Aichi Biodiversity Target 11 Country Dossier:
BHUTAN

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GLOSSARY

AZEs   Alliance for Zero Extinction sites
CEPF   Critical Ecosystem Partnership Fund
EEZ   Exclusive Economic Zone
GCF   Green Climate Fund
GD-PAME   Global Database on Protected Area Management Effectiveness
GEF   Global Environment Facility
IBA   Important Bird and Biodiversity Area
ICCAs   Indigenous and Community Conserved Area Area (may also be referred to as territories and areas conserved by Indigenous peoples and local communities or "territories of life")
IPLC   Indigenous Peoples and Local Communities
KBA   Key Biodiversity Area
NBSAP   National Biodiversity Strategy and Action Plan
OECM   Other Effective Area-Based Conservation Measures
PA   Protected Area
PAME   Protected Area Management Effectiveness
PPA   Privately Protected Area
ProtConn   Protected Connected land indicator
SOC   Soil Organic Carbon
TEOW   Terrestrial Ecosystems of the World
WDPA   World Database on Protected Areas
WD-OECM World Database on Other Effective Area-Based Conservation Measures

Disclaimer

The designations employed and the presentation of material in this dossier do not imply the expression of any opinion whatsoever on the part of the Secretariat of the Convention on Biological Diversity (SCBD) or United Nations Development Programme (UNDP) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The information contained in this publication do not necessarily represent those of the SCBD or UNDP.

This country dossier is compiled by the UNDP and SCBD from publicly available information. It is prepared, within the overall work of the Global Partnership on Aichi Biodiversity Target 11, for the purpose of attracting the attention of the Party concerned and other national stakeholders to facilitate the verification, correcting, and updating of country data. The statistics might differ from those reported officially by the country due to differences in methodologies and datasets used to assess protected area coverage and differences in the base maps used to measure terrestrial and marine area of a country or territory. Furthermore, the suggestions from the UNDP and SCBD are based on analyses of global datasets, which may not necessarily be representative of national policy or criteria used at the national level. The analyses are also subject to the limits inherent in global indicators (precision, reliability, underlying assumptions, etc.). Therefore, they provide useful information but cannot replace analyses at a national level nor constitute a future benchmark for national policy or decision-making.

EXECUTIVE SUMMARY

This document provides information on the coverage of protected areas (PAs) and other effective area-based conservation measures (OECMs), as currently reported in global databases (the World Database on Protected Areas (WDPA) and World Database on Other Effective Area-Based Conservation Measures (WD-OECM)). It also includes details on the status of the other qualifying elements of Aichi Biodiversity Target 11 based on this data. These statistics might differ from those reported officially by countries due to difference in methodologies and datasets used to assess protected area coverage, differences in the base maps used to measure terrestrial and marine area of a country or territory, or if global datasets differ from the criteria and indicators used at the national level. Where available, data from national statistics for the elements of Target 11 are included alongside records from these global databases. This dossier also provides a summary of commitments made under Aichi Biodiversity Target 11, and a summary of potential opportunities regarding elements of the target for future planning.

The dossier has been developed in consultation with the UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), which manages the WDPA, WD-OECM and Global Database on Protected Area Management Effectiveness (GD-PAME). Parties to the CBD are requested to contact protectedareas@unep-wcmc.org with any updates to the information in these databases.

Aichi Biodiversity Target 11 Elements: Current status and opportunities for action

Coverage

- **Status:** as of May 2021 (per the WDPA), terrestrial coverage in Bhutan is 19,834.7 km^2 (49.7%); per Bhutan's national reporting coverage is 19,763 km^2 (51.47%).

- **Opportunities for action:** opportunities for the near-term include updating reporting OECMs to the WD-OECM (for example, Community Forests, Forest Management Units or Local Forest Management Areas). In the future, focus on relatively intact areas, while addressing the elements in the following sections, could be considered if planning new PAs or OECMs.

Ecological Representativeness

- **Status:** Bhutan contains 8 terrestrial ecoregions: the mean coverage by reported PAs and OECMs is >50% and all ecoregions have at least 25% coverage from PAs and OECMs.

- **Opportunities for action:** there is opportunity for Bhutan to focus on effective management for terrestrial ecoregions that already have higher levels of coverage by PAs or OECMs.

Areas Important for Biodiversity

- **Status:** mean protected coverage of KBAs by reported PAs and OECMs is 47.1%, while 8 KBAs have no coverage by reported PAs and OECMs. Reassessment of existing IBAs, as well as potential KBA identification in Bhutan is ongoing. The country has developed a national Guideline for classifying and managing KBAs.

- **Opportunities for action:** there is opportunity for Bhutan to increase protection of KBAs that have lower levels of coverage by PAs and OECMs; priority could be given to those with no current coverage. There is also opportunity to complete the national reassessment of KBAs.

Areas Important for Ecosystem Services

- **Status:** coverage of areas important for ecosystem services: in Bhutan, PAs and OECMs cover around 46% of the total AGB in Bhutan's forest, and around 58% of the total BGB carbon of the country.

- **Opportunities for action:** for carbon, there is opportunity for Bhutan to focus on effective management for PAs and OECMs in terrestrial areas with high carbon stocks. Protecting areas with high carbon stocks secures the benefits of carbon sequestration in the area.

- For water, there is opportunity to increase the area of the water catchment under protection by PAs and OECMs, or in cases where there is high levels of protection, focus on effective management for these areas. Protecting the current area of forested land and potentially reforesting would have benefits for improving water security.

Connectivity and Integration

- **Status:** coverage of protected-connected lands is 51.47% (relative connectivity of PAs in Bhutan is 100%). Bhutan has created a system of biological corridors connecting all PAs, as well as several initiatives for the integration of PAs and OECMs into the wider landscape (e.g., The Kanchanjunga Landscape Conservation Development Initiative).

- **Opportunities for action:** there is opportunity to focus on PA and OECM management for enhancing and maintaining connectivity.

- As well, a range of suggested steps for enhancing and supporting integration are included in the voluntary guidance on the integration of PAs and OECMs into the wider land- and seascapes and mainstreaming across sectors to contribute, inter alia, to the SDGs (Annex I of COP Decision 14/8).

Governance Diversity

- **Status:** 100% of sites in Bhutan are under governance by Government (Federal or national ministry or agency).

- **Opportunities for action:** explore opportunities for governance types that have lower representation, for Bhutan this could relate to shared governance, etc.

- There is also opportunity for Bhutan to complete governance and equity assessments, to establish baselines and identify relevant actions for improvement. As well, a range of suggested actions are included in the voluntary guidance on effective governance models for management of protected areas, including equity (Annex II of COP Decision 14/8).

Protected Area Management Effectiveness

- **Status:** 78.7% of terrestrial PAs have completed Protected Area Management Effectiveness (PAME) assessments reported. Bhutan METT+ has been completed for all National parks and Royal Botanical Parks; assessments for Biological Corridors (BCs) are ongoing.

- **Opportunities for action:** the 60% target for completed management effectiveness assessments (per COP Decision X/31) **has** been met for terrestrial PAs, therefore, the 60% target for protected area management effectiveness has been met. Further increasing this percentage (including the completion of assessments for the remaining BCs) could be beneficial overall for understanding how well protected areas are being managed.

- There is also opportunity to implement the results of completed PAME evaluations, to improve the quality of management for existing PAs and OECMs (e.g. through adaptive management and information sharing, increasing the number of sites reporting 'sound management') and to increase reporting of biodiversity outcomes in PAs and OECMs.

