



Guideline for Development of Divisional Forest Office Management Plan



**Department of Forests & Park Services
Ministry of Agriculture & Forests
Royal Government of Bhutan**

Department of Forests
& Park Services is
working together with
partners to secure
High Conservation
Values in
south-western Bhutan



'This project is part of the International Climate Initiative (IKI). The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) supports this initiative on the basis of a decision adopted by the German Bundestag.'

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Royal Government of Bhutan
Ministry of Agriculture and Forests
Department of Forests & Park Services
Thimphu: Bhutan



Foreword



Forests have always played a key role in the livelihood of Bhutanese and is intrinsically intertwined with the social, culture and tradition of our country. In view of its pivotal role not only on socio-economic development but also on climate regulatory function through several means and vital ecosystem services, sustainable forest management has always played a key role in sustaining our natural forest resources. Bhutan is one of the few countries in the world that enshrines forest and environmental conservation aspects in its Constitution. Article 5 of the constitution of the Kingdom of Bhutan reflects commitment to 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. Bhutan has also committed to remain carbon neutral

at the 15th Conference of Parties to the United Nations Framework Convention on Climate Change (UNFCCC) in 2009 in Copenhagen, Denmark. In addition, the Intended Nationally Determined Contribution (INDC) submitted in September 2015 towards finalization of Paris Agreement further re-iterated Bhutan's pledge to remain carbon neutral.

Division Forest Office (DFO) as the custodian of our forest resources in the Dzongkhags, plays an integral role in conserving and protecting our natural forest resources besides catering forestry services to the people of the country. It is one of the main players in implementing our sound environmental conservation policies and ensuring our commitment to remain carbon neutral and maintain 60% forest cover for all times to come. Though management of forest resources within the divisional jurisdiction is guided by the noble principles of sustainability, it is even more important to be scientific along with long term division goals and objectives. It is also equally important to review and evaluate such goals and objectives on a periodic basis. Hence, in order to do so, a comprehensive and holistic Division Forest Office Management Plan with time bound vision, mission, objectives and goals is imperative.

Therefore, this *guideline* shall guide our field colleagues in preparing Division Forest Management Plan of their respective divisions which shall not only ensure sustainable management of forest resources within the division's jurisdiction but also in realizing our national dream of remaining carbon neutral and maintaining 60% percent forest cover for all times to come. Further, the DFO plan developed based on this *guideline* will definitely strengthen the sustainable forest resources management and biodiversity conservation practices within our division forest offices to benefit both the present and future generations.

Tashi Delek!

Lobzang Dorji
Director

Developed by:

1. Mr. Kinley Tshering, Chief Forestry Officer, FPED
2. Ms. Sonam Peldon, Principal Forestry Officer, SFED
3. Mr. Tashi Norbu Waiba, Deputy Chief Forestry Officer, FRMD
4. Ms. Tshering Zam, Deputy Chief Forestry Officer, NCD
5. Ms. Kinley Dem, Senior Forest Ranger, WMD

List of Contributors:

1. Mr. Rinzin Dorji, Senior Forestry Officer, Division Forest Office -Gedu
2. Mr. Ugyen, Senior Forest Ranger, Jigme Khesar Strict Nature Reserve-Haa
3. Ms. Karma Choden, Senior Forestry Officer, Division Forest Office -Paro
4. Mr. Tshering Wangchuk, Senior Forestry Officer, Division Forest Office -Tsirang
5. Mr. Lhaba, Senior Forestry Officer Forestry Officer, Division Forest Office -Thimphu
6. Mr. Tshering Dorji, Senior Forestry Officer, Division Forest Office -Sarpang
7. Ms. Kesang Wangmo, Senior Forestry Officer, Division Forest Office -Zhemgang
8. Mr. Kuenzang Dorji, Senior Forestry Officer, Division Forest Office -Samtse
9. Mr. Jigme Wangchuk, Forestry Officer, Division Forest Office -Dagana

