL	REDD+ Strategy Options	National Forest Monitoring System
1	Drivers of deforestation	Forest land converted to non-forest lands such as cropland, grassland, settlement, and other land are computed for the reference period. These are the result of the drivers of deforestation as defined in table 4.1.	Three of the four REDD+ Strategic Options of <i>climate-smart primary production; integrated land-use planning; and, improved rural livelihoods</i> will enable and address the drivers of deforestation and reduce emissions from deforestation	Through this study, the NFMS aims to identify the main drivers of deforestation and how much forest is being converted annually to other land use. For example, hydropower was regarded as one of the main drivers of deforestation; thus, a separate study was carried out to understand forest loss from hydropower.
2	Drivers of forest degradation	Wood removal (timber harvesting and fuelwood) and forest fire are the main drivers of forest degradation. Emissions from wood removals and forest fires are estimated as part of the FRL and reported.	All four REDD+ Strategic Options will enable and address the drivers of forest degradation and led to reduced emissions from wood removals and forest fires, while	Through this study, the NFMS aimed to understand the dynamic of forest canopy density changes over the period. If canopy density declines

			increasing the carbon stock.	over time, that portion of forest will be regarded as degraded, and the relevant field office will be informed to take appropriate action.
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Gaps and Areas for Further Development under Component 3

The data used for the construction of FRELs and FRLs for Bhutan is based on historical data and does not necessarily represent the true scenario. The deforestation rate is historically very low, and it is most likely that this rate would increase over time as social and economic development activities are increasingly planned and implemented. Furthermore, Landsat imagery, which has a spatial resolution of 30 meters, was used to compute the activity data, thus, actual forest loss may be underestimated. Similarly, most of the emissions are estimated using the Tier 1 approach and actual emission or removals may be underestimated or overestimated. Therefore, there is a need to update the FREL and FRL of Bhutan at the right time to reflect the true condition. Currently, it is expected that the updated FREL/FRL may be available by the end of 2024, when Bhutan submits the first biennial transparency report.

Gaps in the current FREL and FRL:

- Stratification of forest types is not carried out considering the small size of the area undergoing deforestation.
- Spatially explicit maps of forest plantation are not currently available and only plantation statistics were used to develop the FRL. There is no information available on wood removals from plantations.
- Emissions and removals are estimated using the IPCC Approach 2 and Tier 1 methods.
- Prior use is not known for areas brought under plantation and no spatial record of the plantation area is available
- Spatially explicit data on forest damage by fire is not available.

Areas for further development:

- Strengthen the database system.
- Deforestation may be underestimated as the Landsat 7 and 8 with 30-meter spatial resolution was used.
- Develop biomass allometric equations.
- Build capacity and develop carbon density maps across the country.

Improvement of the FREL and FRL will be implemented in line with the action plan described in Table 5.3.

Table 5.3: Action Plan for FREL and FRL Improvement

Action to be taken	Timeli ne	Responsibility		Risk
		Lead	Collaborato r	

Exploring the use of high-resolution remote sensing data to generate a national LULC dataset through advanced technologies and methodologies	2025	FRMD	National Land Commission (NLC)	Lack of financial support to procure high-resolution satellite imagery from the government
Strengthening the Forest Information Reporting and Monitoring System (FIRMS) database to maintain a proper record of timber harvest and plantation	2025	FRMD	All Functional Division and field offices	Lack of technical expert financial support
Strengthening the NFI data management system	2025	FRMD	All Field Offices, NECS	No technical expertise and committed fund
Reducing the inaccessible plots during the next NFI to reduce uncertainties of EF	2032	FRMD	All Functional Division and field offices	Time and financial constraint
Developing additional species-specific biomass allometric model	2024	UWICER	FRMD	
Modeling and mapping carbon density using remote sensing.	2024	FRMD		<ol style="list-style-type: none"> 1. Limited technical capacity 2. Use of SAR data in the absence of LiDAR
Developing spatially explicit fire burnt area maps	2025	FRMD, FPED	All field offices	-
Spatial mapping of plantations with survival percent.	2027	FRMD, SFED	All field offices	-
Improving uncertainty estimates for activity data and EF	2024	FRMD		

Table 5.4: Results of the Assessment for Component 3: Reference Emissions Level/Reference Levels

Assessment Criteria	Progress			
	Significant development	Progressing well, further development required	Further development required	Not yet demonstrating progress
(26) Demonstration of Methodology				
(27) Use of historical data and adjusted for national circumstances				
(28) Technical Feasibility of the Methodological Approach and consistency with UNFCCC/ IPCC and guidelines				

6. Component 4: MONITORING SYSTEM FOR FORESTS AND SAFEGUARDS

6.1 SUBCOMPONENT: 4A. NATIONAL FOREST MONITORING SYSTEM

The R-PP outlined the following activities for implementation: (a) build capacity and develop the NFMS Action Plan, develop Bhutan's NFMS Action Plan, organize NFMS work and capacity building; (b) formalize institutional arrangements for the implementation and management of the NFMS; (c) develop and operationalize the Satellite Land Monitoring System, delineate forest boundaries in the field, and generate the GIS boundary for demonstration activities, build capacity on geospatial data processing and database management, establish a Forest Management Information System and web-GIS platform; (d) complete multipurpose NFI implementation and strengthen data management (develop participatory tools for community forest monitoring, establish a harmonized classification system for land representation, build the capacity of NFI field crews and data analysts, support the NFI process); (e) build national capacity for compiling the GHG inventory for the LULUCF sector; and (f) support NFMS-related research.

Progress and Achievements for Subcomponent 4a: National Forest Monitoring System

As a result of the implementation of the above activities, the following have been achieved:

- The MRV system proposed is consistent with the international system.
- A ground-based forest carbon inventory was adopted.
- RS method was used to generate activity data.
- The GIS/RS lab was established.
- The NFMS and MRV systems have been established in the DoFPS
- Capacity building has been carried out (at the national level) for staff working for the RS/GIS Section.
- Institutional arrangements have been made.

In line with 4/CP.15, 1/CP.16 and 11/CP.19, Department of Forest and Park Services (DoFPS), Ministry of Agriculture and Forests (MoAF) has developed a robust and transparent NFMS.

The national NFMS was developed with the following objectives:

- (a) Monitor the health and state of Bhutan's forests to enable long-term conservation and sustainable forest management and uphold the Constitutional requirement of maintaining 60 percent forest cover in perpetuity.
- (b) Generate accurate and holistic data on forest area and carbon stock changes in a transparent and consistent manner using globally accepted methodologies for national and international reporting.

Based on the objectives, NFMS was further divided into two categories (i) monitoring and (ii) measurement, reporting and verification (MRV). The NFMS is based on a combination of ground measurement through the National Forest Inventory (NFI) and a remote sensing exercise to generate the report on the state of national forests. The NFMS of Bhutan includes four components:

- *Satellite Land Monitoring System (SLMS)*—SLMS is designed to capture activity data resulting from both anthropogenic and natural causes using freely available satellite imagery based on the national definition of forest. Furthermore, SLMS is intended to generate periodic land use and land cover (LULC) maps that detail forest type as well as a canopy density map to supplement the NFI and understand the forest dynamics in Bhutan. *Multipurpose National Forest Inventory (NFI)*—The Bhutan NFI is designed as a multipurpose forest ecosystem health monitoring inventory, which means that it collects information on biodiversity, forest health (pests and diseases), forest disturbance, and soil carbon in addition to timber resource data, using permanent 2424 systematic plots. *National Greenhouse Gas (GHG) Inventory*—Using 2006 IPCC Guidelines for National Greenhouse Gas Inventories, national GHG emission and removal resulting from any anthropogenic activities within the forestry sectors is assessed. All the GHG gases and sources have been identified. *Forest monitoring with associated web-portal*—Forest monitoring helps with archiving and accessing very reliable data on sustainable forest management, community and social forestry, watershed management, nature conservation, and forest health and ecosystems. The information is maintained and disseminated through a robust online database called the Forest Information Reporting and Monitoring System (FIRMS). Patrolling and forestry activities are recorded using a Spatial Monitoring and Reporting Tool (SMART), which supplements FIRMS in providing spatial data. Spatial data is maintained in a geodatabase and shared through a web portal. Furthermore, the Spatial Decision Support System (SDSS), a web-based interactive tool, allows DoFPS to rationalize and monitor the forest area being lost to other developmental activities through the issuance of forestry clearance.

Details of the progress made and achievements in the development of the implementation framework are highlighted below.

Assessment Criterion 29: Documentation of monitoring approach

The documentation on the NFMS in Bhutan started prior to the inception of the REDD+ project, when the first NFI was initiated in 2008. The NFI field manual, the manual for Above Ground Biomass (AGB) and Soil Carbon Analysis, NFI implementation modality, NFI data management protocol are some of the NFI documents that were already in place and which were technically reviewed and accepted through a series of national stakeholders workshops. The inventory design was technically supported and reviewed by Yale University.

Following the development of the National Forest Monitoring Action Plan in 2015, the documentation process for the NFMS was further enhanced. NFMS Action Plans outline the actions that Bhutan must take to receive adequate and predictable support, including financial, technical, and technological assistance, to implement its NFMS for REDD+ activities.

The interpretation of remote sensing data will be done in conjunction with NFI ground data to generate the periodic LULC map. A technical report on the creation of a LULC map to derive activity data and monitor the forest landscape is already in place. Currently, the LULC map is generated using freely available medium-resolution satellite images, such as Landsat, but plans are in place to use high-resolution satellite images in the future. To ensure the consistency of LULC map development, the data source and technique were technically examined and accepted at a national stakeholder workshop, and it was agreed that Landsat, which is free and most appropriate at the national level, will be utilized in the future. The methodology for developing LULC maps was also reviewed by ICIMOD and FAO.

The DoFPS publishes an annual *Forestry Facts and Figures* (www.dofps.gov.bt) that summarizes the activities of sustainable forest management, community and social forestry, watershed management, nature conservation, forest health and ecosystems, and forestry and wildlife offenses. The FIRMS database⁸ (<https://firms.dofps.gov.bt/>) is used to generate the forestry data. DoFPS specifically uses this information to monitor and improve forest and wildlife management and conservation initiatives. In addition, researchers and policymakers make extensive use of this data.

The NFMS web-portal⁹ (<http://www.bhutan-nfms.org/>) facilitates transparent data sharing at the national and international levels. To ensure long-term, cost-effective maintenance, the spatial database and web interface are built on open-source software. The web-portal contains national datasets that have been categorized. It also includes global datasets about Bhutan.

GHG emissions and removal in the forestry sector were estimated using internationally accepted GFOI methodology and the 2006 IPCC guidelines. Both the FREL/FRL and GHG inventory for the Second National Communication were built using the same guidelines. All pools and gases for GHG estimation have been recognized at the national scale, and they are in line with the development of the FREL/FRL and GHG inventory for the Second National Communication.

The uncertainty indicated in the FREL and FRL was estimated using the error propagation method, which combined the uncertainty of activity data and emission factors.¹⁰ Other sources of uncertainty will be explored and estimated in the future. The uncertainty will be estimated in accordance with the IPCC's Good Practice Guidance and Uncertainty Management in National GreenHouse Gas Inventories ([Publications - IPCC-TFI \(iges.or.jp\)](http://www.iges.or.jp/public/2000gl/)) published in 2000.