INTRODUCTION

The Strategic Plan for Biodiversity 2011-2020 was adopted at the tenth meeting of the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) held in Nagoya, Aichi Prefecture, Japan from 18-29 October 2010. The vision of the Strategic Plan is one of "Living in harmony with nature" where *"By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people"* (CBD, 2010). In addition to this vision, the Strategic Plan is composed of 20 targets, under five strategic goals. Aichi Biodiversity Target 11 states that *"By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes."*

With the conclusion of the Aichi Biodiversity Targets in 2020, Target 11 on area-based conservation has seen success in the expansion of the global network of protected areas (PA) and other effective area-based conservation measures (OECMs). The negotiation of the post-2020 Global Biodiversity Framework (GBF) and its future targets provide an essential opportunity to further improve the coverage of PAs and OECMs, to improve other aspects of area-based conservation, to accelerate progress on biodiversity conservation more broadly, while also addressing climate change, and the Sustainable Development Goals. This next set of global biodiversity targets are to be adopted at the fifteenth meeting of the Conference of the Parties to the Convention on Biological Diversity. These new targets must aim to build upon lessons learned from the last decade of progress to deliver transformative change for the benefit of nature and people, to realize the 2050 Vision for biodiversity.

The United Nations Development Programme (UNDP) and the Secretariat of the Convention on Biological Diversity have developed the Aichi Biodiversity Target 11 Country Dossiers, which provide countries with an overview of the status of Target 11 elements, opportunities for action, and a summary of commitments made by Parties over the last decade. Each dossier can support countries in assessing their progress on key elements of Aichi Biodiversity Target 11 and identifying opportunities to prioritize new protected areas and OECMs.

This dossier provides an overview of area-based conservation in Bhutan. Section I of the dossier presents data on the current status of Bhutan's PAs and OECMs. The data presented in Section I relates to each element of Target 11. Section I also presents the PA and OECM coverage for two critical ecosystem services: water security and carbon stocks. In addition, the dossier presents potential opportunities for action for Bhutan, in relation to each Target 11 element. The analyses present options for improving Bhutan's area-based conservation network to achieve enhanced protection and benefits for livelihoods and climate change. Section II presents details on Bhutan's existing PA and OECM commitments as a summary of existing efforts towards achieving Target 11. This gives focus not only to national policy and actions but also voluntary commitments to the UN. Furthermore, where

data is available, this dossier provides information on potential OECMs, Indigenous and Community Conserved Areas (ICCAs; also, often referred to as territories and areas conserved by Indigenous peoples and local communities or "territories of life") and Privately Protected Areas (PPAs) and the potential contribution they will have in achieving the post-2020 targets.

The information on PAs and OECMs presented here is derived from the World Database on Protected Areas (WDPA) and World Database on Other Effective Area-Based Conservation Measures (WD-OECM). These databases are joint products of UNEP and IUCN, managed by UNEP-WCMC, and can be viewed and downloaded at www.protectedplanet.net. Parties are encouraged to provide data on their PAs and OECMs to UNEP-WCMC for incorporation into the databases (see e.g., Decisions 10/31 and 14/8). The significant efforts of Parties in updating their data in the build up to the publication of the Protected Planet Report 2020 (UNEP-WCMC and IUCN, 2021) were greatly appreciated. UNEP-WCMC welcomes further updates, following the data standards described here (www.wcmc.io/WDPA_Manual), and these should be directed to protectedareas@unep-wcmc.org. The statistics presented in this dossier are derived from the May 2021 WDPA and WD-OECM releases, unless explicitly stated otherwise. Readers should consult www.protectedplanet.net for the latest coverage statistics (updated monthly).

Some data from the WDPA and WD-OECM are not made publicly available at the request of the data-provider. This affects some statistics, maps, and figures presented in this dossier. Statistics provided by UNEP-WCMC (terrestrial and marine coverage) are based upon the full dataset, including restricted data. All other statistics, maps, and figures are based upon the subset of the data that is publicly available.

Where data is less readily available, such as for potential OECMs, ICCAs and PPAs, data has also been compiled from published reports and scientific literature to provide greater awareness of these less commonly recorded aspects. These data are provided to highlight the need for comprehensive reporting on these areas to the WDPA and/or WD-OECM. Parties are invited to work with indigenous peoples, local communities and private actors to submit data under the governance of these actors, with their consent, to the WDPA and/or WD-OECM.

Overall, PAs and OECMs are essential instruments for biodiversity conservation and to sustain essential ecosystem services that support human well-being and sustainable development, including food, medicine, and water security, as well as climate change mitigation and adaptation and disaster risk reduction. The data in this dossier, therefore, aims to celebrate the current contributions of PAs and OECMs, whilst the gaps presented hope to encourage greater progress, not just for the benefit of biodiversity and the post-2020 GBF, but also to recognize the essential role of PAs and OECMs to the Sustainable Development Goals and for addressing the climate crisis.

SECTION I: CURRENT STATUS

Aichi Biodiversity Target 11 refers to both protected areas (PAs) and other effective area-based conservation measures (OECMs). This section provides the current status for all elements of Aichi Biodiversity Target 11 where indicators with global data are available. Statistics for all elements are presented using data on both PAs and OECMs (where this data is available and reported in global databases like the WDPA and WD-OECM). It is recognized that statistics reported in the WPDA and WD-OECM might differ from those reported officially by countries due to differences in methodologies and datasets used to assess protected area coverage and differences in the base maps used to measure terrestrial and marine area of a country or territory. Details on UNEP-WCMC's methods for calculating PA and OECM coverage area available here. The global indicators adopted here for presenting the status of other elements of Target 11 may also differ from those in use nationally. Where available, results from national reporting are also included.
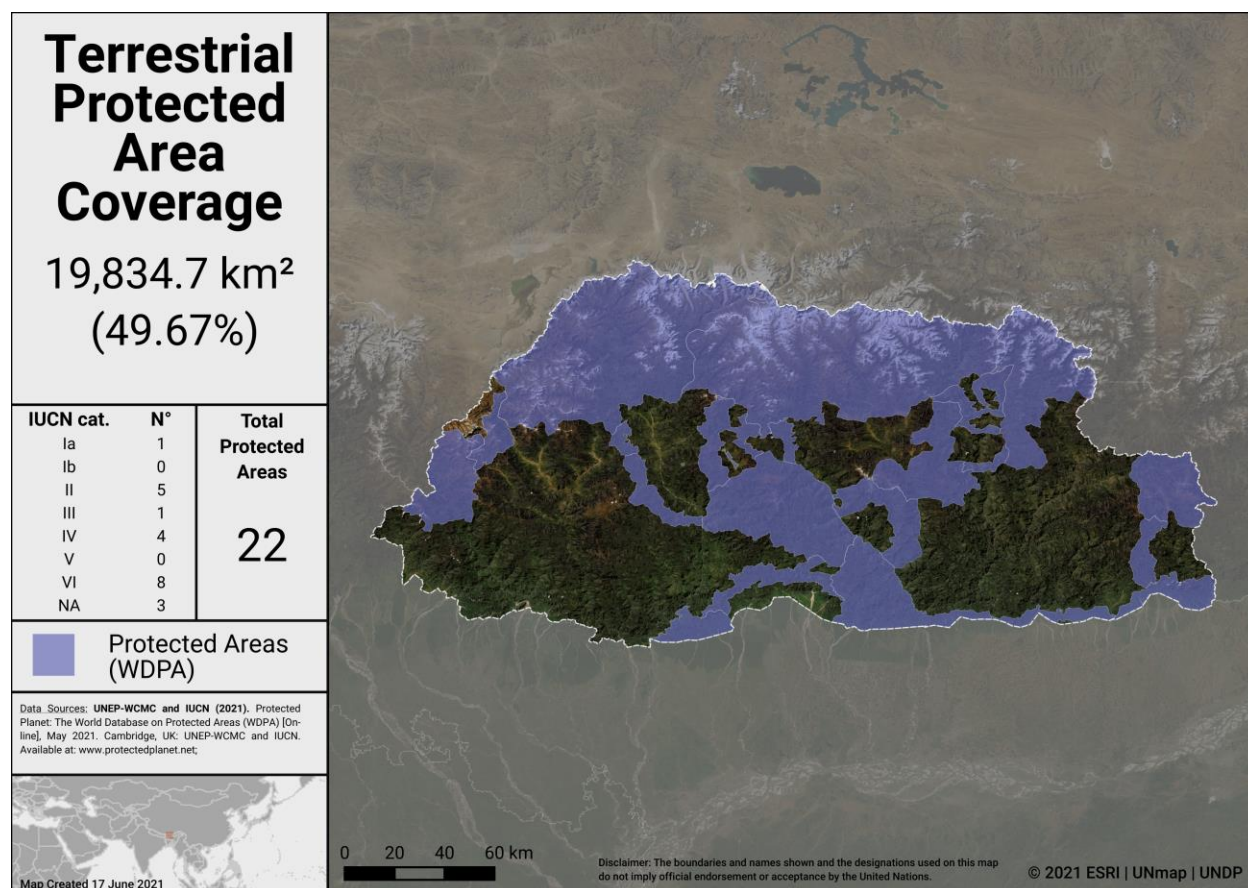
COVERAGE

