

AFoCO REDD+ Fact Sheet Series

Bhutan

Compiled in 2023

Asian Forest Cooperation Organization

ABBREVIATIONS

FCPF	Forest Carbon Partnership Facility
FREL	Forest Reference Emission Level
FRL	Forest Reference Level
GHG	Greenhouse Gas
GIZ	German Agency for International Cooperation
ICIMOD	International Centre for Integrated Mountain Development
KBA	Key Biodiversity Area
LULUCF	Land Use, Land-Use Change and Forestry
NAP	National Adaptation Plan
NDC	Nationally Determined Contribution
NFI	National Forest Inventory
NFMS	National Forest Monitoring System
NRS	National REDD+ Strategy
OECMs	Other Effective Area-based Conservation Measures
R-PP	REDD+ Readiness Preparation Proposal
SFM	Sustainable Forest Management
SIS	Safeguards Information System
SLM	Sustainable Land Management
SNV	Stichting Nederlandse Vrijwilligers
WMD	Watershed Management Division
WRF	Warsaw REDD+ Framework

THE KINGDOM OF BHUTAN

SUMMARY

Bhutan is a carbon-negative country and has very low historical deforestation or forest degradation. Thus, the scope for participation in the REDD+ results-based payment system to maintain the net carbon sink by reducing emissions is limited. However, with 69.7% of land area under forest cover and REDD+ as one of the mitigation strategies for NDC and Cooperative Approaches for carbon markets under Article 6 of the Paris Agreement is strongly considered.

Bhutan has developed a National Strategy and Action Plan, Safeguards Information System (SIS), National Forest Monitoring System, and Forest Reference Emission Level/Forest Reference Level in pursuant to the Warsaw REDD+ Framework (WRF) for REDD+. for potential financial incentives. While there are no ongoing REDD+ Projects, sustainable forest management programs, conservation of carbon stocks, and forest plantation features in regular plans and programs. At the same time, deforestation activities are closely monitored.

REDD+ readiness initiatives have been implemented with financial and technical support from several development partners. These initiatives helped in building essential technical capacities and the development of necessary architecture for the implementation of REDD+.

1. COUNTRY OVERVIEW

The Kingdom of Bhutan (Bhutan) is a landlocked country with a total area of 38,394 km² situated on the southern slope of the Eastern Himalayas. The country is almost entirely mountainous and lies between two giant countries; China in the north and India in the east, west, and south (Figure 1). About 69.7% of the country is covered by forest, and the proportion of terrestrial key biodiversity areas that are covered by designated protected areas is 52% in 2023. As the earth's youngest and highest mountain chain, the Himalayas ecosystem is ecologically fragile and an identified biodiversity hotspot¹. The climate varies dramatically due to its geographical location from alpine to temperate to subtropical, with monsoon seasons from June to September. The total population was 763,249 in 2022. The country has a GDP per capita of \$3833 (NSB, 2022) with an annual growth rate of 5.21% (NSB, 2022).

Table 1. General status of Bhutan

Official name (ISO 3166 code)	Kingdom of Bhutan (BT)
Capital	Thimphu
Population	763,249 (NSB, 2022)
GDP per capita	USD 3,833 (NSB, 2022)
GDP growth (annual)	5.21% (NSB, 2022)
Climate	Alpine to temperate to subtropical with monsoon season from June to September.
Land Area	38,394 km ²
Forest Area	26,747.41 km ² (69.7% of land area) (DoFPS FMID, 2022)
Important sites for terrestrial biodiversity protected	47% (UN, 2020)

¹Conservation International Critical Ecosystem Partnership Fund (2020). Himalaya Hotspot. URL: <https://www.cepf.net/our-work/biodiversity-hotspots/himalaya>