Assessment Criterion 30: Demonstration of early system implementation

The first NFI was completed in 2015, with two volumes of the report produced. Volume 1 of the NFI includes information on tree metrics (tree counts, basal area, and growing stock) at the national and subnational levels. Volume II of the NFI provides information on biomass and carbon at the national and subnational levels. A second NFI is currently being carried out. Unlike the first NFI, where all the field measurement activities were centrally carried out, the second NFI is more decentralized. Overall, activities are centrally coordinated, but field measurements are coordinated by divisional field offices. As the NFI is a multipurpose inventory, different stakeholders are involved in collection and analysis of NFI data.

The Ministry of Agriculture and Forests was responsible for generating periodic national LULC maps. Although the mandate for producing LULC maps now lies with the National Land Commission Secretariat (NLC), DoFPS will still generate forest type maps to assess forest cover change, in collaboration with the NLC. At the national level, the Ministry has developed three LULC maps so far. The first LULC was created in 1995 using aerial photography and SPOT imagery. The second LULC was created in 2010 and was generated from ALOS

⁸ FIRMS database: <https://firms.dofps.gov.bt/>

⁹ NFMS web-portal: <http://www.bhutan-nfms.org/>

¹⁰ Royal Government of Bhutan (2020) Bhutan's Proposed National Forest Reference Emission Level and National Forest Reference Level Submission for technical assessment to UNFCCC. https://redd.unfccc.int/files/final_bhutan_frel_frl_20201207_for_webposting.pdf

imagery. The third and most recent LULC was created in 2016 using Landsat 8, led by DoFPS as part of REDD+ activities.

Bhutan decided and settled on a national FREL and FRL; thus, the data used for the NFI and LULC are generated and available at the national level. Having FREL and FRL at the national level avoids the issue of internal displacement or leakage of emissions and facilitates the assessment of the impact of national-level policies and measures. Therefore, the development of a FREL and FRL at the subnational level for Bhutan is neither justified nor necessary.

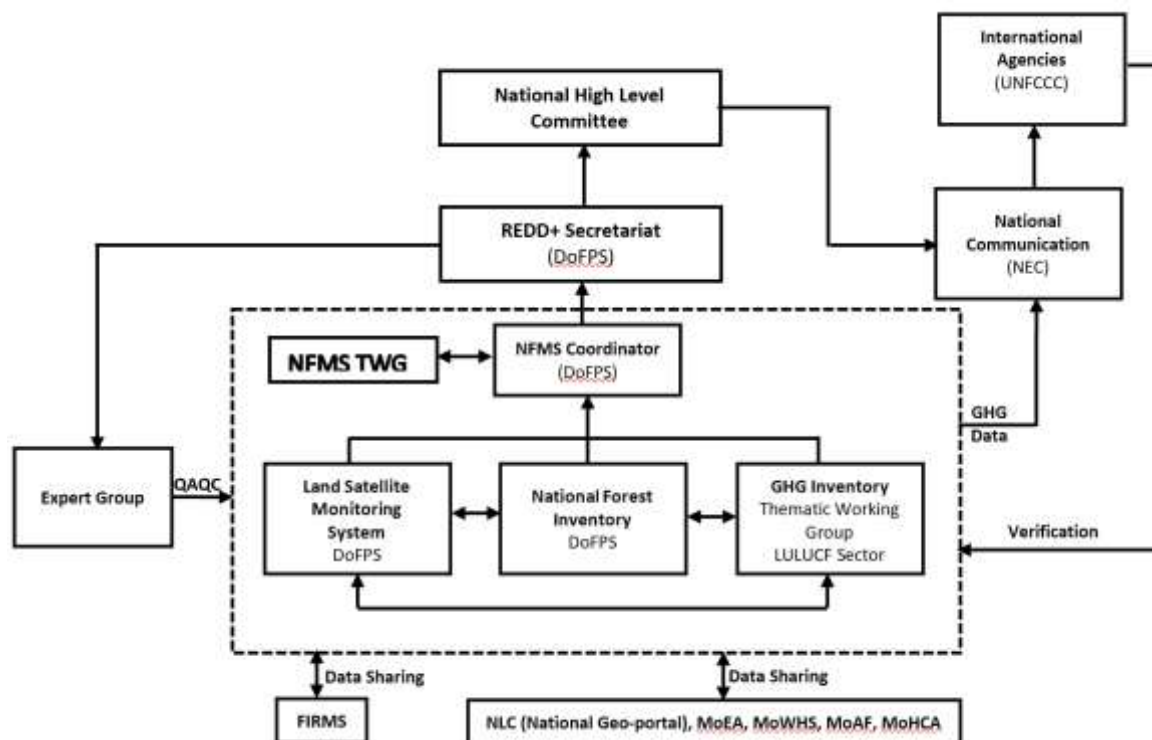
Activity data for FREL and FRL were generated using the Global Forest Change (GFC) Product, which was also based on Landsat imagery. Since the GFC product was produced at the pixel level, in order to align the pixel-level analysis with the definition of forest in Bhutan, fine scale-level data on disturbance (pixel level gain and losses) were aggregated to the minimum mapping unit, resulting in a larger-scale element. At a national stakeholder workshop, Bhutan agreed to generate the activity data and develop forest type maps using freely available Landsat imagery. This will ensure consistency in comparing the changes in forest and carbon content (and associated GHG emissions) relative to the baseline estimates used for FREL and FRL.

Prior to the implementation of the first NFI, staff involved in the NFI received capacity building on ground data collection, data cleansing, and analysis. Similar capacity building has been provided to the foresters involved in the second, ongoing NFI. This ensures that Bhutan's foresters can now carry out the NFI using current technology. Similarly, GIS and remote sensing technical experts were trained to generate the land use and land cover map and conduct the change analysis using currently available tools. Furthermore, MoAF staff prepared the FREL and FRL using a combination of NFI and remote sensing technology. This ensures that Bhutan has the capacity to monitor its priority REDD+ activities.

Assessment Criterion 31: Institutional arrangements and capacities

DoFPS is the overall coordinator for REDD+ and NFMS implementation in Bhutan. For the smooth operation of the NFMS, a well-defined institutional system has already been established. The institutional framework involves several stakeholders. DoFPS will be responsible for the forestry sector's Satellite Land Monitoring System (SLMS), NFI, and GHG inventory. The GHG inventory for the forestry sector will be conducted in conjunction with the NEC, which also serves as the nodal agency for international reporting, such as the National Communication to the UNFCCC. Data will be shared with other national stakeholders via a National Geoportal managed by NLC, and the NFMS geoportal will be used for worldwide data sharing. Figure 6.1 depicts institutional arrangements for the NFMS in Bhutan, for which the DoFPS is the overall implementation coordinator.

Figure 6.1: Institutional Arrangement for FMS and MRV for the REDD+ Program in Bhutan



Agency	Roles
Department of Forests and Park Services (DoFPS)	<ul style="list-style-type: none"> Coordinate the overall REDD+ activities Form the NFMS Technical Working Groups Carry out periodic land use and land cover change analysis using remote sensing technology Carry out periodic NFI Carry out periodic GHG inventory limited to forestry sector Share the data through FIRMS Ensure the smooth implementation of NFMS
NFMS TWG	<ul style="list-style-type: none"> Advise the technical working group on the generation of data and reporting pertaining to REDD+ activities
NLC, MoEA, MoWHS	<ul style="list-style-type: none"> Share the data with DoFPS that should be taken into consideration while monitoring REDD+ activities
Expert Group	<ul style="list-style-type: none"> Ensure the quality of the data and reports developed by the technical working group
National High-Level Committee	<ul style="list-style-type: none"> Technically review the tasks carried out by the DoFPS for international reporting

National Environment Commission	<ul style="list-style-type: none"> • National Communication • GHG reporting
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Most capacity building for the implementation of NFI, SLMS, and GHG Inventory was developed during the REDD+ readiness phase; however, a strategy is already in place to expand human resource capacity building in the future in line with tool and technology advancements. The necessary equipment, hardware, and software have already been purchased and are operational. However, equipment, gear, and software may need to be updated or improved in the future. The MRV document (DoFPS, 2022) has also been developed to guide Bhutan in monitoring forest cover and to monitor the impacts of implementation of the REDD+ strategy.

Gaps and Areas for Further Development under Subcomponent 4a

Gaps:

- Demonstration and monitoring of early system implementation
- Institutional capacity is inadequate at the district level and must be developed for all staff working at this level.

Areas for further development:

- Provide capacity building on NFMS at the field office by the relevant functional division.
- Generate annual forest cover and canopy density maps using medium- to high-resolution satellite imagery to monitor annual forest cover changes at the national level.
- Enhance the geoportal with analysis capabilities.
- Develop a database for the NFI and integrate it with the NFMS.

Table 6.1: Results of the Self-Assessment for Subcomponent 4a. National Forest Monitoring System

Assessment Criteria	Progress				Remarks
	Significant Progress	Progressing well, further development required	Further development required	Not yet demonstrating progress	
(29) Documentation of monitoring approach					

(30) Demonstration of early system implementation					
(31) Institutional arrangements and capacities					

6.2 SUBCOMPONENT: 4B. INFORMATION SYSTEM FOR MULTIPLE BENEFITS, OTHER IMPACTS, GOVERNANCE, AND SAFEGUARDS

The following activities were outlined in the R-PP for implementation as part of the readiness process: (a) identify non-carbon aspects, share information, and define mandates (stakeholder consultation); (b) identify priority non-carbon aspects of REDD+ implementation; (c) develop an SIS; and (d) develop methodologies and establish a system for assessing performance related to REDD+ co-benefits (establish participatory monitoring process, reference levels, and indicators for REDD+ co-benefits).

The following outputs are expected from the implementation of the above-mentioned activities: (a) the SIS and co-benefit monitoring systems have been established and made operational; (b) non-carbon aspects of REDD+ activities along with their impacts have been analyzed; (c) organizational mandates pertaining to non-carbon aspects of REDD+ have been assigned; (d) a transparent information-sharing platform has been developed; and (e) indicators to assess co-benefits have been defined and reference levels established, and a monitoring system is in place.

Progress and Achievements for Subcomponent 4b: Information System for Multiple Benefits, Other Impacts, Governance, and Safeguards

Through the implementation of the above-mentioned activities, the following have been achieved:

- Through the SESA study, the social and environmental issues have been identified.
- Non-carbon benefits have been identified.
- The NFMS has been developed and instituted for carbon benefits, and the SIS for non-carbon benefits.
- Institutional arrangements for monitoring both carbon and non-carbon benefits has been established.
- The capacity-development plan has been established as part of the REDD+ investment plan.

Details of the progress made and achievements in the development of the implementation framework are highlighted below:

Assessment Criterion 32: Identification of relevant non-carbon aspects, and social and environmental issues

The RGoB recognizes that social and environmental safeguards are critical to help ensure that planned activities are successful, as well as to reduce conflict, optimize benefits, and ensure that activities do not result in unintentional harm to people or ecosystems. The Constitution of Bhutan mandates that the government should maintain 60 percent of the country’s land under forest cover. The National Forest Policy (2011) emphasizes the protection, conservation, sustainable management, and utilization of forest resources and, therefore, accords high priority to non-carbon benefits, including social and environmental concerns. Environmental conservation is one of the pillars of GNH and, therefore, any benefit that may arise from the implementation of the REDD+ program will contribute to achieving the wellbeing and happiness of the Bhutanese people. These sets of legislation will help minimize or mitigate harm to people and the environment and extract the most benefit from development activities, including REDD+ activities, for people of all ethnic groups throughout the country. The five-year development plan, which integrates and operationalizes the policies, will also include indicators for monitoring performance, including of non-carbon benefits.