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Abbreviation and Acronyms

AAC	Annual Allowable Cut
BC	Biological Corridor
CF	Community Forest/Community Forestry
CFMG	Community Forest Management Group
CFMP	Community Forest Management Plan
CFO	Chief Forestry Officer
cft	Cubic foot/feet
DFO	Division Forest Offices
DoFPS	Department of Forests and Park Services
FIRMS	Forest Information Reporting and Management System
FMCB	Forest and Nature Conservation Code of Best Management Practices of Bhutan
FMP	Forest Management Plan
FMU	Forest Management Unit
FNCA	Forest and Nature Conservation Act, 1995
FNCRR	Forest and Nature Conservation Rules & Regulations, 2017
FPED	Forest Protection and Enforcement Division
FRMD	Forest Resources Management Division
GIS	Geographic Information System
GPS	Global Positioning System
Ha	Hectare
HCVA	High Conservation Value Area
HWC	Human Wildlife Conflict
KBA	Key Biodiversity Areas
LFMA	Local Forest Management Area
LFMP	Local Forest Management Plan
LG	Local Government
LULC	Land Use and Land Cover
m ³	Cubic meter
MAB	Man and Biosphere
METT	Management Effectiveness Tracking Tool
MoAF	Ministry of Agriculture and Forests
NCHM	National Center for Hydrology and Meteorology
NFI	National Forestry Inventory
NRDCL	Natural Resources Development Corporation Limited
Nu	Ngultrum
NWFP	Non-Wood Forest Product
OP	Operational Plan
PA	Protected Areas
PRA	Participatory Rural Appraisal
RBM	River Bed Materials
RGoB	Royal Government of Bhutan
RNR	Renewable Natural Resources
RRA	Rapid Rural Appraisal
SMART	Spatial Monitoring and Reporting Tool
SRFL	State Reserve Forest Land
TAC	Technical Advisory Committee

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Approval sheet

The approval sheet shall be common for all and shall be as follows:

Period of the Plan

This Plan is valid for the period of 10 years from..... to.....

Submitted for approval:

Chief Forestry Officer
(Name of the Division)

Technically reviewed & Recommended for approval:

Recommended for approval:

Chief Forestry Officer
Forest Protection and Enforcement Division

Director
Department of Forests & Park Services

APPROVED

Secretary
Ministry of Agriculture & Forests

Foreword

This section shall include a foreword highlighting the significance of the DFO management Plan and its implementation. The foreword will be signed by the Head of the Department.

Abbreviation and Acronyms

This section shall include the abbreviations of all the important terms used in the DFO Management Plan.

Rationale

Bhutan though a small country, is widely recognized across the world for its environmental conservation initiatives and as a carbon negative country in 21st century. The intact natural resources that we have today is a testimony to the farsighted conservative visions of our successive monarchs and the sound environment conservation policies of the country. However, over the years, the forest management policies have undergone significant changes from that of more conservation focused to sustainable utilization of forest resources. Though scientific management of our forest resources based on the principles of sustainability had long been practiced, it has become even more imperative than ever before in light of the changing climate and its impacts. Today climate change and its impacts has widely affected many countries. Bhutan by virtue of being located in a most fragile mountainous ecosystem is even more poised to the impacts of climate change. Thus, Bhutan is one of the few countries in the world that enshrines forest and environmental conservation aspects in its Constitution. Article 5 of the Constitution of the Kingdom of Bhutan reflects commitment to 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.

Division Forest Office as the custodian of our forest resources in the Dzongkhags, plays an integral role in conserving and protecting our natural forest resources besides catering forestry services to the people of the country. It is the one of the main players in implementing our sound environmental conservation policies and ensuring our commitment to remain carbon neutral and maintain 60% forest cover for all times to come. Though management of forest resources within the division's jurisdiction is guided by the noble principles of sustainability, it is even more important to be scientific along with long term goals and objectives. It is also equally important to review and evaluate such goals and objectives on a periodic basis. Therefore, in order to do so, a comprehensive and holistic Division Forest Management Plan with time bound vision, mission, objectives and goals is imperative. It shall serve as an overarching scientific Forest Management Plan in scientifically managing the forest resources within the jurisdiction of Forest Divisions.