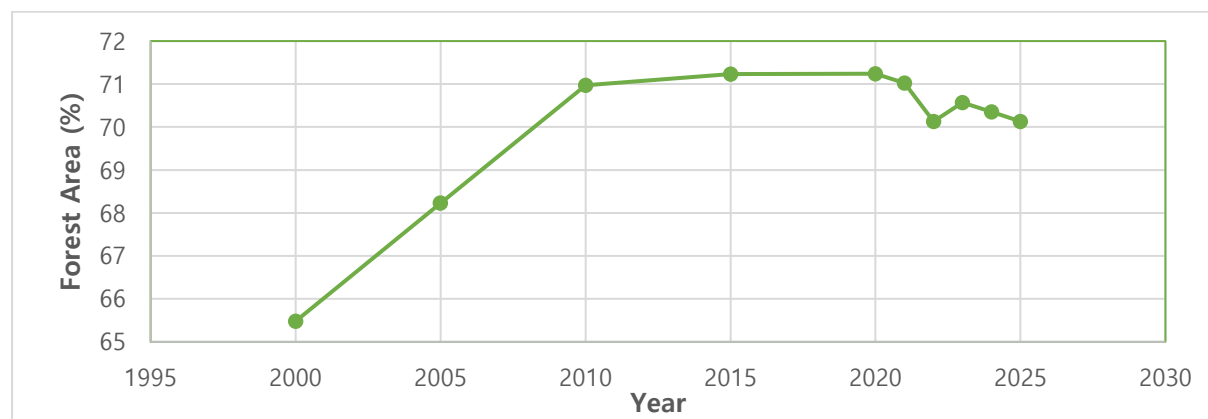
Figure 1. Country Map of Bhutan

Source: <https://www.un.org/geospatial/content/bhutan-0>

2. SUSTAINABLE DEVELOPMENT GOALS

According to the SDG 15 Life on Land, Bhutan's Forest area as a proportion of total land area increased from 65.48% in 2000 to 71.23% in 2015 and remained at a similar level of 71.24% in 2020.

Figure 1. Forest area as a proportion of total land area (%)



Year	2000	2005	2010	2015	2020	2021	2022	2023	2024	2025
Forest area (%)	65.48	68.23	70.97	71.23	71.24	71.02	70.13	70.57	70.35	70.13

Raw data: Bhutan FRA 2025 Draft National Report

Bhutan's total area covered by protected areas expanded to 36% between 1993 to 2004, surged to 51.44% from 2008 to 2022, and subsequently rose to 52% in 2023 following the inclusion of a new Biological Corridor in 2023, marking the current extent of Bhutan's Protected Area Network.