As of May 2021, Bhutan has **22** protected areas reported in the World Database on Protected Areas (WDPA); which include 5 National Parks, 4 Wildlife Sanctuaries, 1 Strict Nature Reserve and 8 Biological Corridors, 1 Botanical Park, 3 Ramsar Sites

As of May 2021, Bhutan has **0** OECMs reported in the world database on OECMs (WD-OECM).

Bhutan reports national PA coverage of 19,763.06 km² (or 51.47%)[1].

Terrestrial Protected Area Coverage

19,834.7 km²
(49.67%)

IUCN cat.	N°	Total Protected Areas
Ia	1	
Ib	0	
II	5	
III	1	
IV	4	**22**
V	0	
VI	8	
NA	3	

Protected Areas (WDPA)

Data Sources: **UNEP-WCMC and IUCN (2021).** Protected Planet: The World Database on Protected Areas (WDPA) [Online], May 2021. Cambridge, UK: UNEP-WCMC and IUCN. Available at: www.protectedplanet.net;

Map Created 17 June 2021

0 20 40 60 km

Disclaimer: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

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Terrestrial Protected Areas in Bhutan (based on the May 2021 WDPA). Actual coverage in Bhutan is 19,763.06 km² (or 51.47%).

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[1] Bhutan's total land area per official figures is 38,394 km². The WDPA currently lists PA coverage for Bhutan of 49.7% (22 protected areas, 19,834.7 km²).

Potential OECMs

The initiatives in Bhutan that use the concept of OECM include: Community Forests (CF), Forest Management Units (FMU), and Local Forest Management Areas (LFMA).

Community forestry (CF) is an institutional approach for preserving forest resources while providing rural households with forest products. The concept of Community Forestry was introduced in Bhutan in 1992. Fully supported by the National Forest Policy, the Forest and Nature Conservation Act and Rules of the Royal Government of Bhutan and guided by the National Strategy for Community Forestry (2010), community forestry is rapidly becoming a significant movement as rural communities become empowered to sustainably manage their natural resources. Community forestry is exemplary of Bhutan's national vision of placing sustainable management and conservation of natural resources at the forefront of development.

Forest Management Unit (FMU) is State Reserved Forest (areas outside the PA system) land brought under scientific forest management regime based on the principle of sustainable management of resource utilization and conservation pertaining to timbers, non-wood forest products (NWFP), ecosystem services and wildlife conservation etc.

Local Forest Management Areas (LFMAs) is State Reserved Forest (but areas without any management regimes such as PAS, FMUs and CFs) land brought under scientific forest management regime based on the principle of sustainable management of resource utilization and conservation.

All three initiatives have dedicated sustainable conservation areas in their management plans.

Opportunities for action

Opportunities for the near-term include recognizing and reporting OECMs to the WD-OECM (for example, Community Forests, Forest Management Units or Local Forest Management Areas). In the future, as Bhutan considers where to add new PAs and OECMs, the map below identifies areas in Bhutan where intact areas are not currently protected. Focus on relatively intact areas, while addressing the elements in the following sections, could be considered if planning new PAs or OECMs.
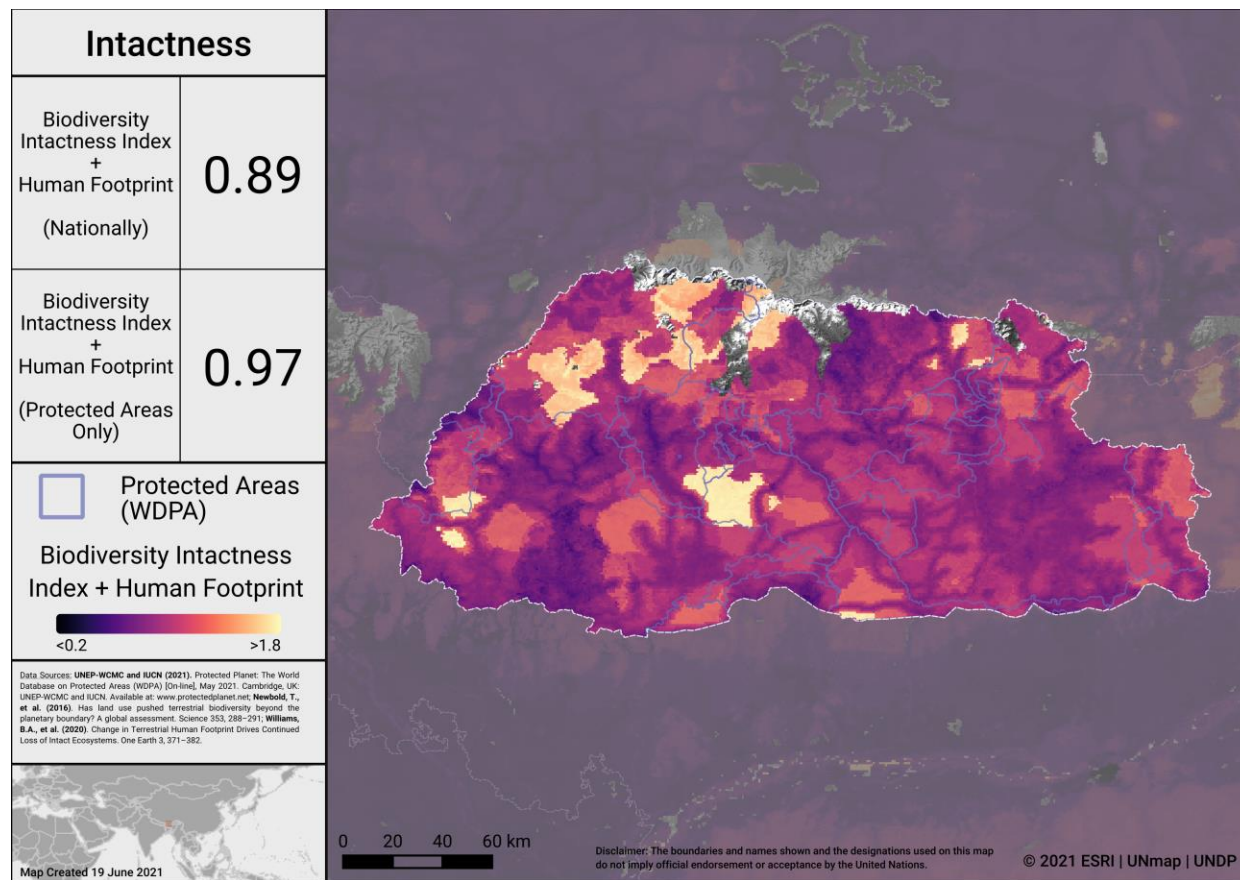
Intactness in Bhutan

To explore more on intactness visit the UN Biodiversity Lab: map.unbiodiversitylab.org.