EXECUTIVE SUMMARY

This section shall have a highly concise summary of the contents of the DFO Management Plan.

CHAPTER 1: BACKGROUND

1.1 History and Significance

1.1.1 Importance of Forests (same for all DFO plans)

The Article 5 of the Constitution of the Kingdom of Bhutan states that: “*Every Bhutanese is a trustee of the kingdom’s natural resources and environment*”. The Royal Government is enjoined in the Constitution to conserve and improve the environment and safeguard the country’s biodiversity. It is further directed to secure sustainable development while promoting economic and social development. The Constitution has enshrined the Government to ensure that a minimum of 60% of the country’s land should be maintained under forest cover for all times to come. Bhutan is the only carbon neutral country in the world, absorbing carbon more than it emits. The RGoB has made an international commitment to remain carbon neutral for all times to come.

1.1.2 Overview of the Sustainable Forest Management (respective divisions)

While this section will provide all the available information of the forest division since its establishment, the writeup must begin by providing an overview of the Sustainable Forest Management scenario at the national level then zooming down to the individual division level. The importance of forest management and biodiversity conservation must be highlighted duly supported by relevant provisions of important national acts and policies. It shall include a brief history of the division, highlighting how the division evolved both in terms of administrative and technical endeavors over the years and what are some of the major achievements. It should also highlight the significance of the division in terms of resource management, service delivery and other significance of the division if any within the division’s jurisdiction. It can also cover other wide topics such as traditional management system.

1.2 Policies and Legislations (same for all DFO plans)

1.2.1 National Forest Policy 2011

The National Forest Policy 2011, was formulated to keep up with changing times and the evolution of forest management concept of the State Reserve Forest Land (SRFL). Since 1957, Forest governance has transitioned from providing “free access” to “almost no access” to “managed access”.

The National Forest Policy 2011 broadly stipulates to apply scientific management approaches to all of Bhutan’s forest and biodiversity resources for the benefit of people without compromising the conservation values and the constitutional mandate of maintaining a minimum of 60 % forest cover for all time.

The Policy while stating about different management regimes, also has provisions on the forest-based industries and need of proper utilization and marketing in developing private sector and rural communities. Some of the main features of the Policy includes a science-based participatory approach to forest governance and sustainable forest management with emphasis on efficient and environment friendly technologies for value-addition and waste minimization.

1.2.2 Forest and Nature Conservation Act of Bhutan (1969, 1995)

The Bhutan Forest Act 1969 is one of the first Acts passed by the RGoB. The Act nationalized “*all land under which no person has acquired a permanent heritable and transferable right of use and occupancy*” as forests. It further identified and provided directives regarding the forest rights, uses, royalties and penalties. The Act stipulated that at least 60% of the country should remain forested at all times.

The Bhutan Forest Act 1969 was repealed and ratified in 1995. The Forest and Nature Conservation Act of Bhutan 1995 identified and outlined the requirement of management plan for production and protection of forest and wildlife. Emphasis was given to community and social forestry and, encouraged the participation of community and private individuals. The Act also provided the legal basis for defining management restrictions in the process of forest planning and function mapping.

1.2.3 Forest and Nature Conservation Rules (FNCR 2000, 2003, 2006, 2017, 2020)

The Forest and Nature Conservation Rules (FNCR) 2000 was revised in 2003 and again in 2006 to mainly accommodate a broader scope of the power and duties vested by the FNCA 1995 which were not covered by earlier FNCR. The FNCA 1995 mandated the Department to manage SRF including Community Forests (CF), protect and conserve wildlife, soil & water and related natural resources of Bhutan. The FNCR 2006 issued authority and provisions for the preparation of management plans for Protected Area (PA), Forest Management Units (FMU), CF, NWFP (Non-Wood Forest Produce Management Area), Soil & Water Conservation. Various amendments to the FNCR 2006 have been done over the years due to changing times but keeping in line with the provisions of the NFP 2011. Further, a separate amendment to the FNCR 2006 was carried out due to the adoption of the revised rules for the rural timber allotment as part of the implementation of the Government to Citizen Services programme. The FNCR 2006 was again revised in 2017 which was an amalgam of all the different amendments made to the FNCR 2006 and the provision on the Rules on Biological Corridors (BC) 2007, which defined the protection status and prescription of the BC plan.