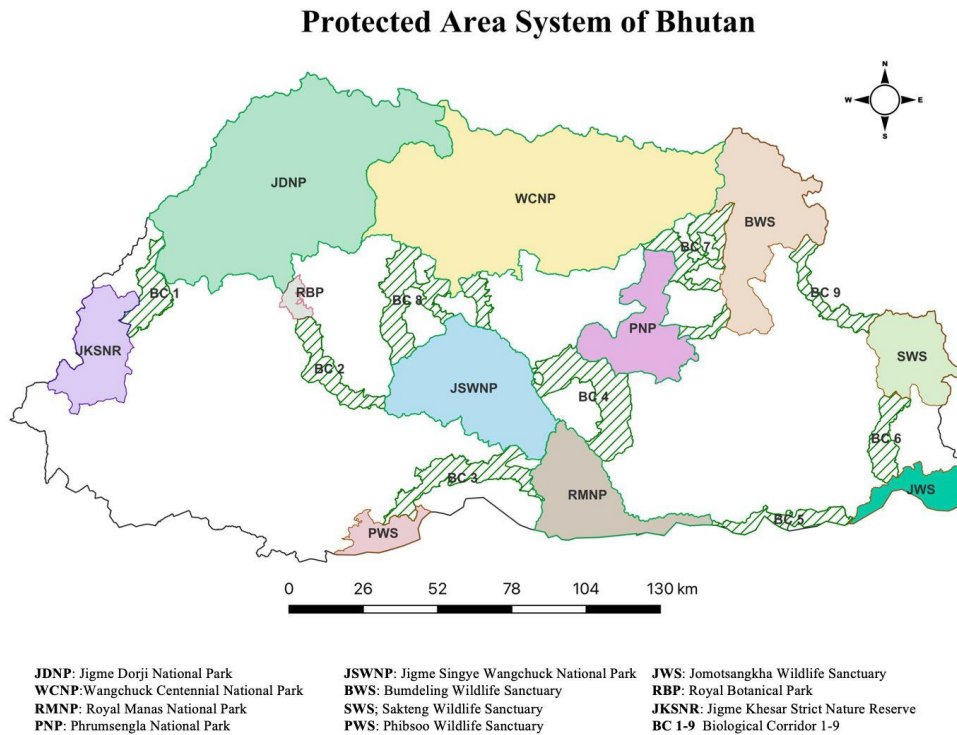
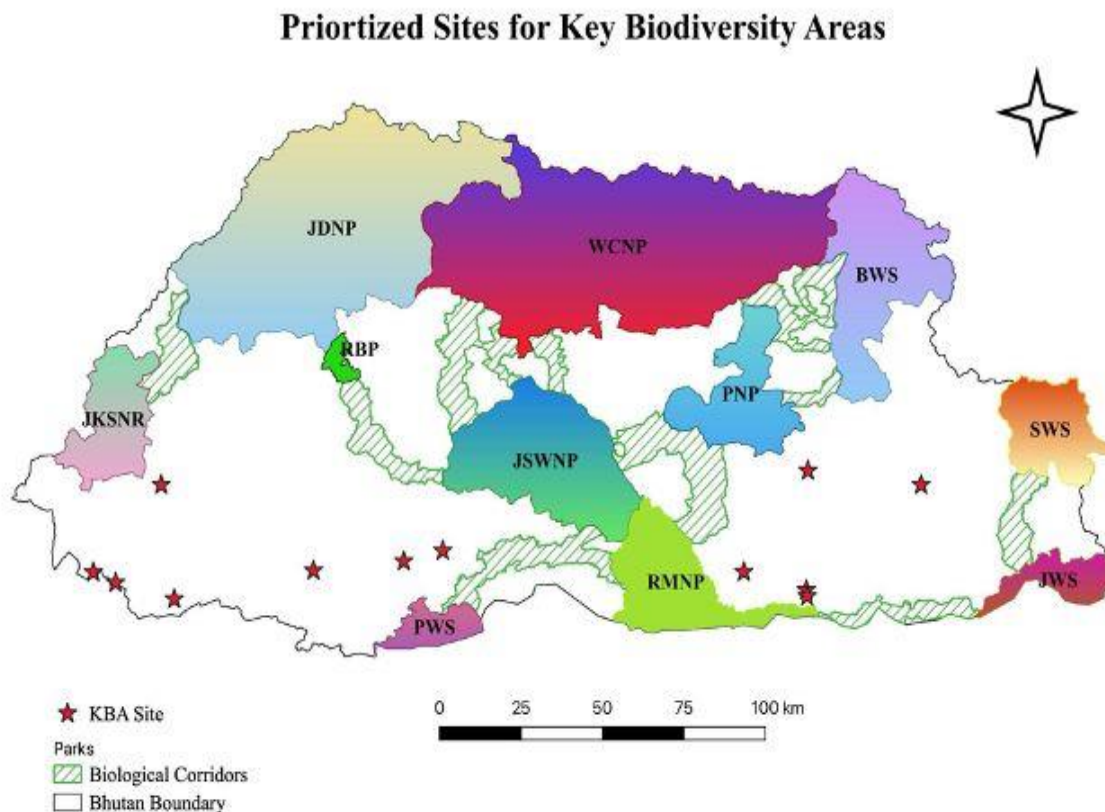