ECOLOGICAL REPRESENTATIVENESS

Ecological representativeness is assessed based on the PAs and OECMs coverage of broad-scale biogeographic units. Globally, ecoregions have been described for terrestrial areas (Dinerstein et al, 2017), marine coastal and shelf ecosystems (to a depth of 200m; Spalding et al 2007) and surface pelagic waters (Spalding et al 2012).

Bhutan has 8 **terrestrial** ecoregions. Out of these:

- All 8 ecoregions have >17% coverage from PAs and OECMs.
- The average coverage of terrestrial ecoregions is 57.8%.

A full list of ecoregions in Bhutan is available in Annex I.
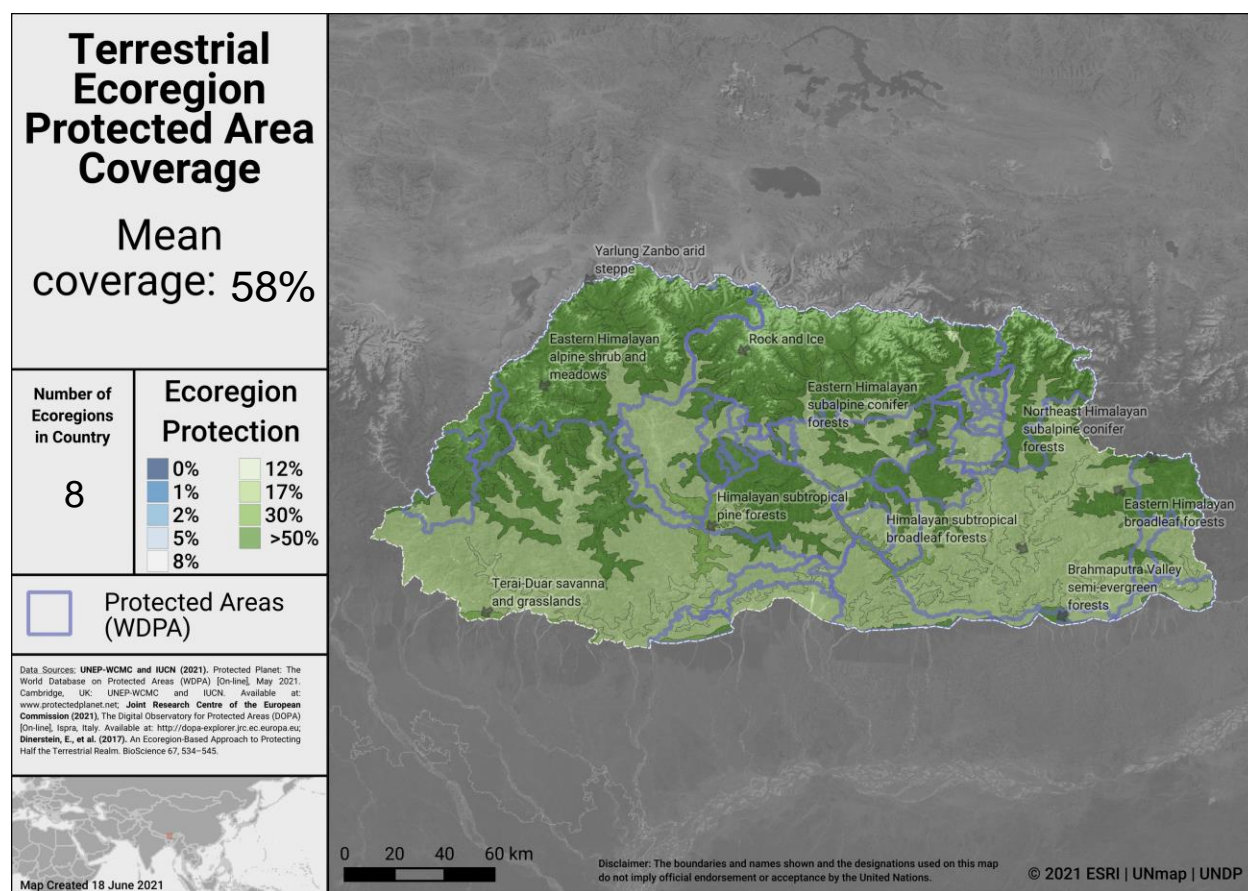
Terrestrial ecoregions in Bhutan
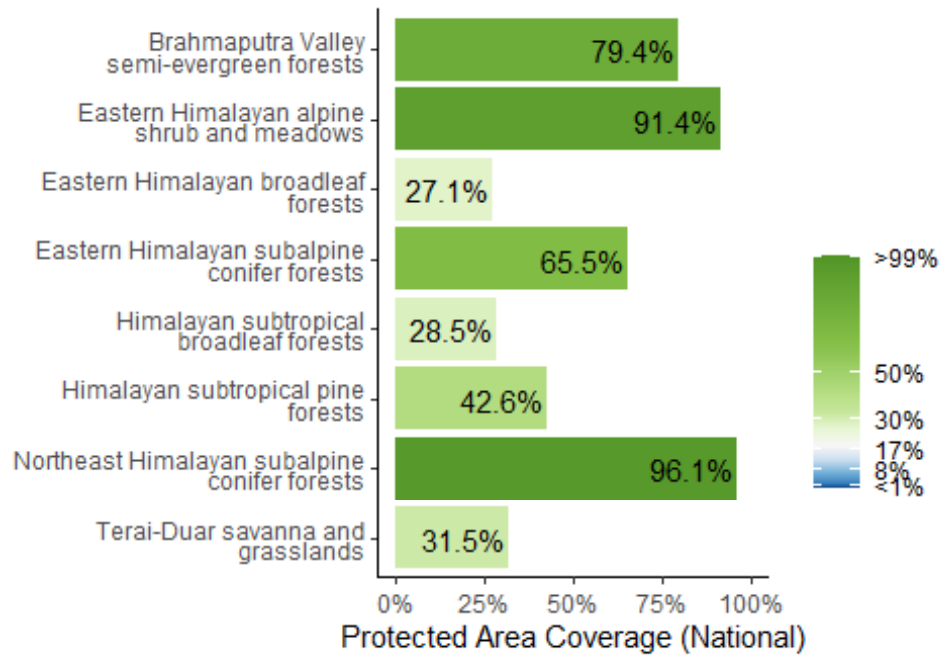
Terrestrial ecoregions of the World (TEOW) in Bhutan

Opportunities for action

There is opportunity for Bhutan to focus on effective management for terrestrial ecoregions that already have higher levels of coverage by PAs or OECMs.