1.2.4 Land Lease Rules and Regulations of Bhutan 2018

The Land Lease Rules and Regulations of Bhutan 2018 implements the provision of the Land Act of Bhutan 2007 and necessitates the requirement of forestry clearance for issuance of lease of SRF Land. Further, it strongly discourages and forbids lease of land registered under Government institutions and areas which are under different management namely designated Parks, Nature Reserve, PA, BC, Buffer Zones, CF, Critical Watershed, Wetland, High Risk Zones, Nyes, religious sites & important monuments and Restricted Zones. However, the Secretariat can make exemptions for only those critical infrastructures of national importance and public need under only special circumstances as deemed relevant by it.

1.2.5 Biodiversity Act of Bhutan 2003

The Biodiversity Act of Bhutan 2003 provides for the conservation and sustainable utilization of biological resources & associated traditional knowledge and ensures Sui Generis protection of plant varieties. It also authorizes the implementation of the Access and Benefit-sharing regime to derive additional benefits in a fair and equitable manner.

1.2.6 Land Act of Bhutan 2007

The Land Act of Bhutan 2007 provides for the leasing of state land for economic and various other activities. All *Tsamdro* (grazing land) and *Sokshing* (forest land for collection of leaf litter) rights shall revert back to the State and convert to leasehold uses with management plans giving preference to previous rights holders.

1.2.7 National Environment Protection Act 2007

The National Environment Protection Act 2007 provides for the establishment of an effective system to conserve and protect the environment through the National Environment Commission or its successors, designation of competent authorities and constitution of other advisory committees, so as to independently regulate and promote sustainable development in an equitable manner. The Act also calls for conservation and protection of wetlands, alpine regions, watersheds, and other vulnerable ecosystems in addition to the existing protected areas.

1.2.8 Waste Prevention and Management Act of Bhutan 2009

The Waste Prevention and Management Act of Bhutan 2009 promotes minimization and sound management of waste in the country through the 3 Rs (Reduce, Reuse and Recycle). The Act further identifies different agencies for regulation of waste in the country wherein it empowers the Ministry of Agriculture and Forests to ensure prevention and management of waste with respect to the agricultural sector, including live-stock and forestry.

1.3 Purpose and Objectives

1.3.1 Vision *(same for all DFO plans)*

Sustaining Bhutan's forest resources & biodiversity for the happiness of present and future generations.

1.3.2 Mission *(same for all DFO plans)*

To conserve and manage Bhutan's forest resources & biodiversity to ensure social, economic and environmental well-being, and to maintain a minimum of 60% of the land under forest cover for all times to come.

1.3.3 Purpose

The DFOs should define how their divisions will contribute to achieving and fulfilling the Visions & Missions of the DoFPS.

1.3.4 Objectives

Respective divisions to coin the objectives which shall be aligned with all existing national policies and shall contribute towards achieving the vision and mission of the DoFPS. Further, the objectives must be formulated based on the analysis of threats and challenges under Chapter 4.

CHAPTER 2: CURRENT STATUS

2.1 Boundary and Area

This section shall focus on the general spatial information of the Division. This should include but not limited to detailed area statements, total geographical area of the division's jurisdiction, and geographic location (Latitudes and Longitudes) substantiated with Location and Land use map. The characteristic description of the landscape in terms of slope characteristics should also be provided. Some of the important information to be included in this section is given in Table 1. Primary data like LULC 2016 and hydrological data from National Centre for Hydrology and Metrology (NCHM) are recommended for obtaining information.