Figure 3. Map showing the Protected Area Network in Bhutan

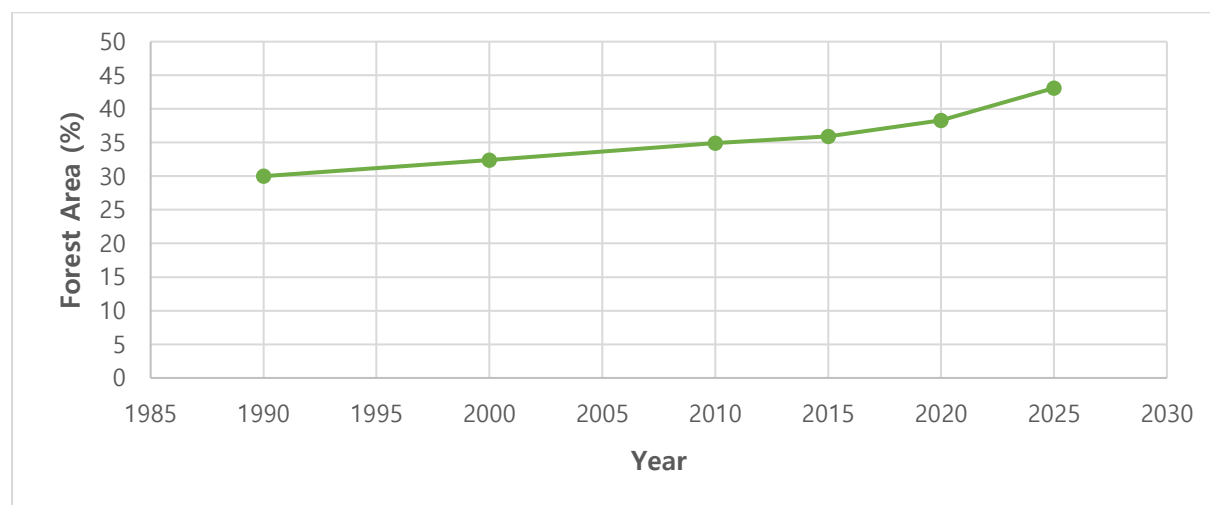
Key Biodiversity Areas (KBA) in Bhutan are part of the 'Other Effective Area-based Conservation Measures' (OECMs) and there are currently 11 KBA sites totaling up to 318.79 sq km of area. The KBAs in Bhutan are located outside the protected area network to conserve the species *outside the protected area system contributing significantly to the global and/or national persistence of biodiversity*.



*Figure 4. Location of the KBA sites in Bhutan
(Source: Nature Conservation Division, DoFPS, 2023)*

Bhutan’s Proportion of Forest Area under a Long-Term Management Plan which includes the Forest Management Units (FMU), Protected Areas (PAs), Community Forest (CF), and Local Forest Management Areas (LFMA) was 32.4% in 2000, increased to 34.9% in 2010, increased largely to 38.3% in 2020.

Figure 5. Proportion of forest area under a long-term management plan (%)



Year	1990	2000	2010	2015	2020	2025
Forest Area (%)	30	32.4	34.9	35.9	38.3	43.1

Raw data: Bhutan FRA 2025 Draft National Report

3. NATIONALLY DETERMINED CONTRIBUTION (2021)²

Forestry plays an important role in the Nationally Determined Contributions (NDCs) as part of the country's commitment to the Paris Agreement on Climate Change. Bhutan submitted its first Nationally Determined Contribution (NDC) under the Paris Agreement in 2015, and updated it in 2020. In NDCs, Bhutan reflects the role of forests in addressing climate change through mitigation and adaptation. Bhutan reported both conditional and unconditional mitigation and adaptation plans regarding the forest sector.

Table 2. Role of forests reported in NDCs

Mitigation		Adaptation
Unconditional	Conditional	
Y	Y	Y

* Y: reported/ N: unreported

3.1. Mitigation Targets

Bhutan's target is to remain carbon-neutral where total greenhouse gas (GHG) emissions do not exceed carbon sequestration by its forests and sinks. To keep the national commitment, the country has set mitigation targets for reforestation, forest conservation and sustainable

²Bhutan's Second Nationally Determined Contribution (NDC), (2021). pp.5-25.

forest management and enhancement of forest carbon stock through afforestation (Table 3)