AREAS IMPORTANT FOR BIODIVERSITY
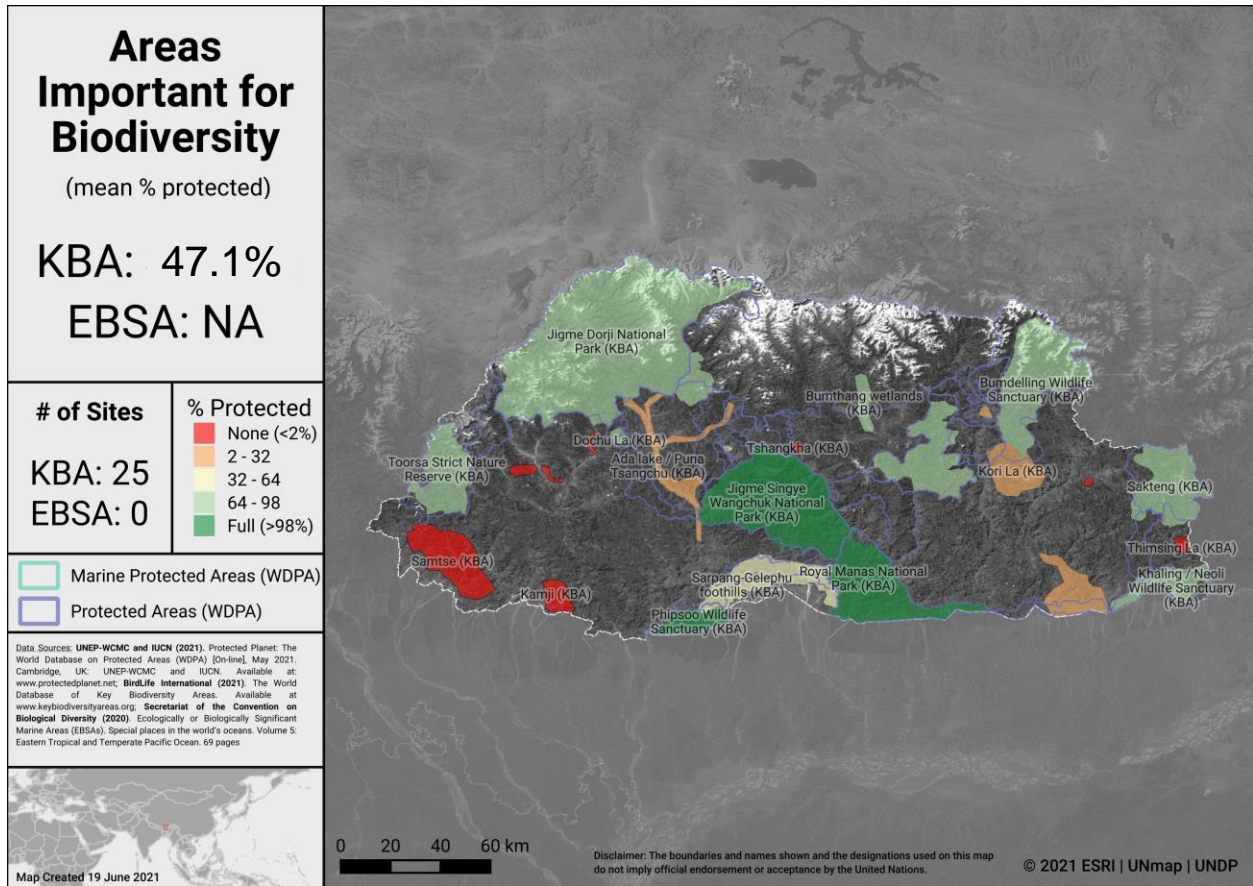
Key Biodiversity Areas (KBAs)

Protected area and OECM coverage of Key Biodiversity Areas (KBAs) provide one proxy for assessing the conservation of areas important for biodiversity at national, regional and global scales. KBAs are sites that make significant contributions to the global persistence of biodiversity (IUCN, 2016). The KBA concept builds on four decades of efforts to identify important sites for biodiversity, including Important Bird and Biodiversity Areas, Alliance for Zero Extinction sites, and KBAs identified through Hotspot ecosystem profiles supported by the Critical Ecosystem Partnership Fund. Incorporating these sites, the dataset of internationally significant KBAs includes Global KBAs (sites shown to meet one or more of 11 criteria in the Global Standard for the Identification of KBAs, clustered into five categories: threatened biodiversity; geographically restricted biodiversity; ecological integrity; biological processes; and irreplaceability), Regional KBAs (sites identified using pre-existing criteria and thresholds, that do not meet the Global KBA criteria based on existing information), and KBAs whose Global/Regional status is Not yet determined, but which will be assessed against the global KBA criteria within 8-12 years. Regional KBAs are often of critical international policy relevance (e.g., in EU legislation and under the Ramsar Convention on Wetlands), and many are likely to qualify as Global KBAs in future once assessed for their biodiversity importance for other taxonomic groups and ecosystems. To date, nearly 16,000 KBAs have identified globally, and information on each of these is presented in the World Database of Key Biodiversity Areas: www.keybiodiversityareas.org.

Bhutan has 25 Key Biodiversity Areas (KBAs); these include 23 IBAs and 2 KBAs identified in the CEPF Ecosystem Profile of the Eastern Himalayas Hotspot (2005).[2]

- Mean percent coverage of all KBAs by PAs and OECMs in Bhutan is **47.1%**.
- **3** KBAs have full (>98%) coverage by PAs and OECMs.
- **14** KBAs have partial coverage by PAs and OECMs.
- **8** KBAs have no (<2%) coverage by PAs and OECMs.

Bhutan has 23 Important Bird Areas (IBAs) which are a subset of KBAs. All 23 IBAs are currently under reassessment. Potential KBA identification in Bhutan is ongoing. The country has developed a national Guideline for classifying and managing KBAs.

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[2] Dochu La and Sakteng (see details at: http://www.keybiodiversityareas.org/kba-data).

Areas Important for Biodiversity in Bhutan
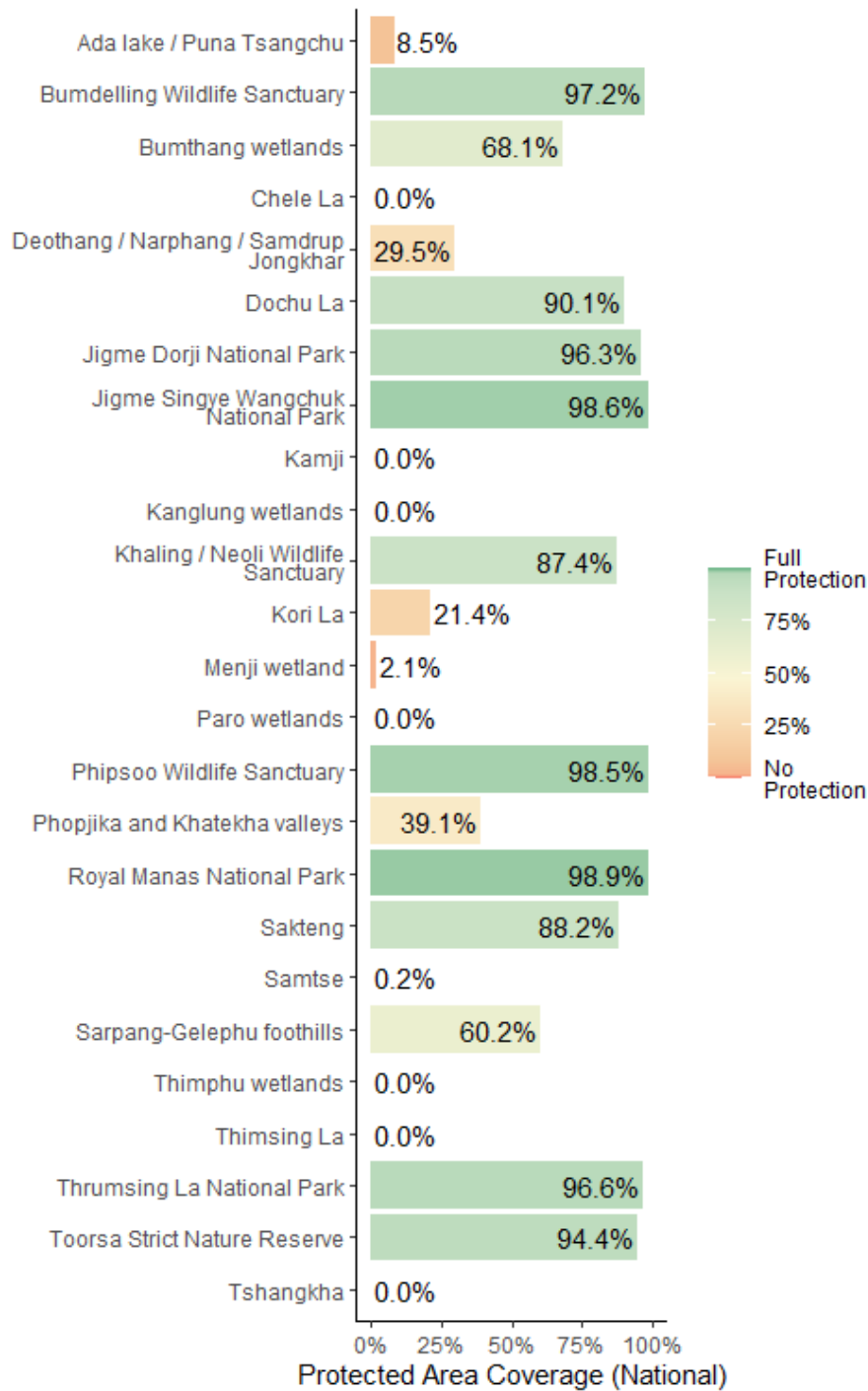
Key Biodiversity Area Coverage (KBA) in Bhutan

Opportunities for action

There is opportunity for Bhutan to increase protection of KBAs that have lower levels of coverage by PAs and OECMs; priority could be given to those with no current coverage. There is also opportunity to compete the national reassessment of KBAs.