Table 1: Information to be included under Boundary and Area

Sl. No	Information required	Remarks	Source
1	Location of the division with geo-coordinates	Information on division's boundary on four cardinal directions is recommended	
2	Area statement and the total geographical area	Detailed area statement of different land use categories summing up to the total geographical area of the division	
3	Land Use Map	Land use map showing all the major land use categories	Latest LULC maps.
4	Location Map	Location map showing the location of the division within the national boundary of the country	

2.2 Administration

2.2.1 Administrative Set up

This section shall include the administrative jurisdiction of the Division (Number of Dzongkhags and Gewogs) along with different institutional set up within the Division, like number of Range and Beat offices. The Division's organogram should be developed with core mandates of the Division. Organogram can be referred to the Organization Development Report for the Ministry of Agriculture and Forests, March 10 2020 (Section III; 3.5 DoFPS, page 94, figure 17).

2.2.2 Mandates

This section shall include a summary of various kinds of service delivery catered by the division to the general public. Further, it must also highlight the conservation mandates and initiatives implemented by the division.

2.2.3 Human Resource

This section must highlight the staffing patterns of the division based on current staff strength and how well the jurisdiction is manned in achieving mandates. The writeup may also include existing challenges, gaps and opportunities.

2.2.4 Infrastructure

This section shall include information on how well established the Division Forest is in terms of basic infrastructures and mobility facilities to achieve the division's mandates of service delivery, resource allocation, biodiversity conservation and adoption of Climate Change Mitigation and adaptation measures.

2.2.5 Budget and Revenue

This section shall include detailed information on the budget and revenue of the Division. Details of the past five years revenue generated as well as projection for the next five year should be presented.

2.3 Biodiversity Conservation

This section provides an overview of different ecosystems (forest, aquatic and agriculture) that exist within the jurisdictions of the division. The thematic representation could be adopted based on the different ecosystems that are present within the division. Details of major Forest Ecosystems along with different forest types and vegetation found should be elaborated. Information on other important ecosystems like wetlands, riverine

ecosystems may also be included. The write up must also cover the current status and significance of these different ecosystems. The species diversity of floral and faunal, species composition, forest conditions should also be included. A thematic representation on which the writeup of this section may be based is given in Figure 1.