The non-carbon benefits are diverse, ranging from improved livelihoods, biodiversity conservation, ecosystem services, and strengthening of institutional capacity to implement activities. The monitoring system is expected to cover a broad array of parameters that will be reflected in carbon benefits in terms of emissions reduction and multiple other non-carbon benefits associated with the management of forest resources.

Bhutan’s National REDD+ Strategy, SESA, and ESMF consider the World Bank Social and Environmental Safeguards and Cancun Safeguards in responding to the social and environmental issues. They recommend measures for reducing or mitigating the risks and enhancing the benefits and address the social and environmental risks.

Furthermore, a study on the economic value of forest ecosystem services was undertaken to determine the realized value of forest ecosystem goods and services. The study concluded that the economic value of ecosystem services in Bhutan ranges between US\$440 million to US\$1,293 million per year, indicating a substantive contribution of ecosystem services to the economy (see table 6.2). Provisioning services represent the highest values, followed by recreation and regulating services. Currently, forests are accounted for in economic reports in relation to their contribution to timber, firewood, and non-wood forest products, alongside agriculture and livestock (see NSB-2017). In 2015, the contribution of forest ecosystem services to GDP was approximately US\$40 million, representing about 1.9 percent of national wealth. This study showed that the contribution of forests and associated ecosystems is much larger, with values that range between 21 percent to 63 percent of the national GDP, showing the linkages to key economic processes such as hydroelectricity and tourism, in addition to its importance to local economies in terms of energy, food, and water quantity and quality.

Table 6.2: Economic Value of Selected Ecosystem Services in Bhutan

Economic values (US\$ million per year)			Estimated from model (Costing Nature, using national data)
Low	Medium	High	

Provisioning services	\$355	\$644	\$973	\$1031
Timber	\$25	\$49	\$94	\$189
Domestic water	\$1	\$2	\$7	\$74
Fodder for livestock	\$82	\$99	\$136	\$92
NWFP	\$7	\$7	\$8	\$6
Energy				
Hydroelectricity	\$239	\$482	\$723	\$657
Firewood	\$2	\$6	\$6	\$13
Cultural and recreation services	\$77	\$142.5	\$216	\$216
Tourism, Nature based	\$43	\$108	\$182	\$182
Biodiversity (investment flows)	\$34	\$34	\$34	\$34
Regulating and climate	\$9	\$23	\$44	\$46
Carbon	\$7	\$17	\$34	\$34
Water quality (sediment removal)	\$4	\$8	\$12	\$12
Disease and pest control (Human-wildlife conflict)	-\$1.1	-\$1.3	-\$1.3	-\$0.003
Total	\$441	\$810	\$1,233	\$1,293

Assessment Criterion 33: Monitoring, reporting and information sharing

Bhutan has designed a safeguard information system (SIS) that will ensure transparent information sharing with various stakeholders on REDD+ implementation. Bhutan's SIS outlines the framework and the institutional arrangement for collecting, analyzing, and disseminating information, including reporting to relevant platforms and conventions. The SIS will be operationalized once implementation of the REDD+ Strategy starts. The REDD+ Secretariat will collect data in collaboration with other stakeholders, including private sector companies, government bodies, and communities, through their designated Safeguard Focal Point in charge of the respective PAMs, as a component of their monitoring and reporting responsibilities under the implementation of REDD+ interventions. Information will be compiled regularly from the REDD+ PAM implementing agencies as well as through other existing complementary sources for analysis and reporting purposes and to ensure that implementation of REDD+ interventions has been consistent with the UNFCCC's and other partners' safeguard requirements. Specific reporting templates have been used for this purpose (DoFPS, 2019).

One of the key sources of information for non-carbon benefits will be the FRIMS (Forest Resource Information Management System). FRIMS is an online database system designed for collecting all information and data regarding forest conservation and forest resource utilization nationwide. It is, therefore, the primary data repository for forestry-related information. Based on the information generated by FRIMS, annual forestry facts and figures are published as part of the annual RNR statistical database. FRIMS contains various modules covering wildlife conservation, timber harvesting, watershed management, payment for environmental services, non-wood forest products, community forestry, human-wildlife conflicts, forest offences, forestry clearance, etc. and therefore includes all the management regimes and services produced by the forest department.

The planning and M&E frameworks for the government's five-year development plans will be used to monitor and evaluate the impacts of REDD+ activities at the sectoral level, thus contributing to the national monitoring and reporting system illustrated in Figure 6.1. The REDD+ PAMs are integrated into the FYP of the MoAF; therefore, the monitoring and evaluation framework of the FYP will be used to monitor the impacts of REDD+ implementation. The Policy and Planning Division (PPD), which coordinates the overall planning of the 12th FYP at the Ministry level, conducts the mid-term review and the terminal evaluation at the end of every five-year plan. This, as well as the periodic monitoring by the respective REDD+ PAM implementing agencies, will provide guidance to ensure that REDD+ strategy implementation achieves its intended purpose in a manner that is consistent with the safeguard requirements, thereby enhancing benefits and mitigating the risks associated with REDD+ implementation. This will also ensure information sharing on non-carbon benefits and the social and environmental aspects of REDD+.

Building on the database system for organizing and reporting data on GHG emissions and removals, the NFMS will adopt procedures for monitoring and reporting on non-carbon benefits and safeguards linking and mobilizing the existing FRIMS and FYP frameworks, for example. The NFMS web portal will organize links to share information on non-carbon benefits and social and environmental issues.

Valuation of ecosystem services within protected areas is also planned, and a development framework for the valuation is under way. Once the valuation is conducted and institutionalized, non-carbon benefits from the implementation of any plan and program under REDD+ will be reported.

Assessment Criterion 34: Institutional arrangements and capacities

The NFMS (Component 4a) was designed based on the initial institutional arrangement proposed in the NFMS Action Plan and after discussion and validation workshops with stakeholders. The final design, which includes FRMIS, helps integrate both carbon and non-carbon benefits. The capacities of the technical team have been built while generating the baseline information for the NFMS and MRV through LULC, SLMS, NFI, FRIMS and other related systems.

The NFMS is currently monitoring Bhutan’s forest cover and changes in forest stock every 10 years. The NFMS framework has identified the institutions to monitor carbon components, while non-carbon benefits are covered under the SIS framework of REDD+ for Bhutan with defined roles and responsibilities. However, the roles need to be strengthened through operationalization of the framework and improvements during implementation. Additional capacity building may be required during the implementation process.

Relevant stakeholders and their mandates and tasks for non-carbon benefits are reflected in table 6.3, while detailed roles and responsibilities are covered in the section 2.2 of the SIS framework document for the REDD+ of Bhutan (<https://www.dofps.gov.bt/documents/>).

Table 6.3: Institutional Arrangements and their Mandates for Non-Carbon Benefits

#	Institutions/Stakeholders	Tasks/Mandates
1	Royal Audit Authority (RAA)	Ensure the accountability of civil servants and public budgets through compliance or regulatory audits and performance audits
2	Office of the Attorney General (OAG)	Ensure the accountability of civil servants and public budgets and enable access to justice throughout REDD+ implementation
3	National Land Commission Secretariat (NLCS)	Recognize the rights over forest land throughout REDD+ implementation
4	Dzongkhag and Gewog Administration	Recognize the rights over forest land and ensure access to justice throughout REDD+ strategy implementation
5	DoFPS	Protect and conserve natural forests and biological diversity; ensure REDD+ implementation does not lead to or incentivize the conversion of natural forests; and recognize and enhance ecological, biological, climatic and socioeconomic benefits provided by forests.
6	National Statistics Bureau (NSB)	Ensure equitable distribution of benefits and promote gender equality throughout REDD+ implementation through PHCB, BLSS, economic census and publication of national reports (statistical year books, national accounts report, etc.)
7	GNHC	Ensure cross-sectoral coordination during design and implementation of REDD+ strategy and resulting PAMs, proposals to implement REDD+ are aligned with government policies and priorities and safeguard the interests of citizens.
8	National Biodiversity Centre (NBC)	Recognize and protect traditional knowledge, promote access and benefit sharing from the use of biological resources

The REDD+ Project supported the capacity building of key government staff through training, workshops and seminars. Numerous engagement and outreach activities have also been conducted, as presented in table 3.3. It will be important to continue the momentum gained so far and continue building capacity and engaging with various stakeholders to support conservation benefits.

Table 6.4: Results of the Self-Assessment for Component 4b: Information System for Multiple Benefits, Other Impacts, Governance, and Safeguards

Assessment Criteria	Progress				Remarks
	Significant Progress	Progressing well, further development required	Further development required	Not yet demonstrating progress	
(32) Identification of relevant non-carbon aspects, and social and environmental issues					
(33) Monitoring, reporting and information sharing					
(34) Institutional arrangements and capacities					

7. REPORT ON THE MULTISTAKEHOLDER SELF-ASSESSMENT PROCESS

7.1 PREPARING FOR THE ASSESSMENT

The team conducting the consultations and assessments consisted of relevant officials from WMD and FRMD. The organizing team prepared the background materials and logistical arrangements for conducting the workshops. Questionnaires were developed according to the FCPF assessment framework guidelines, and participants were asked to provide their ratings against each criterion in the online survey app. Consultation workshops were held with stakeholders across the country at two locations, Thimphu District on May 30–31, 2022, and Bumthang District on June 2–3, 2022. Participants included District Agriculture Officers, Livestock Officers, Chief Forestry Officers and the staff of territorial forest divisions, national parks, and wildlife sanctuaries. Participants from all 20 districts attended the workshops and participated in the assessment rating process. In addition, the two most prominent CSOs/NGOs

that work on natural resources, the Tarayana Foundation and the Royal Society for Protection of Nature, also participated in the workshops.

7.2 CONDUCTING THE ASSESSMENT

The self-assessment was conducted with the involvement of stakeholders from all 20 districts in the country. The assessment was participatory and included different stakeholders who were involved in the implementation of readiness activities and local participants. At the beginning of the workshop, the team explained the REDD+ Program in detail, the benefits of implementing REDD+ activities in the field, and the self- assessment process. The team presented the R-Package components and subcomponents, and the questions for the assessment were sent through an online application to all participants. Respondents submitted the assessment ratings instantly. The team highlighted the achievements by showcasing various documents and presenting videos and other products stemming from the project.

7.3 SELF-ASSESSMENT WORKSHOP PARTICIPANTS

A total of 104 participants attended the workshops held at two locations. Because of the ongoing reforms, there was limited opportunity for workshops and training during the post-COVID recovery period, hence, few consultations were conducted. Participants were drawn from all 20 districts in the country, and CSOs and NGOs like the Tarayana Foundation and the Royal Society for the Protection of Nature also participated in the assessment workshops. About 5 percent of the participants were from the CSOs/NGOs. Extension workers from other sectors that work closely with rural communities from all districts participated in the workshop.