AREAS IMPORTANT FOR ECOSYSTEM SERVICES

There is no single indicator identified for assessing the conservation of areas important for ecosystem services. For simplicity, two services with available global datasets are assessed here (carbon and water). In future, other critical ecosystem services could be explored.

Carbon

The total biomass of forests in Bhutan is 972.91 million tonnes, which is equivalent to 457.27 million tonnes of carbon. In addition, forest soils store around 187.85 million tonnes of carbon. Therefore, the total carbon stock of Bhutan's forests is estimated to be around 645.12 million tonnes. From the total biomass carbon, aboveground biomass (AGB) is major carbon, pool representing 53.64% of total forest carbon stocks, with belowground biomass (BGB) representing 13.08% of the total carbon stock.

The AGB represents 346.04 million tonnes of carbon in Bhutan's forest, out of which PAs and OECMs (including biological corridors, forest management units, and community forests) cover around 159.40 million tonnes of carbon, which is approximately 46% of the total AGB in Bhutan's forest. Further, Bhutan's PA and OECMs cover about 43.25 million tonnes BGB carbon, approximately 58% of the total BGB carbon of the country. In total, the AGB and BGB carbon of PAs represents around 31% of the total biomass carbon of Bhutan's forests.

Water

Forests support stormwater management and clean water availability, especially for large urban populations. Research that has examined the role of forests for city drinking water supplies shows that of the world's 105 largest cities, more than 30% (33 cities) rely heavily on the local protected forests, which provide ecosystem services that underpin local drinking water availability and quality (Dudley & Stolton, 2003). Intact catchments support more consistent water supply and improved water quality.

Drinking water supplies for cities in Bhutan may similarly depend on protected forest areas within and around water catchments. Intact catchments can support more consistent water supply and improved water quality.

Payment for Ecosystem Services

The National Payment of Environment Services Framework (PES) of Bhutan (2015) and a PES Field Guideline have been developed to facilitate PES implementation. At the same time, in addition to existing the PES scheme in Yakpugang Community Forest Management Group (CFMG), new PES sites in Pasakha and Namey-Nichu in Paro were established.

A Payment for Environment Services (PES) framework has been developed based on which a few water-based PES schemes are under implementation. Some ecotourism projects have been implemented while others are in the pipelines. Upscaled nature recreation and ecotourism programs in the country.

Opportunities for action

For carbon, there is opportunity for Bhutan to focus on effective management for PAs and OECMs in terrestrial areas with high carbon stocks, as identified in the map above. Protecting areas with high carbon stocks secures the benefits of carbon sequestration in the area.

For water, there is opportunity to increase the area of the water catchment under protection by PAs and OECMs, or in cases where there is high levels of protection, focus on effective management for these areas. Protecting the current area of forested land and potentially reforesting would have benefits for improving water security.

CONNECTIVITY & INTEGRATION

Two global indicators, the Protected Connected land indicator (ProtConn; EC-JRC, 2021; Saura et al., 2018) and the PARC-Connectedness indicator (CSIRO, 2019), have been proposed for assessing the terrestrial connectivity of PA and OECM networks (to date there is no global indicator for assessing marine connectivity).

Protected Connected Land Indicator (Prot-Conn)

As of January 2021, as reported in the Joint Research Centre of the European Commission's Digital Observatory for Protected Areas (DOPA) (JRC, 2021), the coverage of protected-connected lands (a measure of the connectivity of terrestrial protected area networks, assessed using the ProtConn indicator) in Bhutan was 51.47%; relative connectivity for PAs in Bhutan is 100%.

PARC-Connectedness Index

In 2019, as assessed using the PARC-Connectedness Index (values ranging from 0-1, indicating low to high connectivity), connectivity in Bhutan is 0.41. This represents no significant change since 2010.

Corridor, transboundary conservation, and integration into the wider landscape

Bhutan has created a system of biological corridors (designated in 1999 and reported in the WDPA) connecting all protected areas.

All biological corridors were thoroughly reviewed and re-demarcated. A few biological corridors already have Conservation Management Plans in place, while a few are under various stages of development. The legal status of the biological corridors, as per the revised *FNCRR 2017*, are now at par with that of National Parks, Wildlife Sanctuaries and Strict Nature Reserves. Some studies have been done on Biological Corridors such as Functionality assessment and structural connectivity of BC 1 and BC 8, respectively.

Some initiatives for integration of PAs and OECMs into the wider landscape are underway, and include: The Kanchanjunga Landscape Conservation Development Initiative (India, Bhutan and Nepal) and the Transboundary Manas Conservation Area (Bhutan and India) have been initiated in collaboration with ICIMOD and WWF respectively.

Opportunities for action

There is opportunity to focus on PA and OECM management for enhancing and maintaining connectivity. Maintaining connectivity increases the effectiveness of PAs and OECMs and reduces the impacts of fragmentation.

As well, a range of suggested steps for enhancing and supporting integration are included in the voluntary guidance on the integration of PAs and OECMs into the wider land- and seascapes and mainstreaming across sectors to contribute, inter alia, to the SDGs (Annex I of COP Decision 14/8).

GOVERNANCE DIVERSITY

There is a lack of comprehensive global data on governance quality and equity in PAs and OECMs. Here, we provide data on the diversity of governance types for reported sites.

100% of PAs in Bhutan are under governance by Government (Federal or national ministry or agency).

As of May 2021, PAs in Bhutan reported in the WDPA have the following governance types:

- 86.4% are governed by **governments** (by federal or national ministry or agency
- 0.0% are under **shared** governance
- 0.0% are under **private** governance
- 0.0% are under **IPLC** governance
- 13.6% **do not** report a governance type
  - (All of which are international designations and fall under governance by Government - Federal or national ministry or agency)

OECMs

As of May 2021, there are **0** OECMs in Bhutan reported in the WD-OECM, therefore there is no data available on OECM governance types.

Privately Protected Areas (PPAs)

There is currently no data available on PPAs for Bhutan (see Gloss et al., 2019, and Stolton et al., 2014 for details)

Territories and areas conserved by Indigenous Peoples and local communities (ICCAs)

There is currently no data available on ICCAs for Bhutan (see Kothari et al., 2012 and the ICCA Registry for further details).

Other Indigenous lands

There is currently no data available on lands managed and/or controlled by Indigenous Peoples in Bhutan (see Garnett et al 2018 for details)

Opportunities for action

Explore opportunities for governance types that have lower representation, for Bhutan this could relate to shared governance, etc. There is also opportunity for Bhutan to complete governance and equity assessments, to establish baselines and identify relevant actions for improvement. Examples of existing tools and methodologies include: Governance Assessment for Protected and Conserved Areas (Franks & Brooker, 2018), Social Assessment of Protected Areas (Franks et al 2018), and Site-level assessment of governance and equity (IIED, 2020). As well, a range of suggested actions are included in the voluntary guidance on effective governance models for management of protected areas, including equity (Annex II of COP Decision 14/8).