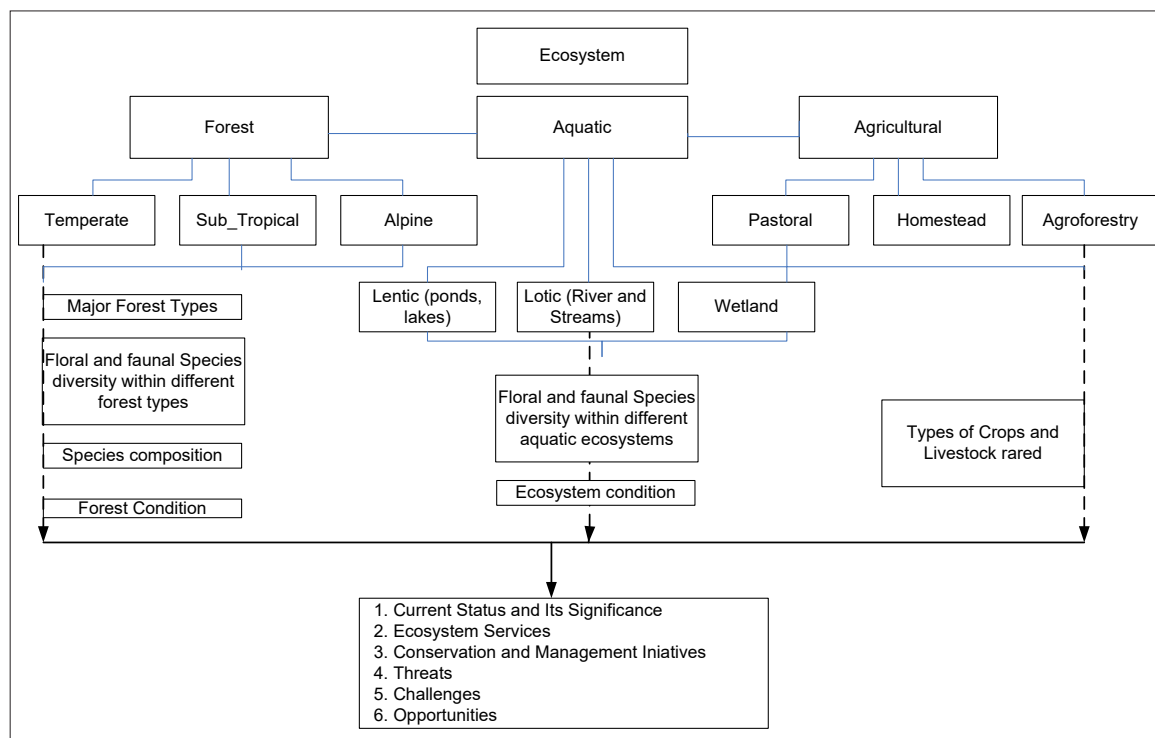


Figure 1: Thematic representation of major ecosystems

Preferably primary data collected through Biodiversity Monitoring Exercises, National Forest Inventories, Wetland Inventories, Wildlife Surveys, LULC 2016, etc is recommended to be used for deriving the information. However, secondary data and information collected in reference to other relevant management plans and reports, area and species-specific wildlife survey reports, RNR statistics, Biodiversity portals, NFI reports, etc. may also be included. Due citations and acknowledgements of the reports, plans and other such data sources is highly recommended.

Detailed technical guidelines to carry out Biodiversity Monitoring Exercise can be referred to Volume 1: Guiding Provisions, Chapter IV (4.3) or Volume IV: Protected Area Management of the Forest and Nature Conservation Code of Best Management Practices of Bhutan (hereinafter referred to as Code). Similarly refer Volume II: Natural Resources Assessment of the Code for guidelines in carrying out forest inventories, wetland inventories, Wildlife surveys, etc.

2.4 Existing Management Regimes

While the scientific management plans of each management regime provide the detailed management objectives, prescriptions and implementation modalities, this section of the plan must include a comprehensive and holistic information on all the existing management regimes that are prevalent within the division. It may include but not limited to a brief summary highlighting the management objectives, area extent, key issues and challenges and modus operandi of each of these management regimes and how these management regimes contribute towards sustainable forest management objectives, service delivery, resource needs and conservation and protection of our natural resources. A thematic representation on which the writeup of this section may be based is given in Figure 2.