Table 3. Forest-based mitigation targets

Afforestation	Reforestation	Conservation	REDD+	SFM
Y	Y	Y	N	Y

*SFM: Sustainable Forest Management

Source: <https://www.climatewatchdata.org/>

Table 4. Mitigation Targets for Forest Conservation and Management³

Actions	Targets
1. Improve forest management and conservation	Maintain 436 million tonnes of forest carbon stock outside protected area system
2. Maintain at least 50% of land area under protected area	Maintain 201 million tonnes of forest carbon stock in protected area 51.44% of land area and 31% of forest area
3. Enhancement of forest carbon stock through climate smart restoration	2000 hectares (ha) of plantation and restoration work
4. Initiate and promote agro-forestry (12th five years plan)	15 acres
5. Conservation of wetlands (State Reserved Forest)	Conduct wetland assessment for understanding organic carbon content

Table 5. Forest-based mitigation Policies/ Plans Actions in NDCs

	Afforestation	Reforestation	Conservation	REDD+	SFM	SLM	Wetlands
Policies	N	N	N	Y	N	N	N
Plans	N	Y	Y	N	Y	N	Y
Actions	N	N	N	N	N	N	Y

*SFM: Sustainable Forest Management/ SLM: Sustainable Land Management

Source: <https://www.climatewatchdata.org/>

3.2. Adaptation Plan

Bhutan developed her first National Adaptation Plan (NAP) and submitted to UNFCCC in 2023. NAP provides the foundation for Adaptation Communication to convey our priorities, plans, actions, and support needs for adaptation including progress in implementation of

³Bhutan's Second Nationally Determined Contribution (NDC), (2021). pp.5-25.

adaptation measures. The NAP identified the priority adaptation needs and actions in the water, agriculture, forests & biodiversity, and health sector.

3.3. International market-based cooperation

Bhutan considers Cooperative Approaches in the market and non-market mechanisms under Article 6 of the Paris Agreement as a primary policy instrument. The country welcomes the opportunity to engage in Cooperative Approaches for the trade of surplus carbon.

3.4. Relevance to the Forestry Sector

Under the National REDD+ Strategy and Action Plans (NRS & AP), Bhutan will continue to strengthen the conservation of existing forests and increase its adaptive capacity to climate change impacts without compromising opportunities for future economic development and prosperity.

Bhutan with no history of significant deforestation or forest degradation, the potential to engage in a results-based carbon payment system by upholding the net carbon sink is restricted. Consequently, the REDD+ strategy for conserving and managing a substantial portion of the country's forest land area is grounded in the belief that safeguarding Bhutan's land cover and climate-proofing the economy constitutes a strategic and more cost-effective investment compared to the restoration challenges faced by nations with prolonged deforestation histories. Bhutan's distinctive and commendable investments in forest sink management serve as a model, yielding transboundary benefits and offering valuable insights for other countries grappling with the effective protection and sustainable management of natural resources

Bhutan with no history of significant deforestation or forest degradation, the potential to engage in a results-based carbon payment system by upholding the net carbon sink has a limited scope. Consequently, the REDD+ strategy for conservation and management of country's forest land area is grounded in the belief safeguarding Bhutan's landcover and climate proofing the economy constitutes a strategic and more cost-effective investment compared to the restoration challenge faced by countries with high and prolonged histories of deforestation. Bhutan's distinctive and commendable investments in forest sink management serves as a model, yielding transboundary benefits and offering valuable insights for other countries grappling with the effective protection and sustainable management of natural resources.

4. UNFCCC WARSAW FRFRAMEWORK FOR REDD+ PROGRESS

To achieve the mitigation targets of forest conservation and management, Bhutan has been working to build an implementation framework: National REDD+ Strategy (NRS), National Forest Monitoring System (NFMS), Forest Reference (Emission) Level, and Safeguard Information System (SIS). Bhutan is planning to submit the National REDD+ Strategy & Action Plan and Safeguards Information System to UNFCCC very soon, which has been endorsed by the Department of Forests and Park Services and Ministry of Agriculture and Forests.