Table 7.1: Consultation Workshop Participants

Location	Total	Public/State (%)	CSO/NGOs (%)	Male (%)	Female (%)
Thimphu	51	94	6	92	8
Bumthang	53	96	4	87	13

7.4 SUMMARY OF WORKSHOP PARTICIPANTS

Overall, 24 of 34 assessment criteria received a GREEN rating, which indicates “significant progress was made,” and 10 criteria received a YELLOW rating, meaning “progressing well but further development required.” No criteria received an ORANGE or RED rating, indicating that the stakeholders were not satisfied with the achievements of the REDD+ Readiness process (table 7.2). Nevertheless, the stakeholders indicated more could be done in the area of safeguards, outreach, and consultations, particularly engagement with the agriculture and livestock sectors. It was also observed that the benefit-sharing arrangement may need further work during the implementation of the REDD+ strategy to mitigate possible social impacts. Similarly, rural-urban migration and a shortage of farm labor should be included in any future analytical studies.

Table 7.2: Participatory Ranking for Components and Subcomponents

COMPONENTS	SUBCOMPONENTS	PARTICIPATORY RANKING	REMARKS
COMPONENT 1: READINESS	Subcomponent 1a: REDD national		Significant progress

ORGANIZATION & CONSULTATION	management mechanisms.		
	Subcomponent 1b. Consultation, participation, and outreach		Significant progress
Component 1 Overall			Significant progress
COMPONENT 2: REDD+ STRATEGY PREPARATION	Subcomponent 2a. Land use evaluation, forest policy and governance		Significant progress
	Subcomponent 2b. REDD+ Strategy Options.		Significant progress
	Subcomponent 2c: Implementation framework		Significant progress
	Subcomponent 2d: Social and environmental impacts		Progressing well, further development required
Component 2 Overall			Significant progress
Component 3: Reference Emissions Level/Reference Levels			Significant progress
COMPONENT 4: MONITORING SYSTEM FOR FORESTS & SAFEGUARDS	Subcomponent 4a: National Forest Monitoring System.		Significant progress
	Subcomponent 4b: Information System for Multiple Benefits, Other Impacts, Governance, and Safeguards		Significant progress
Component 4 overall			Significant progress

7.5 FEEDBACK PROVIDED BY STAKEHOLDERS DURING THE ASSESSMENT WORKSHOPS

The workshops were carried out in a participatory manner with informal exchanges of views and suggestions. Participants acknowledged the tremendous work that the project has undertaken and many expressed that the grant has helped the department and the nation in the most crucial stage of building the information base through the NFI and LULC. It also enhanced service delivery to the public through the development of online systems like the Online Forestry Clearance and Check Post management systems and the Spatial Decision Support System. Participants also shared that one of the major achievements of the project is that it has helped raise awareness and ensure national and international outreach to showcase the work done by Bhutan on forest management and environmental conservation, while also contributing to meeting national as well as international commitments.

The following are examples of feedback from the workshop participants:

- Many recent initiatives like the million-fruit tree plantation, agroforestry, and soil and land management measures contribute to carbon sequestration and need to be adequately captured in such documents. This is because such initiatives involve active participation of local people, which will ensure its sustainability.
- There is a shortage of mushroom billets, and there is more pressure on oak forests because of commercialization of mushroom cultivation. The need to carry out oak plantations by households should be featured among the potential areas for future plantations.
- There is a need to ensure adequate compliance monitoring in case of forest is cleared for development activities, such as maintaining a 30-meter buffer for streams and rivers.
- With the increase in usage of pipe systems for irrigation, water sources are tapped fully without leaving any water or seepage for wild animals. This is a cause of concern as human-wildlife conflicts are already an issue with more habitat fragmentation, intensive collection of non-wood forest products (including wild fruits), among other impacts. This increase in water usage for irrigation will further aggravate the issue, as wild animals will come to villages in search of water.
- The practice of community forestry management has helped immensely in protecting and conserving the forests resources surrounding communities and has generated income. Such community forest management practices need additional support.
- The issue of waste also needs to be highlighted as it also leads to degradation of the environment.
- There is a need to ensure monitoring, as illegal timber harvesting is a serious concern in some places.
- Concerns were raised about plantations created in forest areas used for grazing. Hence, new grazing areas need to be found, leading to more degradation. If plantation areas are also used for grazing, this may cause the failure of plantations since livestock roam freely, feeding on new growth. Safeguards provisions will address this concern, and the sites for plantations should be selected and protected, in consultation with local communities
- Initiatives like self-help groups for improving stall feeding also need to be included. These have a positive impact on livelihoods and reduce pressure on forests.
- Bamboo plantations need to be considered to improve carbon sequestration, while also improving livelihoods, since bamboo can be used for many activities, including as a timber substitute in the construction sector. Activities could include building/using a common facility where communities can treat the bamboo and improve the value chain.
- There is a need to facilitate land exchange from forested areas to low forested areas, which could help reduce deforestation.
- Collaboration with the agriculture sector could be further strengthened to increase carbon sequestration and soil organic carbon, for example, in fruit orchards.
- Compensation is needed for forest loss due to development projects, for example, hydropower. The existing regulations already provide for compensatory plantations from hydropower and mining projects.
- Queries were raised about how carbon stored in the form of harvested timber in buildings and other structures are taken into account. Since there was great uncertainty

in estimating carbon in wood products, this was not included in the current FREL/FRL. This can be improved in the future.

- Some deforested areas, such as those used for hydropower, rejuvenate and reforest naturally. Therefore, concern was raised about how the FREL/FRL will take this into account. It was explained that the area of forest gain is accounted in the FRL.
- Concern was also raised about whether Bhutan will be able to fulfill the emission reduction target proposed in its FREL of 0.5 million metric tons of emissions. It was explained that 0.5 million metric tons of emissions is the baseline after adjusting for high forest/low deforestation (HFLD), which has already taken into account any future developments.

7.6 SELF-ASSESSMENT (VALIDATION WORKSHOP)

Validation of the self-assessment was carried out at the department level by presenting the R- Package document to the Technical Advisory Committee. The participants agreed that many milestone activities have been implemented through the REDD+ readiness project. The project filled the department's financial resources gap over two consecutive five-year plans and enabled the department to bridge the information gaps and strengthen its institutional capacity for improved governance and continued engagement of stakeholders in forest resource management. The capacity built in the process of conducting the National Forest Inventory, in preparation of Bhutan's FREL/FRL and Land Use Land Cover mapping exercise, represents one of the highlights of the project, establishing a mechanism to monitor forest cover changes and lay the foundation for improved forest management and governance. The department now has the necessary infrastructure (hardware and software) and the human resources to undertake highly technical works requiring multiple skills, which has been made possible through the project. As Bhutan enters the post-COVID era, where there is considerable pressure on forest resources for economic recovery, the information, technology, and capacity built through the grant will go a long way toward enabling the department to enhance the delivery of its services and to continue to conserve its rich and pristine forests. This will help Bhutan meet its obligation to contribute to lowering global carbon emissions and achieving the sustainable development agenda, while responding to commitments under the Nationally Determined Contributions.

APPENDIXES

Appendix A: Bibliography

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Appendix B: List of Meetings, Workshops, and Other Stakeholder Consultations

Sl · No	Name of workshop/training/consult ation workshop	Name of office/agency	Total participan ts	Mal e	Femal e	Date/Ye ar
1	REDD+ Strategy consultation workshops	WMD	1229	1059	170	September to December 2018
2	Workshop on REDD+ Strategy Options, policies and measures conducted by the Tarayana Foundation	WMD	1313	564	749	2018
3	REDD+ SESA Workshop	WMD		49	11	January 24-25, 2018
4	Identifying the risks and benefits of the REDD+ Strategy Options and PAMs	WMD	60			May 8-10, 2018
5	Presentation of the FREL/FRL to the RNR-GNHC committee	WMD	15	10	5	November 15, 2018
6	Stakeholder Consultation workshop on Forest Plantation Strategy Revision	SFED, Plantation Section	45	41	4	May 2019
7	Training on Open Street Mapping (OSM) for survey and mapping of barren and degraded areas in the country imparted to Divisions/Parks focal staffs	SFED, Plantation Section	35	34	1	Jun 2019
8	International Trade Fair at Greater Noida (forestry official and people from WBIs)	FRMD, field Divisions and Wood-based industries	27	27		March 13-16, 2019
9	FGRM consultation workshop, Eastern Region Druk Deothjung Resort, Trashigang	WMD	100	84	16	October 7-10, 2019
10	FGRM Consultation workshop, Central Region Kuku Grand, Gelephu	WMD	87	73	14	November 13-16, 2019

11	FGRM Consultation workshop, Western Region Tashi Namgay Grand, Phuentsholing	WMD	108	90	18	November 22-25, 2019
12	FGRM Inception and Methodology discussions	WMD	18	11	7	June 7, 2019
13	REDD+ Strategy and Action plan presentation to the Department of Forests	WMD	38	35	3	June 29- July 1, 2019
14	REDD+ Safeguard framework review workshop to review the final documents of SESA, ESMF and SIS	WMD	15	11	4	May 21-24, 2019
15	REDD+ Safeguard workshop to discuss the ESMF and SIS	WMD	27	22	5	February 27 – March 1, 2019
16	REDD+ Strategy review meeting	WMD	24	18	6	November 14 - 17, 2019
17	REDD+ workplan and planning discussion	DoFPS	61	48	13	August 26 - th, 2019
	in-country training	WMD	76	64	21	2019
18	Finalization of the Non-wood Forests products strategy revision		68	61	7	August 28, 2019
19	Public consultation meeting for development of Local Forest Management plan	Dagana	117	76	41	October 17 - 19, 2019
20	Pedagogy Course ToT - M1 - Skill	UWICER-DOFPS/DTE, MoLHR	18	16	2	January 14-26 2019
21	Pedagogy Course ToT - M2 - Knowledge	UWICER-DOFPS/DTE, MoLHR	8	7	1	February 25 - March 9 2019
22	Basic of GPS and GIS	UWICER-DOFPS	29	20	9	April 1-6 2019
23	Pedagogy Course ToT - M3 - Visualization	UWICER-DOFPS/DTE, MoLHR	7	6	1	April 8-20 2019

24	Silviculture for Foresters	UWICER-DOFPS	22	19	3	April 16-21 2019
25	Pedagogy Course ToT - M4 - Evaluation	UWICER-DOFPS/DTE, MoLHR	7	6	1	May 27 - June 8 2019
26	Intermediate GIS	UWICER-DOFPS	18	12	6	June 24-28 2019
27	community forest and non-wood		249	122	127	2019
28	PRA meeting		152	62	90	2019
29	Awareness waste mgt		994	464	530	2019
30	in house training and demonstration		631	341	290	2019
31	Waste awareness	Wangdue phodrang	540	227	313	2019
32	Waste cleaning campaign	Wangdue phodrang	408	236	172	2019
33	Consultation workshop on the findings of Survey and mapping of Barren/degraded area in the country	SFED, Plantation Section				October 2020
34	International Trade Fair at Bengaluru, India (forestry staff and people from WBIs)		5	5		February 27–March 2, 2020
35	Waste Cleaning campaign and awareness conducted in Kazhi, Phangyuel and Nyisho Gewogs under Baychu Watershed,	WangduePhodrang	408	236	172	December 9 and February 12, 2020
36	Community forest management planning training for forestry staff		45	40	5	April 28-30, 2020
37	Basic of GPS and GIS	UWICER-DOFPS	23	22	1	February 8-14, 2020
38	NWFP group training		35	17	18	2020
39	Ecotourism mgt. training	Wangdue TFD	96	38	58	2020
40	Sensitization/awareness	Punakha and Wangdue	42	30	12	2020
41	Regeneration survey in Themnangbi-Jaibab	Mongar Dzongkhag	50	45	5	2020