PROTECTED AREA MANAGEMENT EFFECTIVENESS

This section provides information on the coverage of PAs and OECMs with completed protected area management effectiveness (PAME) assessments as reported in the global database (GD-PAME). The proportion of terrestrial and marine PAs with completed PAME assessments is also calculated and compared with the 60% target agreed to in COP-10 Decision X/31. Information is also included regarding changes in forest cover nationally within PAs and OECMs.

Protected area management effectiveness (PAME) assessments

Bhutan Management Effectiveness Tracking Tool plus (Bhutan METT+) has been completed for all parks and Royal Botanical Parks. Assessments for Biological Corridors (BCs) are ongoing.

Application of the Ramsar Site Management Effectiveness Tracking Tool (R-METT) assessment is ongoing. Trainings on R-METT have also been given to the field staff.

As of May 2021, Bhutan has 22 PAs reported in the WDPA; of these PAs, 8 (36.4%) have management effectiveness evaluations reported in the global database on protected area management effectiveness (GD-PAME).

- 39.1% (15,603 km^2) of the terrestrial area of the country is covered by PAs with completed management effectiveness evaluations.
    - 78.7% of the area of terrestrial PAs have completed evaluations.

The 60% target for completed management effectiveness assessments (per COP Decision X/31) **has** been met for terrestrial PAs.

As of May 2021, there are 0 OECMs in Bhutan reported in the D-OECM and no information available on the management effectiveness of potential OECMs.

Changes in forest cover

Forest cover in Bhutan is 27,171 km^2 (70.77% of the country), of which 19,761 km^2 (72.7% of forest area; 51.47% of the country) is within the protected area estate.

Deforestation data computed using the Global Forest Change (GFC) product (Hansen et al., 2013) for the development of the Forest Reference Emission Level (FREL) estimated a total of 2,633.89 ha of forest loss over 10 years (2005-2009 and 2010-2014). Accordingly, this results to an annual deforestation rate of 0.01%, with an annual deforestation of 263.39 ha (in a total forest area of 2,705,291 ha). This represents the total deforestation area and deforestation rate of the country; a specific computation for PAs was not completed, however, it is assumed that a majority of the deforestation is outside the PA estate.

Opportunities for action

The 60% target for completed management effectiveness assessments (per COP Decision X/31) **has** been met for terrestrial PAs. Further increasing this percentage (including the completion of assessments for the remaining biological corridors) could be beneficial overall for understanding how well protected areas and corridors are being managed.

There is also opportunity to implement the results of completed PAME evaluations, to improve the quality of management for existing PAs and OECMs (e.g., through adaptive management and information sharing, increasing the number of sites reporting 'sound management') and to increase reporting of biodiversity outcomes in PAs and OECMs.

SECTION II: EXISTING PROTECTED AREA AND OECM COMMITMENTS

PRIORITY ACTIONS FROM 2015-2016 REGIONAL WORKSHOPS

National priority actions for Aichi Biodiversity Target 11 were provided by Parties following a series of regional workshops in 2015 and 2016. The Capacity-building workshop for South, Central and West Asia on achieving Aichi Biodiversity Targets 11 and 12 took place 7 - 10 December 2015 in New Delhi, India. Progress towards the quantitative targets for marine and terrestrial coverage has been assessed based on data reported in the WDPA and WD-OECM as of 2021. For more information, see the workshop report at: https://www.cbd.int/meetings/

Summary from the workshop:

Priority actions and identified opportunities, if completed as proposed, will provide benefits for the qualifying elements of Aichi Biodiversity Target 11.

The following actions were identified during the workshops:

Terrestrial coverage: Complete demarcation and zonation of PAs including Biological Corridors.

Ecological representation: To incorporate some areas important for conservation which are outside the Protected Area network.

Areas Important for biodiversity and ecosystem services:

1) Improving the management effectiveness and protection status of IBA PAs are priority actions.

2) Monitor and assess the status and trends of biodiversity within the Protected Area System.

3) Institutionalize and upscale Payment for Ecosystem Services (PES) initiatives.

No actions were identified for the following elements of Target 11: Connectivity, Management effectiveness, Governance and Equity, Integration

NATIONAL BIODIVERSITY STRATEGY AND ACTION PLANS (NBSAPs)

Bhutan has submitted an NBSAP during the Strategic Plan for Biodiversity 2011-2020 (most recent NBSAP is available at: https://www.cbd.int/nbsap/search/).

National Target 11: The current Protected Area System is maintained with enhanced management effectiveness and financial sustainability.

Actions from the NBSAP will address several elements of Aichi Biodiversity Target 11:

NBSAP Action number	Action (original language from NBSAP)
11.1.1	Evaluate the management effectiveness of Protected Areas and Biological Corridors
11.1.2	Complete zonation of PAs by 2018
11.1.3	Enhance local community participation in the management of Pas
11.1.4	Review the functionality of Biological Corridors for demarcation, operationalization and legal protection
11.1.5	Monitor and assess the status and trends of biodiversity within the Protected Area System
11.1.6	Promote and support transboundary management and regional partnership initiatives
11.2.1	Develop and implement REDD+ activities to support conservation financing [in PAs]
11.2.3	Institutionalize and upscale Payment for Ecosystem Services (PES) initiatives [in PAs]
11.2.3	Upscale nature recreation and ecotourism programs with a financial ploughback mechanismg [in PAs]
11.2.4	Explore additional innovative financing mechanisms [in PAs]

APPROVED GEF-5, GEF-6, & GCF PROTECTED AREA PROJECTS

Approved GEF-5 and GEF-6 PA-related biodiversity projects

This includes biodiversity projects from the fifth and sixth replenishment of the Global Environment Facility (GEF-5 and GEF-6) with a clear impact of the quantity or quality of PAs; also including some projects occurring within the wider landscapes/seascapes around PAs. Only those with a status of 'project approved' or 'concept approved' as of June 2019 were considered. The qualifying elements likely benefiting from each GEF project is assessed based on a keyword search of Project Identification Forms (PIF).

GEF ID	PA increase?	Area to be added (km^2)	Qualitative elements potentially benefitting (based on keyword search of PIFs)
4579	No	N/A	All except Connectivity
9199	No	N/A	All except Ecologically representative

Approved Green Climate Fund (GCF) Protected Area-related biodiversity projects

The Green Climate Fund's investments listed as approved projects as of May 2021 were considered. The GCF supports paradigm shifts in both climate change mitigation and adaptation that may impact quality of PAs or contribute to better integration within the wider land- and seascapes around PAs. Only projects with result areas for either or both *Forest and Land Use and Ecosystems and Ecosystem Services result areas* were included.

GCF ID	Project theme	Result area	Target 11 element
FP050	Cross-cutting	Forest and land use	PA/OECM coverage; Effectively managed; Equitably managed; Ecosystem services; Areas important for biodiversity; Connectivity; Integration

OTHER ACTIONS/COMMITMENTS

Leaders' Pledge for Nature

Bhutan **has** signed onto the Leaders' Pledge for Nature.

Political leaders participating in the United Nations Summit on Biodiversity in September 2020, representing 84 countries from all regions and the European Union, have committed to reversing biodiversity loss by 2030. By doing so, these leaders are sending a united signal to step up global ambition and encourage others to match their collective ambition for nature, climate, and people with the scale of the crisis at hand.