Table 6. Submission of UNFCCC Warsaw Framework for REDD+ elements

National Strategy / Action Plan	National Forest Monitoring System	Forest Reference Level / Forest Reference Emission Level	Safeguards Information System
N	Y	Y	N

Source: UN REDD+ web platform (<https://redd.unfccc.int>)

4.1 National REDD+ Strategy / Action Plan⁴

The National REDD+ Strategy & Action Plan along with Strategy Options have been endorsed and published in 2020. The strategy options are identified in a part of the second = NDC of Bhutan as a climate change mitigation option. The four strategy options are as follows: 1. Strengthening Forest Management Practices, 2. Climate Smart Primary Production, 3. Integrated Land Use Planning, 4. Improved Rural Livelihoods. Further, Gender action plan, capacity building needs, and development plan have been developed while the implementation proposal is under development.

4.2. Forest Reference (Emission) Levels (2020)⁵

Forest Reference Emission Level (FREL) and Forest Reference Level (FRL) were submitted to UNFCCC and assessed in 2020. The national FREL and FRL used a historical reference period 2005– 2014. The FREL constitutes the average historical emission during the reference period with upward adjustment within the scope of UNFCCC guidelines and Forest Carbon Partnership Methodologies while FRL is the annual average of the combined net removals from the sustainable management of forests, conservation of forest carbon stocks, and enhancement of forest carbon stocks with no adjustment.

⁴Bhutan’s Forest Carbon Partnership Facility (FCPF) Country Progress Report, (2020). pp.2-10.

⁵UNFCCC Report on the technical assessment of the proposed forest reference emission level and forest reference level of Bhutan submitted in 2020, (2020). pp.3-5.

The FREL and FRL presented in the modified submission, provide a benchmark for assessing the implementation of REDD+ activities, in part to help Bhutan meet the commitment set out in its nationally determined contribution, corresponding to 505,837 and –8,539,085 tCO₂ eq/year, respectively.

The proposed FREL and FRL include the pools of above-ground biomass, below-ground biomass, deadwood, litter, and SOC. Regarding GHGs, the submission includes CH₄, CO, CO₂ and N₂O. Non-CO₂ emissions accounted for around 43% of emissions during the reference period.

4.3. National Forest Monitoring System⁶

In line with 4/CP.15, 1/CP.16 and 11/CP.19, Department of Forest and Park Services (DoFPS), Ministry of Energy and Natural Resources (MoENR) has developed a robust and transparent National Forest Monitoring System (NFMS). National NFMS was developed with the following objectives: i) To 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 % forest cover in perpetuity; ii) To generate accurate and holistic data on forest area and carbon stock changes transparently and consistently using globally accepted methodologies for national and international reporting.

Based on the objective, NFMS is further divided into two categories (i) monitoring and (ii) measurement, reporting, and verification (MRV). NFMS is based on a combination of ground measurement through the National Forest Inventory (NFI) and remote sensing exercises to generate the state of the national forest report. NFMS of Bhutan is comprised of four components i) Satellite Land Monitoring System (SLMS), ii) Multipurpose National Forest Inventory (NFI); NFI comprising of a systematic sample design has been instituted and two cycles of NFI were implemented in 2012-2015 and 2022 -2023, iii) National GreenHouse Gas (GHG) Inventory, and iv) Web-portal to share the data transparently. Furthermore, additional monitoring tools such as the Forest Information Reporting and Monitoring System (<https://firms.dofps.gov.bt/>) and the Spatial Decision Support System (<https://sdss.dofps.gov.bt/>) have been integrated into NFMS to specifically improve data capture and reinforce the overall system.

4.4. Safeguard Information System⁷

As part of the REDD+ readiness process, the key drivers influencing society and the environment have been identified as well as the social and environmental impacts assessed.

⁶Bhutan's Forest Carbon Partnership Facility (FCPF) Country Progress Report, (2020). pp.2-10.

⁷Bhutan's Forest Carbon Partnership Facility (FCPF) Country Progress Report, (2020). pp.2-10.