42	Development of Zimrong watershed management plan	Mongar	79	50	29	2020
43	Operational plan developed for 3 FMUs		50	48	2	2020
44	Development of scientific local volume table for Rongmachu FMU and Lingmethang FMU		56	50	6	2020
45	Forest management and planning awareness and training	Paro	34	31	3	2020
46	Training conducted for the farmers on CFMG revision plan, Pakshika, BONGO	Gedu	37	22	15	2020
47	Training conducted for the farmers on CFMG revision plan, Chasilakha, Bongo	Gedu	17	7	10	2020
48	Forest fire management training, Chapcha gewog	Gedu	155	89	66	2020
49	Forest fire management training, Bjabchho gewog	Gedu	139	85	54	2020
50	Local Forest Management plan consultation meeting, Getana	Gedu	40	35	5	2020
51	Forest management and planning awareness and training	Pemagatshel	30	28	2	2020
52	Developed the LFMP and surveyed under Decheling Gewog	Pemagatshel	29	27	2	2020
53	Training on plan writing, data collection, compilation and on resource inventory		12	10	2	2020
54	31 household involved in the consultation meeting		31	25	6	2020
55	Stakeholder meeting (DcFMU staff, Division staff, NRDCL staff, Gewog staff and few communities)	Trashigang	19	18	1	2020
56	Consultation meeting for the development on LFMP Gomdhar gewog		50	40	10	2020

57	Awareness on forest fire, waste management, climate change, ETC	Bumthang	100	30	70	2020
58	Training on forest fire management groups and Dzongkhag level consultation	Bumthang	214	25	189	2020
59	Developed operational plan, preparation and review of Rodungla, Dawathang, Kharshong and Chendibji FMUS	Bumthang	42	38	4	2020
60	Training on Basic GPS and GIS	UWICER	25	23	2	2020
61	Public consultation and awareness meeting with local communities under Chang Gewog	Thimphu	85	35	50	2020
62	Public consultation and awareness meeting with local communities under Mewang Gewog	Thimphu	159	65	94	2020
63	Meeting on operational planning	Thimphu	10	6	4	2020
64	Forest management unit level committee meeting	Thimphu	17	9	8	2020
65	Interim Framework revision workshop in Pemagatshel	SFED	62	53	9	October 2021
66	Interim Framework revision workshop in Jomotshangkha Wildlife Sanctuary	SFED	49	40	9	October and November, 2021
67	Training workshop on Nardostachys grandiflora(Pangpoe) data analysis and report writing	SFED	25	22	3	November 2021
68	Training on conduct of National Forest Inventory 2, Druk Deothjung hotel, Trashigang (Trashigang, Mongar, BWS, SWS)	FRMD	44	41	3	April 5–10, 2021
69	Training on conduct of National Forest Inventory 2, Kaila Guest House, Bumthang	FRMD	38	33	5	April 12-17, 2021

	(WCNP, Bumthang, Zhemgang)					
70	Training on conduct of National Forest Inventory 2, Punakha Residency, Khuruthang, Punakha (Dagana, Thimphu, Wangdi, JSWNP)	FRMD	38	34	4	April 19-24, 2021
71	Training on conduct of National Forest Inventory 2, Drubchhu Resort, Lobesa, Punakha (Gedu, Paro, Tsirang, JKSNR)	FRMD	41	36	5	April 26-May 1, 2021
72	Training on conduct of National Forest Inventory 2, Phrumsengla National Park, Ura (PNP)	FRMD	19	15	4	May 3-8, 2021
73	Training on conduct of National Forest Inventory 2, Jigme Dorji National Park, Damji (JDNP)	FRMD	28	26	2	May 3-8, 2021
74	Training on conduct of National Forest Inventory 2, Nature Conservation Division, Taba (Pemagatshel FD)	FRMD	14	13	1	May 10-15, 2021
75	Training on conduct of National Forest Inventory 2, Hotel ADD Bhutan Inn (Sarpang and PWS) (RMNP)	FRMD	19	18	1	May 24-29, 2021
		FRMD	14	12	2	May 31-June 5, 2021
76	Training on conduct of National Forest Inventory 2, Daphne Hall, UWICER (UWICER, Samtse FD)	FRMD	24	22	2	June 18-24, 2021
77	Training on conduct of National Forest Inventory 2, Druk Zhongar Hotel (Samdrup Jongkhar FD, JWS)	FRMD	27	23	4	July 12-17, 2021
78	virtual training on NFI data management	FRMD	80	65	15	July 1-3, 2021
79	Consultation for the Development of Investment	WMD/Consultant	2		2	2021

	and Implementation proposal NEC					
80	Consultation for the Development of Investment and Implementation proposal DGPC	WMD/Consulta nt	2		2	2021
81	Consultation for the Development of Investment and Implementation proposal FRMD	WMD/Consulta nt	6	5	1	2021
82	Consultation for the Development of Investment and Implementation proposal SFED	WMD/Consulta nt	4	3	1	2021
83	Consultation for the Development of Investment and Implementation proposal FPED	WMD/Consulta nt	7	4	3	2021
84	Consultation for the Development of Investment and Implementation proposal Thimphu FD	WMD/Consulta nt	4	2	2	2021
85	Consultation for the Development of Investment and Implementation proposal NCD	WMD/Consulta nt	6	3	3	2021
86	Consultation for the Development of Investment and Implementation proposal DoA	WMD/Consulta nt	3	2	1	2021
87	Consultation for the Development of Investment and Implementation proposal Bhutan power corporation	WMD/Consulta nt				2021
88	Consultation for the Development of Investment and Implementation proposal Department of Renewable energy, MoEA	WMD/Consulta nt	1	1		2021
89	Consultation for the Development of Investment and Implementation proposal Department of Kypower and power systems, MoEA	WMD/Consulta nt	8	4	4	2021

90	Consultation for the Development of Investment and Implementation proposal Department of Geology & Mines, MoEA	WMD/Consultant	3	3		2021
91	Consultation for the Development of Investment and Implementation proposal Department of cottage & small industries	WMD/Consultant	2	1	1	2021
92	Consultation for the Development of Investment and Implementation proposal Department of Roads, MoWHS	WMD/Consultant	3	2	1	2021
93	Consultation for the Development of Investment and Implementation proposal NRDCL	WMD/Consultant	2	2		2021
94	Consultation for the Development of Investment and Implementation proposal RSPN	WMD/Consultant	2	1	1	2021
95	Consultation for the Development of Investment and Implementation proposal Association of Bhutanese tour	WMD/Consultant	1	1		2021
96	Consultation for the Development of Investment and Implementation proposal Nado Poizokhang	WMD/Consultant	1		1	2021
97	Consultation for the Development of Investment and Implementation proposal construction Association of Bhutan (CAB)	WMD/Consultant	2	1	1	2021
98	Consultation for the Development of Investment and Implementation proposal Association of Bhutanese wood-based industries (AWBI)	WMD/Consultant	1	1		2021
99	Consultation for the Development of Investment and Implementation proposal	WMD/Consultant	2	2		2021

	Entrepreneurship and self-employment division, MoLHR					
100	Consultation for the Development of Investment and Implementation proposal Bio Bhutan	WMD/Consultant	1	1		2021
101	Consultation for the Development of Investment and Implementation proposal Menzong sherig, Institute of Traditional Medicine services (ITMS)	WMD/Consultant	4	4		2021
102	Consultation for the Development of Investment and Implementation proposal TCB	WMD/Consultant	3	1	2	2021
103	Consultation for the Development of Investment and Implementation proposal PNP	WMD/Consultant	1	1		2021
104	Consultation for the Development of Investment and Implementation proposal Mongar Dzongkhag (Divisional Forest office & Gewog Administration)	WMD/Consultant	12	11	1	2021
105	Consultation for the Development of Investment and Implementation proposal Rural power chain saw operators	WMD/Consultant	6	6		2021
106	Consultation for the Development of Investment and Implementation proposal RAMCO	WMD/Consultant	1	1		2021
107	Consultation for the Development of Investment and Implementation proposal Yakpugang PES-CFMGs, Thromde	WMD/Consultant	6	6		2021
108	Consultation for the Development of Investment and Implementation proposal Dozam community forestry	WMD/Consultant	8	5	3	2021

	group (NWFP and Amla pickle making), Drametse					
109	Consultation for the Development of Investment and Implementation proposal Bumthang divisional forest office and WCNP	WMD/Consultant	5	4	1	2021
110	Consultation for the Development of Investment and Implementation proposal Sawmillers, furniture house, cable operators	WMD/Consultant	4	4		2021
111	Consultation for the Development of Investment and Implementation proposal Tamshing Lhendup community forest management group (CFMG), Chokhor Gewog, Bumthang	WMD/Consultant	4	3	1	2021
112	Consultation for the Development of Investment and Implementation proposal Paro divisional forest office	WMD/Consultant				2021
113	Consultation for the Development of Investment and Implementation proposal CSI bank	WMD/Consultant				2021
114	Consultation for the Development of Investment and Implementation proposal community forest management groups (CFMGs), Luni Gewog, Wochu	WMD/Consultant				2021
115	Consultation for the Development of Investment and Implementation proposal Haa territorial range & FMU staff	WMD/Consultant	12	10	2	2021
116	Consultation for the Development of Investment and Implementation proposal JKSNR	WMD/Consultant	5	5		2021

117	Consultation for the Development of Investment and Implementation proposal Dzongkhag staff dealing with eco-tourism	WMD/Consultant	1	1		2021
118	Consultation for the Development of Investment and Implementation proposal Kyentshen community forestry group, Wangtsa village, Katsho Gewog	WMD/Consultant	6	4	2	2021
119	Consultation for the Development of Investment and Implementation proposal Gedu territorial forest division	WMD/Consultant	4	4		2021
120	Consultation for the Development of Investment and Implementation proposal Bhutan board products limited (BBPL)	WMD/Consultant	1	1		2021
121	Consultation for the Development of Investment and Implementation proposal Darla research center	WMD/Consultant	4	3	1	2021
122	Consultation for the Development of Investment and Implementation proposal Dagana forest division	WMD/Consultant	5	4	1	2021
123	FMU's Operation Planning	UWICER-DOFPS	22	21	1	March 1-5 2021
124	Forest Nursery and Plantation Management Training	UWICER-DOFPS	33	32	1	March 15-19 2021
125	Training	UWICER-DOFPS	21	15	6	May 13-14 2021

Appendix C: Positive and Negative Impacts Identified under each PAM (SESA)