Commitments for PAs and OECMs from Other National Policies

Policy document	Ecosystem	Policy text
Nationally Determined Contribution	Forest ecosystems	Avoided forest conversion: 0.2 Mt CO2e/yr
Nationally Determined Contribution	Forest ecosystems	Bhutan will maintain a minimum of 60 percent of total land under forest cover for all time in accordance the Constitution of the Kingdom of Bhutan.
Nationally Determined Contribution	Wetland ecosystems	ADAPTATION: Protecting catchment areas for hydropower through watershed and sustainable land management approaches
Nationally Determined Contribution	Grasslands & Agricultural systems	ADAPTATION: Enhancing climate information services for vulnerability and adaptation assessment and planning
Bhutan Constitution	Forest ecosystems	The Royal Government shall protect, conserve and improve the pristine environment and safeguard the biodiversity of the country;
Bhutan Constitution	Forest ecosystems	The Government shall ensure that, in order to conserve the country's natural resources and to prevent degradation of the ecosystem, a minimum of sixty percent of Bhutan's total land shall be maintained under forest cover for all time.
Reducing emissions from deforestation and forest degradation	Forest ecosystems	Broaden opportunities for income generation from ecosystem services
Reducing emissions from deforestation and forest degradation	Forest ecosystems	Strengthen the effectiveness of existing policies and methods across all forestry jurisdictions and areas

Policy document	Ecosystem	Policy text
Reducing emissions from deforestation and forest degradation	Forest ecosystems	Strengthen cross-sectoral land use planning and coordination
National Biodiversity Strategy Action Plan	Forest ecosystems	High-biodiversity value habitats are mapped, the rate of loss is accounted, trends monitored, and overall loss and fragmentation reduced
National Biodiversity Strategy Action Plan	Forest ecosystems	By 2020, the potential impacts of climate change on vulnerable ecosystems are identified and adaptation measures strengthened
National Biodiversity Strategy Action Plan	Forest ecosystems	The current Protected Area System is maintained with enhanced management effectiveness and financial sustainability
National Biodiversity Strategy Action Plan	Forest ecosystems	By 2020, key ecosystems and ecosystem services are identified, assessed and safeguarded for human well being
National Biodiversity Strategy Action Plan	Wetland ecosystems	By 2020, key ecosystems and ecosystem services are identified, assessed and safeguarded for human well being
National Adaptation Program of Action	Wetland ecosystems	River bank protection
National Adaptation Program of Action	Wetland ecosystems	Convert wetland to dryland (from risks of: prolonged rain and flood)
National Biodiversity Strategy Action Plan	Grasslands & Agricultural systems	By 2020, the genetic diversity of key cultivated plants and domesticated animals, including that of crop wild relatives are documented and conserved
National Biodiversity Strategy Action Plan	Grasslands & Agricultural systems	By 2020, the potential impacts of climate change on vulnerable ecosystems are identified and adaptation measures strengthened
National Adaptation Program of Action	Grasslands & Agricultural systems	Change cropping patterns
National Adaptation Program of Action	Grasslands & Agricultural systems	Terracing and contour bunding
Bhutan Water Policy	Wetland ecosystems	Prepare and periodically update a National Integrated Water Resources Management Plan for the conservation, development and management of water resources

UPDATES ON PROGRESS TOWARDS COMMITMENTS

Assess the awareness of biodiversity values in the protected areas and among the general population: **On track**

- For general awareness, the national Gross National Happiness Survey (last one in 2015) was used to understand the impact of awareness on biodiversity. The Survey indicates that 80% are highly responsible towards conservation. In order to ascertain the awareness at targeted interventions, a Scoping Study was done in three protected areas which further validated that 85% of the population therein were aware of biodiversity and its values.
- In addition, several environmental education programmes were reviewed through Bhutan's 11th and 12th Five-year Plans.

Evaluate the management effectiveness of PAs and Biological Corridors (BCs): **On track**

- The effectiveness study of the PAs system was carried out based on the internationally accepted process and adapted to the Bhutanese context to understand the management effectiveness of the PAs and BCs

Enhance local community participation in the management of PAs: **On track**

- The Gross National Happiness Survey indicates that close to 80% of the total population are highly responsible towards biodiversity conservation.
- Important biodiversity events promoted; biodiversity information generation and access platforms are being enhanced while nature clubs and youth engagement initiatives are progressive and community engagement in citizen science initiatives. Indigenous communities are involved in decision-making related to the use of traditional knowledge and activities such as community-based natural resources management projects

Monitor and assess the status and trends of biodiversity within the PA System: **On track**

- A new tool, the Bhutan METT+ (Management Effective Tracking Tool) was devised and used for all the protected Areas and the Royal Botanical Park between 2016 and 2018 culminating into a Bhutan State of Park report. The Bhutan METT+ is now being mainstreamed into the PA management plans and will be conducted every five years to track progress on the implementation of programs/initiatives.
- Further, the Bhutan METT+ assessments are also being implemented in the BCs.

Promote and support transboundary management and regional partnership initiatives: **On track**

- The mosaic of conservation space in the eastern Himalayas is maintained through transboundary conservation mechanisms, the Kanchanjunga Landscape Conservation Development Initiative (India, Bhutan and Nepal) and the Transboundary Manas Conservation Area (Bhutan and India) have been initiated in collaboration with ICIMOD and WWF respectively.

Complete zonation of PAs by 2018: **On track to exceed target**

- The zonation of the PAs was carried out considering the scientific findings of biodiversity values inside the park. Exterior boundary of the park was demarcated to avoid conflict of interest with the private land holdings and other land user groups.
- Based on new zonation guidelines, 5 Pas were also demarcated and zoned for effective management and is ongoing for the remaining 5 PAS.

Review the functionality of Biological Corridors for demarcation, operationalization and legal protection: **On track**

- All BCs were thoroughly reviewed and re-demarcated. Few BCs already have Conservation Management Plans in place while few are under the various stages of its development. The legal status of the BCs as per the revised FNCRR 2017 are now at par with that of NPs, WS and SNR.

Institutionalize and upscale Payment for Ecosystem Services (PES) initiatives: **On track**

- The National Payment of Environment Services Framework (PES) of Bhutan (2015) and a PES Field Guideline have been developed to facilitate PES implementation. At the same time, in addition to existing the PES scheme in Yakpugang Community Forest Management Group (CFMG), new PES sites in Pasakha and Namey-Nichu in Paro were established.

Upscale nature recreation and ecotourism programs with a financial plough- back mechanism:

- A Payment for Environment Services (PES) framework has been developed based on which a few water-based PES schemes are under implementation. Some ecotourism projects have been implemented while others are in the pipelines. Upscaled nature recreation and ecotourism programs in the country.

Explore additional innovative financing mechanisms: **On track to exceed target**

- Bhutan for Life is a proven Project Finance for Permanence EN Model tested in several countries and has successfully mobilised USD 43.1 million dollars from donors and partners to sustain implementation of the planned programs in the PAs of Bhutan. This fund will also be added by the matching fund from the Bhutan government.

Overall Assessment = On track to exceed target

ANNEX I

FULL LIST OF ECOREGIONS

Ecoregion Name	Area (km²)	% of Global Ecoregion in Country	% of Country in Ecoregion	Area Protected (km²)	% Protected in Country
Brahmaputra Valley semi-evergreen forests	223.8	0.4	0.6	177.8	79.4
Eastern Himalayan alpine shrub and meadows	7,007.3	5.8	18.1	6,404.7	91.4
Eastern Himalayan broadleaf forests	16,194.9	19.5	41.9	4,396.3	27.1
Eastern Himalayan subalpine conifer forests	9,077.0	33.1	23.5	5,947.2	65.5
Himalayan subtropical broadleaf forests	4,158.6	10.9	10.7	1,185.8	28.5
Himalayan subtropical pine forests	669.4	0.9	1.7	285.5	42.6
Northeast Himalayan subalpine conifer forests	66.3	0.1	0.2	63.7	96.1
Terai-Duar savanna and grasslands	108.3	0.3	0.3	34.1	31.5

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