The monitoring of the [Safeguard Information System](#) (SIS) has been established through the development of the [Environmental and Social Management Framework](#) (ESMF) and the completion of the [Strategic Environmental and Social Assessment](#) (SESA). Based on the SESA, a number of both positive and negative social and environmental impacts have been identified which are then integrated into the [National REDD+ Strategy](#) (NRS) under the relevant strategy options, in particular, under the most relevant Policy and Measures (PAMs). The [Feedback and Grievance Redress Mechanism](#) (FGRM) for the NRS of Bhutan has also been developed and this instrument will help address any potential impacts and grievances arising due to the REDD+ implementation

5. REDD+ PROJECTS / INITIATIVES

5.1. REDD+ Projects

Not available.

5.2. REDD+ Initiatives

Since joining the UN-REDD in 2010, Bhutan has initiated the UN-REDD readiness programs with the support of the UN-REDD.⁸ At first, Bhutan completed its feasibility assessment for REDD+ implementation with technical backing from SNV (Stichting Nederlandse Vrijwilligers) Netherlands Development Organization in 2010. Next, the country prepared its REDD+ Readiness Preparation Proposal (R-PP) for the Forest Carbon Partnership Facility (FCPF) fund with the support of UN-REDD, UNDP, FAO, and UNEP, and it was finally approved in 2013. Through two rounds of the FCPF Readiness Preparation Grant (2015, 2017) and UN-REDD supports, Bhutan developed and put in place an implementation framework from 2015-2021.

Bhutan also carried out German Agency for International Cooperation (GIZ) and International Centre for Integrated Mountain Development (ICIMOD) project for establishing preconditions for REDD+ (*REDD+ Himalayas: Developing and using experiences in implementing REDD+ in the Himalayas*) from 2013 to 2020.⁹ The project helped with capacity-building and training, empowering local communities to participate in REDD+ activities, and documenting and communicating the relevant information regarding the NFI, forest biomass, and forest carbon.¹⁰

⁸UN-REDD Programme – Asia Pacific – Bhutan Official Website. Website:<https://www.un-redd.org/partner-countries/asia-pacific/bhutan>

⁹GIZ and ICIMOD Report, (2020). Benefiting from the REDD+ Himalaya Programme. pp. 27-32.

¹⁰SNV report, (2010). Feasibility of REDD+ in Bhutan A scoping study final report. pp.7-11.

Table 7. REDD+ Initiatives (Completed) ¹¹

Development Partner	Initiatives	Objectives	Period
SNV	Feasibility assessment for REDD+ implementation	Technical assistance for the feasibility study of REDD+	2010
UN-REDD	1st Targeted Support	Contribution to formulation of national REDD+ strategy	2011
UN-REDD	Readiness Preparation Proposal (R-PP) for the FCPF fund	To support the preparation of R-PP	2013
UN-REDD	2nd Targeted Support	The development of Bhutan's National REDD+ Strategy	2014
UN-REDD	3rd Targeted Support	Enhanced capacity to complete a National Forest Inventory as part of a NFMS, Capacity built on FREL/FRL, Satellite Land Monitoring System, and GHG inventory for the Land Use, Land-Use Change and Forestry (LULUCF) Sector	2015
GIZ, ICIMOD	Developing and using experiences in implementing REDD+ in the Himalayas	¹² Capacity building and training, technical and organizational advice, and the development of methods for the measurement, reporting and verification of carbon storage	2013-2020
FCPF	FCPF Readiness Fund	Development of the Warsaw Framework	2015
FCPF	FCPF Readiness Fund	Development of the Warsaw Framework	2018

¹¹) Bhutan's Watershed Management Division REDD+ Secretariat website

²) Bhutan's FCPF Country Progress Report (2020)

¹²GIZ Official Website, Projects. Website: <https://www.giz.de/en/worldwide/26913.html>

ACKNOWLEDGMENTS

The information contained in this Fact Sheet has been reviewed and validated by the following officials from the Department of Forests and Park Services, Ministry of Energy and Natural Resources (MoENR), Royal Government of Bhutan:

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