Positive Impacts		Negative Impacts	
Environmental	Social	Environmental	Social
PAM 1: Strengthening sustainable forest resources management and conservation of biodiversity beyond the Protected Area			
<ul style="list-style-type: none"> • Improved forest protection and conservation Enhancement of wildlife habitat and biodiversity outside of PAs Proper planning, use of technology, and methods can improve the sustainability of the supply of available natural resources Reduce soil erosion and land degradation • Better forest and watershed management through science-based approaches (forest management plans, watershed management plans) can increase the speed at which the water supply recharges, thus improving water supply for multiple needs (for drinking, irrigation/agriculture, power generation through hydroelectricity) • Increase carbon sequestration 	<ul style="list-style-type: none"> • Better inclusion of local stakeholders and communities in forest management will increase a sense of shared stewardship of the local natural resources. • Better-managed forests and watersheds lead to improved livelihoods and increased availability of benefits • Better local understanding of Forest Rules and Regulations, ability to engage with the government in developing management plans, better-quality public participation. • Protection of cultural and heritage sites. • Improved health and psychological well-being (because of improved 	<ul style="list-style-type: none"> • Risk of introduction of exotic species (if management plan not respected) • Possible large-scale destruction in case of fire outbreaks (due to fuel accumulation) 	<ul style="list-style-type: none"> • Rise in human-wildlife conflict from increasingly managed forests. • Accumulation of waste from other activities in the forest such as ecotourism, heritage forests etc. • Risk of elite capture of benefits within community groups. • Potential of “black market” selling of timber and NWFP (from CF) from a lack of effective enforcement

	environment and livelihoods)		
PAM 2: Promote diversification and efficiency in the wood value chain			
<ul style="list-style-type: none"> • Minimized pressure on preferred species through promotion of less preferred species • Increased timber recovery through use of advanced conversion technologies • Increased timber quality and durability through proper seasoning and treatment • More efficient use of timber may lead to smaller volumes of cut • Decreased wood waste and expanded production using secondary raw materials such as stubble, leaves, needles, resin, and treetops 	<ul style="list-style-type: none"> • Enhanced income through product diversification • Rise in employment opportunities (in harvesting and wood processing) • Increased choice of products for consumers • Improved collaboration and linkages between wood processing, logging sector and forest users • Enhancement of capacities of actors in the wood value chain 	<ul style="list-style-type: none"> • Increased illegal activities • Improved harvesting technology may open up previously inaccessible forest 	<ul style="list-style-type: none"> • Loss of Indigenous knowledge as modern technologies slowly replace traditional practices • High investment cost, therefore smaller producers may be negatively affected due to lack of initial start-up capital
PAM 3: Strengthen forest fire management			
<ul style="list-style-type: none"> • Reduced forest fire risk • Reduced biodiversity loss/ ensured species persistence • Increased carbon stock/ forest cover • Composition (age, species, growth) of forest will improve • Reduced risk of water sources drying up • Reduced soil erosion and landslides • Ensured healthy regeneration 	<ul style="list-style-type: none"> • Enhanced knowledge of the impact of forest fire • Reduced property loss and ensured safety • Improved community coordination and participation • Better fire management leading to enhanced forest quality and, consequently, 	<ul style="list-style-type: none"> • Increased leaf litter (ground cover) and affected regeneration • Increased risk of extermination of endemic species and fire-sensitive species • Exposed burned land to overgrazing and colonization by exotic species and potentially 	<ul style="list-style-type: none"> • Limited quality and quantity of palatable species for livestock (due to controlled burns) • Increased cost implications through excessive use of resources (human and financial) • Potentially negative impact on poorer peoples' livelihoods, (e.g., those who set fires for hunting/deadwood)

<p>through intervention of controlled burning</p> <ul style="list-style-type: none"> • Ensured forest stand dynamics through intervention of controlled burning (research studies can be done) 	<p>improved livelihoods •</p> <ul style="list-style-type: none"> • Reduced human-wildlife conflict due to adequate food availability in the forests • • Reduced risk of SRF land encroachment (If forest is quite good, people will not encroach. If open areas are created, encroachments will increase) • • Possible reduced risk of out-of-control fires, which damage property or lead to loss of life 	<p>increased occurrence of pests and diseases due to disturbances and lack of monitoring</p>	
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PAM 4: Plantation development and restoration of degraded areas for increased carbon stock, biodiversity conservation and sustainable supply of wood products (timber and firewood)

<ul style="list-style-type: none"> • Reduced pressure on natural stock due to increase in plantations and private forest • • Improved quality and quantity of forest stands through effective application of silvicultural practices and alternative sources (private and plantation in degraded areas) • • Promotion of native species, resulting in enhanced ecosystem services. • • Enriched wildlife habitat (food, water, and cover) and increased 	<ul style="list-style-type: none"> • Increased choice of timber species (high value and fast-growing species) • • Increased accessibility for sustainable use of timber and fuelwood • • Increased contribution to GDP from forestry sector (through an increase in timber products) • • Increased income opportunities for local communities. • • Optimized use of 	<ul style="list-style-type: none"> • Increased risk of monoculture • • Replacement of native species and reduced natural habitat for wildlife • • Increased risk of forest pest and disease outbreak • • Displacement of existing land uses to other natural areas. 	<ul style="list-style-type: none"> • Increased incidences of human-wildlife conflict (plantation will improve wildlife habitat; conversely, increased habitat or wildlife through plantation may reduce HWC) • • Reduced food self-sufficiency with probable conversion of agriculture land into private forest (reduced biodiversity) • • Increased illegal logging • • Competition for use of land. • • Crowding out of existing local forest users. • • Increased risk of cost implications (human and financial)
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wildlife population • Minimized land degradation • Improved water catchment areas	non-arable land for private forest development • Ensured protection of water sources		
PAM 5: Harmonizing land-use planning (cross-sectoral integrated land-use planning)			
<ul style="list-style-type: none"> • Proper land categorization will help delineate land uses in an area • • Efficient and effective utilization of resources (science-based/rational land management) • • Minimized destruction to forests and environment • • Improved quality and quantity of water resources (see PAM 1 for detail) • • Enhancement of biodiversity conservation and forest ecosystem services. 	<ul style="list-style-type: none"> • Reduced land disputes through proper planning • • Guide to future infrastructure development • • Reduced human-wildlife conflict (scattered settlements will be relocated to reduce HWC) • • Lowered cost of infrastructure development • • More potential for fairer sharing of benefits. • • Enhanced institutional capacity of relevant institutions at Dzongkhag and Gewog levels for improved forest governance. • • Improved law enforcement • • Reduction in contradictory laws 	<ul style="list-style-type: none"> • Increased size of settlements may result in pollution of water and air • • Potentially fragmented wildlife habitat (due to increased infrastructure, change of allocated land use 	<ul style="list-style-type: none"> • Reduced ability of local communities to influence forest planning.
PAM 6: Support and strengthen environmental impact assessment and compliance monitoring system and coordination			
<ul style="list-style-type: none"> • Stronger understanding of current environmental status 	<ul style="list-style-type: none"> • Facilitation of stakeholder coordination linkages, and 		<ul style="list-style-type: none"> • Difficulties in stakeholder engagement and participation • • Project proposals declined despite

<p>which helps in future conservation plan • Improved ability to target key environmental impacts. • Minimized harm and pollution of air, water and land • Improved biodiversity conservation • Prevented or controlled illegal activities • Improved monitoring of environmental performance. • Improved environmental management of projects</p>	<p>participation • Informing of community and prior consent obtained • Convincing of stakeholders on the project perspective through EIA report • Avoidance of unnecessary cost escalation • Ensured health and safety • Improved service delivery</p>		<p>huge investment (loss for investors) • Escalation of cost estimation due to inclusion of environmental safeguards • Delayed project approvals</p>
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PAM 7: Sustainable management of NWFPs (domestication and cultivation) and promote enterprise development

<ul style="list-style-type: none"> • Improved conservation of species and genetic diversity maintained • Increased productivity and utilization of fallow land • Reduced pressure on natural stock • Utilization of non-forested SRF land • Conservation of soil and water • Wildlife habitat and food resources maintained • Lower pressure on timber products • Better guidelines for extraction of NWFPs could prioritize environmental management 	<ul style="list-style-type: none"> • Improved livelihoods through sale of NWFP, and employment opportunities for local population • More time for other income activities • Community empowerment: decision making, entrepreneurship, and marketing of NWFP. • Encouragement of small-scale rural enterprise • Community participation in conservation and management • Enhanced 	<ul style="list-style-type: none"> • Possibility of introduction of exotic species • Increased resource exploitation due to improved capacity, which can lead to overexploitation or increased negative impacts on resources. • Hybridization of species (GMO) • Over-harvesting from the wild to secure higher prices • Potential to encourage monoculture of high-priced species • Chances of pest and 	<ul style="list-style-type: none"> • Conflict of interest – between gender or age group • Diversion of interest from mainstream agriculture (shift to more lucrative activities) • Lack of space for livestock farming • Dependency on easy access to development facilities (e.g. Highlanders increased dependency on Cordyceps for better income) • Dependency on market competition and price fluctuation • Mass production and poor quality of products • Expansion of NWFP harvesting may benefit large operators (who will capture most resources) and harm small collectors
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	<p>community cohesion through group formation and consequent minimizing of conflicts • Promotion of gender participation through activities designed for all ages and sex • Preservation of traditional knowledge through the use of NWFP in local medicines and other uses • Reduced rural-urban migration by way of active engagement in farms • Fairer distribution of benefits from forests.</p>	<p>disease outbreaks with domestication • Replacement of agriculture crops/native species • Pollution/waste due to increasing commercial activities • Land encroachment • Human-wildlife conflict • Habitat fragmentation through temporary barrier – electric fencing</p>	
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PAM 8: Encourage and promote income generation from ecosystem services in key sectors

<ul style="list-style-type: none"> • Improved water supply/quality (PAM 1) and soil stability • Increased wildlife population • Less harvesting of trees for timber (because of payments for maintaining trees standing), Increased forest cover • More diligent protection of forests • Documentation of biodiversity and publication 	<ul style="list-style-type: none"> • Increase investment in local areas, encouraging growth in livelihoods, services, infrastructure, employment • Community participation and engagement • Diversification of community income sources. PES and Ecotourism, Capacity development of 	<ul style="list-style-type: none"> • Solid waste pollution • Disturbance to wildlife • Environmental pollution along trails and tracks due to tourists • Risk of illegal trading of exotic species due to increased public exposure to exotic species • Illegal collection of specimen rocks, plants could be collected, patent 	<ul style="list-style-type: none"> • Increased human-wildlife conflict • Surplus products (e.g. too many Homestays leading to failure) and underutilization • Elite capture of business leading to intra-community conflicts • Restricted access to resources (might protect for tourists and drive local people from these resources) • Inequality in access to resources and benefit sharing among communities • Risk of community displacement/resettlement or land grabbing (through corruption) • Increased
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	<ul style="list-style-type: none"> local people (chefs, guides) • Reduction of rural-urban migration • Access to markets for local products • Change of mindset toward conservation 	the species	competition for land (for agriculture, for hotels etc.)
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PAM 9: Climate-smart livestock farming practices

<ul style="list-style-type: none"> • Reduced grazing pressure on SRF • • Increase in natural regeneration by reducing free grazing • • Reduction of firewood consumption through implementation of biogas • • Minimized greenhouse gas emission by reducing livestock population • • Higher land productivity and soil enrichment 	<ul style="list-style-type: none"> • Reduction in labor force required through the use of technologies and machinery • • Improvement of living standards by generating income • • Improved health and hygiene of the communities • • Reduced rural-urban migration through community engagement and creation of employment opportunities 	<ul style="list-style-type: none"> • Less seed dispersal due to lack of free ranching livestock • • Encouragement of single-stand vegetation growth • • Promotion of invasive species (through pasture development/feed and fodder). Import of feed/fodder (for livestock) may lead to introduction of exotic grass species (e.g., congress grass) • • Promotion of use of chemical fertilizers as there will be limited farmyard manure 	<ul style="list-style-type: none"> • Loss of traditional system of farming • • Loss of native livestock species • • Exclusion of illiterate farmers (leading to lack of technological expertise) • • Less raw materials for biogas • • Lower production of farmyard manure • • Land fragmentation/displacement of small-scale farms • • Shortages of farmyard manure at the household level
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PAM 10: Climate-smart agriculture practices

<ul style="list-style-type: none"> • Smart use of limited land and resources, which will have a positive impact on environment • 	<ul style="list-style-type: none"> • Improvement in income generation opportunities (can earn high income from organic 	<ul style="list-style-type: none"> • Potential degradation due to infrastructure development such as damage to irrigation 	<ul style="list-style-type: none"> • Labor intensive, low production (organic/conventional vs. mechanized farming: low volume-high price and vice versa) • • High cost of inputs
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<p>Reduced use of chemical fertilizers • Encouragement of sustainable management of water resources including rainwater harvesting • Reduction of continued expansion of agriculture into forest lands. • Contribution to the integrity of forests with high conservation value and reduction in degradation • Improvement in biodiversity as specific areas change ecological habitats • Reduction in erosion, runoff, and siltation and improvement in water quality in sub-watersheds</p>	<p>farm products) • Employment opportunities • Variety of products (crop rotation) • Farmers gain technical knowledge through capacity development • Mitigation of human-wildlife conflict • Avoidance of water user conflict</p>	<p>channels, soil erosion, wildlife etc. • Restriction of wildlife movement due to electric fencing and other structures • Micro-habitat destruction due to construction of basic amenities</p>	<p>for organic farming • Lack of capacity to adopt smart agriculture farming • Conventional farmers will not be able to adopt/compete with smart farming systems</p>
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Appendix D: Participants in the Self-Assessment Workshops

List of Participants for R-Package Workshop in Bumthang

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Appendix F: Multistakeholder Self-Assessment Questionnaire

Assessment Questionnaire

The purpose of this questionnaire is to assess the progress made by Bhutan during its REDD+ Readiness phase. It was designed based on the FCPF REDD+ Readiness Assessment Framework Application Guidelines (based on the 34 criteria). We thank you in advance for taking out time to answer this questionnaire as frankly and openly as possible.

NB: Select or shade the correct section as appropriate

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Component 1: Readiness organization and consultation

Subcomponent 1a: REDD national management mechanisms				
C1	<i>Accountability and transparency</i>			
<ul style="list-style-type: none"> Is there evidence of progress in accountability and transparency in the functioning of national REDD+ management mechanism at the national level? (for example: is there evidence that national REDD+ institutions and management bodies are functioning in a manner that is accountable and transparent?) 				
1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress	
Justifications/Comments (please specify)				
<hr/> <hr/> <hr/>				
C2	<i>Operating mandate and budget</i>			
<ul style="list-style-type: none"> Is there evidence of progress in defining the tasks of management bodies and budget planning for the implementation of activities? (for example, is there evidence that national REDD+ institutions operate under clear, mutually reinforcing mandates with adequate, predictable and sustainable budgets?) 				
1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress	
Justifications/Comments (please specify)				
<hr/> <hr/> <hr/>				
C3	<i>Multi-sector coordination mechanisms and cross-sector collaboration</i>			
<ul style="list-style-type: none"> Are there elements that show progress in the multi-sector coordination process and collaboration with sectors in programming and implementing activities (for example, are there elements that demonstrate how national REDD+ institutions and management bodies 				

verify that activities are aligned according to the sectoral policies that influence them (agriculture, environment, infrastructure development and land-use planning)?

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

C4 *Technical supervision capacity*

- Is there progress in technical supervision capacity (e.g., do national REDD+ institutions and management bodies effectively and efficiently conduct and supervise the technical planning, including routine supervision of technical preparations through multi-sector involvement?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

C5 *Funds capacity management*

- Is there progress in the management of funds? (for example, are there elements that demonstrate effectiveness, efficiency and transparency in the way national institutions and management bodies ensure budgetary management, monitoring and coordination of activities financed by development partners?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

C6 *Feedback and grievance redress mechanism*

- Is there progress in the grievance and conflict management process (for example, is there evidence of a transparent and impartial grievance and conflict management mechanism or body that operates at the national, subnational and local levels with a clearly defined mandate, expertise and adequate means?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

- Is there progress in the grievance and conflict management process (e.g., is there evidence that potentially affected communities are aware of, have access to and respond to feedback (grievance) and redress (complaint management)?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

Subcomponent 1b. Consultation, participation, and outreach

C7 *Participation and engagement of key stakeholders*

- Is there progress in the involvement, participation and engagement of key stakeholders? (For example, are there elements that demonstrate how the full, ongoing and effective participation of key stakeholders is done primarily through institutional mechanisms (such as additional operations to mobilize marginalized groups such as women, youth, indigenous peoples and forest-dependent local communities)?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

- Is there progress in the involvement, participation and engagement of key stakeholders? (for example, are there participatory elements or mechanisms that are used so that indigenous peoples and forest-dependent local communities can meaningfully participate in the REDD+ readiness and implementation phases?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

C8 *Consultation process*

- Is there progress in the consultation process? (for example, is there evidence that consultations at national and local level are clearly carried out, representative, transparent, and provide access to information in a timely and culturally appropriate manner?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

- Is there progress in the consultation process? (for example, is there evidence that the country applied a self-selection process to identify beneficiaries and stakeholders during consultations?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

- Is there progress in the consultation process? (for example: is there evidence that indigenous peoples' institutions and decision-making processes are used in consultations to enrich consultations and enhance participation?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

- Is there progress in the consultation process? (for example: is there evidence that consultations take gender equality into account?).

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

C9 ***Information sharing and accessibility to information***

- Is there progress in the information sharing process and accessibility to information? (for example: is there evidence that national REDD+ institutions and management bodies have provided timely, transparent, ongoing and comprehensive sharing and disclosure of information (associated with all preparatory activities, including the development of the REDD+ strategy, reference levels and monitoring systems) in a manner appropriate to the national context?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

- Is there progress in the information sharing process and accessibility to information? (for example, is there evidence that the information is accessible to all stakeholders (that it is shared in a form and language that they understand) and they actually receive it?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

- Is there progress in the information sharing process and accessibility to information? (for example: Are there communication means used to properly inform stakeholders, especially those with little or no access to relevant information?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

C10 ***Implementation and public disclosure of consultation outcomes***

- Is there progress in the process of using and reporting the results of consultations? (for example: are there elements that demonstrate how the results of consultations are integrated (shared, and taken into account) in, the national REDD+ strategy document as well as in the technical activities associated with the construction of reference levels and monitoring systems (MRV)?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

Component 2: REDD+ Strategy Preparation

Subcomponent 2a. Land use evaluation, forest policy and governance

C11 ***Assessment and Analysis***

- Is there progress in the land use assessment and analysis process? (for example: does the synthesis of the work carried out during the formulation and readiness phases of the R-PP document present an analysis of recent land use changes and an assessment of problems associated with land tenure and title registration, natural resource rights, livelihoods (including traditional/customary), laws, policies and forest governance?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

C12 ***Prioritization of direct and indirect drivers/barriers to forest carbon stock enhancement.***

- Is there progress in prioritizing the direct and indirect drivers of deforestation and forest degradation, for example: are there elements that demonstrate how the analysis has been used to prioritize the main direct and indirect factors related to forest management that will be addressed by the programs and policies proposed in the REDD+ strategy?

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

- Is there progress in the land use assessment and analysis process? (for example: has the analysis examined the main obstacles to forest carbon stock enhancement operations that will be addressed by REDD+ integrated programs and policies?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

C13 *Links between drivers/barriers and REDD+ activities*

- Is there progress in the land use assessment and analysis process? (for example is there evidence that systematic links between drivers and barriers to carbon stock enhancement operations have been established and that REDD+ activities have been identified.

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

C14 *Action plans to address natural resource rights, land tenure and governance.*

- Is there progress in the process of addressing natural resource rights, land tenure and governance? (for example: have action plans been established to make short, medium and long-term progress in addressing land use, tenure and title, natural resource rights, livelihoods and governance issues in priority areas associated with specific REDD+ programs? Are there elements indicating the proposed further steps and resources needed?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

C15 *Implications or impacts for forest laws and policies*

- Is there progress in the process of proposing forest law and policy reform or implementation? (for example: does the assessment process highlight impacts on long-term forest laws and policies?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

Subcomponent 2b. REDD+ Strategy Options

C16 *Selection and prioritization of REDD+ strategic options*

- Is there progress in proposing strategic options and in selecting and prioritizing them? (for example: has the process of proposing REDD+ strategic options including selection and prioritization been done in a transparent and participatory process?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

- Is there progress in proposing strategic options and in selecting and prioritizing them? (for example: Has the emission reduction potential of these strategic options been estimated to the extent possible and what is the evidence that these policy choices informed the development of the REDD+ strategy?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

C17 *Feasibility assessment*

- Is there progress in proposing strategic options as well as in assessing the feasibility of these options? (for example: is there evidence that REDD+ strategic options have been assessed and prioritized in terms of their social, environmental and political feasibility, as well as the risks and opportunities they present, and all this associated with a cost-benefit analysis?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

C18 *Impact or implication of strategic options on existing sectoral policies*

- Is there progress in proposing strategic options and in analyzing the impact of these options on existing sectoral policies? (For example: have major discrepancies between REDD+ priority strategic options and policies or programs in other sectors associated with the forest sector (for example: transport and agriculture) been identified?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

- Is there progress in the search for procedures to address major discrepancies between priority REDD+ strategic options and sectoral policies in other sectors associated with the forest sector? (for example: has a timetable and procedure been established to address and integrate REDD strategic options with applicable development policies?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

- Is there progress in proposing strategic options and in analyzing the impact of these options on existing sectoral policies? (For example: do these strategic options support broader development objectives and mobilize community buy-in?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

Subcomponent 2c: Implementation framework:

C19 *Adoption and implementation of laws/legislation and regulations*

- Is there progress in the adoption and implementation of laws and regulations? (for example: have laws and/or regulations associated with REDD+ programs and activities been adopted?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

- Is there progress in the adoption and implementation of laws and regulations? (for example: is there evidence that relevant REDD+ laws and policies are being implemented?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

C20 *Guidelines for implementation*

- Is there progress in the process of developing an implementation framework? (for example: is there evidence that the implementation framework defines carbon rights, benefit-sharing mechanisms, REDD+ financing modalities, formal accreditation procedures (for pilot or REDD+ projects) and grievance and conflict management mechanisms?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

C21 *Benefit-sharing mechanisms*

- Is there progress in developing a benefit-sharing mechanism for REDD+? (for example: is there evidence that benefit-sharing mechanisms for REDD+ are transparent?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

C22 *National REDD+ registry and monitoring system for REDD+ activities*

- Is there progress in the construction of a national REDD+ registry as well as in the monitoring system for REDD+ activities? (for example: is there a national geo-referenced information system or an operational registry of all relevant information (e.g., location, ownership structure, carbon accounting and financial flows for national and subnational REDD+ programs and projects)?
- Is there evidence of public access to REDD+ information?

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

Subcomponent 2d: Social and environmental impacts

C23 *Analysis of social and environmental safeguards issues*

- Is there progress in the analysis of social and environmental safeguards issues? (for example: is there evidence that social and environmental safeguards issues applicable to the national context have been fully identified/analyzed through appropriate studies or diagnostics and consultation processes?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

C24 *REDD+ Strategy Design with Respect to Impacts*

- Is there progress in building the REDD+ strategy based on impacts? (for example: are there elements that indicate how the results of the SESA and the identified social and environmental impacts (positive and negative) have been used to prioritize and define REDD+ strategic options?)

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Justifications/Comments (please specify) _____

C25 *Environmental and social management framework*

- Is there progress in developing environmental and social management frameworks? (for example: is there evidence that the ESMF is in place and managing environmental and social risks/potential impacts related to or associated with REDD+ activities?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

Component 3: Reference Emissions Level/Reference Levels

C26 ***Demonstration of Methodology***

- Is there evidence of progress in describing the methodology for developing the forest reference level (FRL)? (For example, is the subnational or national preliminary FRL presented (in the preparatory document) using a clearly documented methodology and a step-by-step approach as appropriate?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

- Is there evidence of progress in describing the methodology for developing the forest reference level (for example, is there information on planning additional measures for additional data collection? And have relationships between the subnational reference level and the national reference level been demonstrated?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

C27 ***Use of historical data and adjusted for national circumstances or context***

- Is there evidence of progress in the use of historical data and adaptation to the national context? (for example, to what extent does the establishment of the FRL take into account historical data, and, if it is adapted to the national situation, what are the reasons and data that demonstrate that the projected adjustments are credible and justifiable?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

- Is there evidence of progress in the use of historical data and adaptation to the national context? (for example: are the data and documents provided in a transparent manner and sufficient to allow reconstruction or independent verification of the FRL?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

C28 ***Technical feasibility of the methodological approach, and consistency with UNFCCC/IPCC guidance or recommendations and guidelines***

- Is there evidence of progress in the technical feasibility of the methodological approach that is consistent with UNFCCC guidelines and IPCC recommendations and guidelines? (for example: is the FRL based on transparent, complete and accurate information, consistent with

UNFCCC guidance and the latest IPCC guidance and guidelines, for the technical assessment of the data sets, approaches, methods, models and assumptions used to define the FRI?

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

Component 4: Forest monitoring system and safeguard measures

Subcomponent 4a: National Forest Monitoring System

C29 *Documentation of monitoring approach or methodology*

- Is there evidence of progress in explaining the monitoring methodology (for example: explicit reasons or analytical evidence to support the choice of methodology used or proposed (combining remote sensing and ground-based measurements for forest carbon inventory, system resolution, coverage and accuracy, integration of carbon and gas reservoirs) and improvements over time?

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

- Is there evidence of progress in explaining the monitoring methodology (for example: has the system was technically reviewed and approved at the national level? Is it compatible with existing national and international guidelines and under development?

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

- Is there evidence of progress in explaining the monitoring methodology (for example: are potential sources of uncertainty identified to the extent possible?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify) _____

C30 *Demonstration of early system implementation*

- Is there evidence of progress in the early stages of implementation (demonstration)? (for example: is there evidence that the system has the capacity to monitor REDD+ activities to which the national REDD+ strategy gives priority?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

- Is there evidence of progress in the early application phases (e.g., demonstration) (for example: are there elements demonstrating how the system identifies and evaluates emission displacement (leakage) and, if so, what are the first results?).

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

- Is there evidence of progress in the early implementation (demonstration) phases (for example: is there evidence of how key stakeholders are involved in the development and early implementation phases of the monitoring system (including data collection and possible verification of results), is there evidence of how these stakeholders are consulted in this regard?

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

- Is there evidence of progress in the early implementation phases (demonstration) (for example: is there evidence that the system can compare changes in forest cover and carbon content (and associated GHG emissions) with baseline estimates used to establish the FRL?).

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

C31 *Institutional arrangements and capacities*

- Is there evidence of progress in institutional arrangements and capacities for monitoring? (for example: is there evidence that mandates for forest monitoring tasks are clearly defined (satellite data processing, forest inventory, information sharing)?

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

- Is there evidence of progress in institutional arrangements and capacities for monitoring? (for example: is there evidence that transparent mechanisms for public distribution of forest and GHG emissions data have been presented and are at least in their early stages of implementation?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

- Is there evidence of progress in institutional arrangements and capacities for monitoring? (for example: is there evidence that related resource requirements have been identified and estimated (e.g., capacity, training, hardware, software and budget required)?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

Subcomponent 4b: Information System for Multiple Benefits, Other Impacts, Governance, and Safeguards

C32 *Identification of non-carbon aspects and relevant social and environmental issues*

- Is there evidence of progress in identifying non-carbon aspects and progress in identifying relevant social and environmental issues? (for example, are there elements that demonstrate how non-carbon aspects and relevant social and environmental issues of REDD+ readiness have been identified? Are there any recommendations for capacity building?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

C33 *Monitoring, reporting and information sharing*

- Is there evidence of progress in monitoring, reporting and sharing of information? (For example: is there evidence that a transparent mechanism for regular sharing of information relating to non-carbon aspects and safeguards has been developed and is at least in its early stages of implementation?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

- Is there evidence of progress in monitoring, reporting and sharing of information? (for example, is there evidence of how the following information is shared: quantitative or qualitative variables of primary importance reflecting improved living conditions of communities, biodiversity conservation, valuation of ecosystem services, key governance factors of direct relevance to REDD+ readiness, and application of safeguards with due regard to monitoring requirements contained in the ESMF.

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

C34 ***Institutional arrangements and capacities***

- Is there evidence of progress in monitoring, reporting and information sharing mainly in terms of institutional arrangements and capacities? (for example: is there evidence that mandates for non-carbon-related tasks and safeguards are clearly defined?)

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

- Is there evidence of progress in monitoring, reporting and information sharing mainly in terms of institutional arrangements and capacities? (for example: is there evidence that related resource requirements have been identified and estimated in terms of capacity, training, hardware/software, and budget)?

1. Not yet demonstrating progress	2. Further development required	3. Progressing well, further development required	4. Significant progress
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Justifications/Comments (please specify)

Thank You for Filling This Questionnaire!

Appendix G: Details of the Self-Assessment of 34 Assessment Criteria

Subcomponent	Criteria	Significant progress	Progressing well, further development required	Further development required	Not yet demonstrating progress
COMPONENT 1: READINESS ORGANIZATION & CONSULTATION					
Subcomponent 1a: REDD national management mechanisms	Criterion 1: Accountability and transparency	43	29	2	0
	Criterion 2: Operating mandate and budget	41	27	6	0
	Criterion 3: Multi-sector coordination mechanisms and cross-sector collaboration	40	26	6	2
	Criterion 4: Technical supervision capacity	35	30	9	0
	Criterion 5: Funds capacity management	44	28	2	0
	Criterion 6: Feedback and grievance redress mechanism	35	31	4	4
	Subcomponent Average		39.67	28.50	4.83
Subcomponent 1b: Consultation, participation, outreach	Criterion 7: Participation and engagement of key stakeholders	39	33	1	2
	Criterion 8: Consultation process	43	26	5	1
	Criterion 9: Information sharing and accessibility to information	37	33	5	0
	Criterion 10: Implementation and public	28	41	6	0

Subcomponent	Criteria	Significant progress	Progressing well, further development required	Further development required	Not yet demonstrating progress
	disclosure of consultation outcomes				
	Subcomponent Average	36.75	33.25	4.25	0.75
	Component Average	38.21	30.88	4.54	0.88
COMPONENT 2: REDD+ STRATEGY PREPARATION					
Subcomponent 2a. Land use evaluation, forest policy and governance	Criterion 11: Assessment and Analysis	35	35	4	0
	Criterion 12: Prioritization of direct and indirect drivers/barriers	43	27	4	0
	Criterion 13: Links between drivers/barriers and REDD+ activities	39	33	2	0
	Criterion 14: Action plans to address natural resource rights, land tenure and governance.	31	37	6	0
	Criterion 15: Implications or impacts for forest laws and policies	34	34	6	0
	Subcomponent Average	36.4	33.2	4.4	0
Subcomponent 2b. REDD+ Strategy Options	Criterion 16: Selection and prioritization of REDD+ strategic options	48	22	4	0
	Criterion 17: Feasibility assessment	37	33	4	0
	Criterion 18: Impact or implication of	29	37	8	0

Subcomponent	Criteria	Significant progress	Progressing well, further development required	Further development required	Not yet demonstrating progress
	strategic options on existing sectoral policies				
	Subcomponent Average	38.00	30.67	5.33	0.00
Subcomponent 2c: Implementation framework	Criterion 19: Adoption and implementation of laws/legislation and regulations	45	29	1	0
	Criterion 20: Guidelines for implementation	43	30	2	0
	Criterion 21: Benefit-sharing mechanisms	29	42	4	0
	Criterion 22. National REDD+ registry and monitoring system for REDD+ activities	35	35	5	0
	Subcomponent Average	38	34	3	0
Subcomponent 2d: Social and environmental impacts	Criterion 23: Analysis of social and environmental safeguards issues	38	33	4	0
	Criterion 24: REDD+ Strategy Design with Respect to Impacts	31	43	1	0
	Criterion 25: Environmental and social management framework	38	36	1	0
	Subcomponent Average	35.67	37.33	2.00	0.00

Subcomponent	Criteria	Significant progress	Progressing well, further development required	Further development required	Not yet demonstrating progress
	Component Average	37.02	33.80	3.68	0.00
COMPONENT 3: REFERENCE EMISSIONS LEVEL/REFERENCE LEVELS					
Component 3: Reference Emissions Level/Reference Levels	Criterion 26a: National Forest Reference Level and Forest Reference Level developed (Demonstration of Methodology)	56	16	1	0
	Criterion 26b: Need for future improvements identified (Demonstration of Methodology)	34	36	3	0
	Criterion 27: Use of historical data and adjusted for national circumstances or context	47	25	1	0
	Criterion 28: Technical feasibility of the methodological approach, and consistency with UNFCCC/IPCC guidance or recommendations and guidelines	50	23	0	0
	Component Average	46.75	25	1.25	0
COMPONENT 4: MONITORING SYSTEM FOR FORESTS AND SAFEGUARDS					
Subcomponent 4a: National Forest Monitoring System.	Criterion 29: Documentation of monitoring approach or methodology	49	24	0	0
	Criterion 30: Demonstration of	37	35	1	0

Subcomponent	Criteria	Significant progress	Progressing well, further development required	Further development required	Not yet demonstrating progress
	early system implementation				
	Criterion 31: Institutional arrangements and capacities	37	33	3	0
	Subcomponent Average	41.00	30.67	1.33	0.00
Subcomponent 4b: Information System for Multiple Benefits, Other Impacts, Governance, and Safeguards	Criterion 32: Identification of non-carbon aspects and relevant social and environmental issues	43	29	1	0
	Criterion 33: Monitoring, reporting, and information sharing	42	31	0	0
	Criterion 34: Institutional arrangements and capacities	34	35	4	0
	Subcomponent Average	39.67	31.67	1.67	0.00
	Component Average	40.33	31.17	1.50	0.00

Appendix H: Pictures from the Self-Assessment Workshops



Stakeholder workshop in Bumthang



Stakeholder workshop in Thimphu