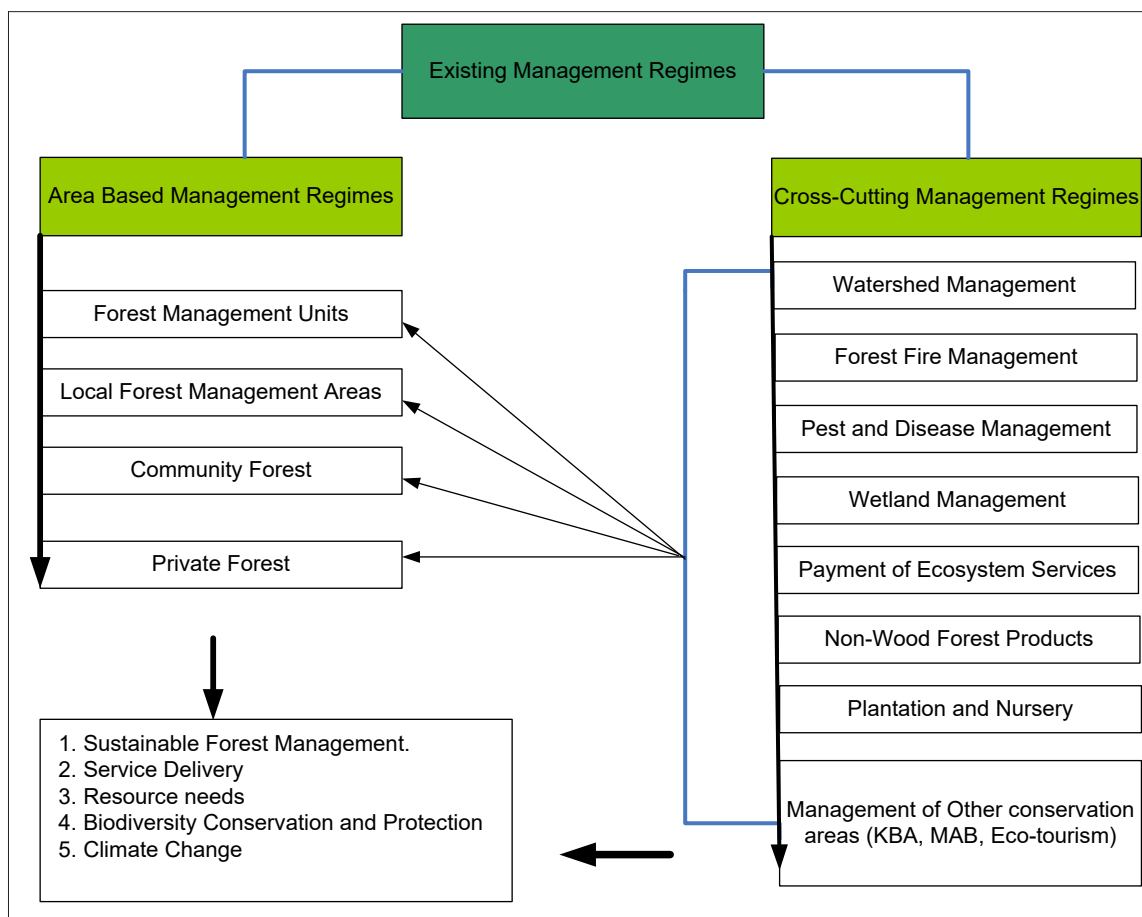


Figure 2: Thematic representation of existing management regimes

Detail write-up for individual management regimes may not be included in the plan. However, write-up for same management regimes could be clubbed under a common topic (e.g. Forest Management Units) which shall cover for all the FMUs existing within the division.

Some of the important information to be incorporated under each of these management regimes are as follows.

A. Area Based Management Regimes

1. Forest Management Unit

List of all the FMUs with relevant information as indicated in the table.

Forest Management Unit										
Name of units	Dzongkhag	Gewogs falling within the FMU	Year of establishment	Total area (ha)	Forested area (ha)	Annual Allowable Cut (AAC) - m ³			Plan Period	Plan Cycle
						Commercial	Rural	Total		

2. Local Forest Management Area

List of all the LFMAs with relevant information as indicated in the table.

Local Forest Management Area								
Name of LFMA	Dzongkhag	Gewog	Year of establishment	Total Gewog area (ha)	Area covered by the plan (ha)	Annual Allowable Cut (AAC) - m ³	Plan Period	Plan Cycle

3. Community Forest

List of all the CFs with relevant information as indicated in the table

Community Forest										
Name of Community Forest	Year of establishment	Dzongkhag	Gewog	Members		Total Area	Area under Forest Cover(Ha)	Annual Allowable Cut (AAC) - m3	Plan Period	Plan Cycle
				Male	Female					

4. Private Forest

List of all the PF with relevant information as indicated in the table

Details of Owner		Details of Private Forest								
Name of the owner	CID No	Name of the Private Forest	Dzongkhag	Gewog	Tham No	Year of establishment	Total area (ha)	Area under Forest (ha)	Annual Allowable Cut (AAC) - m3	Plan Period

B. Cross Cutting Management Regimes

List of all the cross-cutting management regimes with relevant information as indicated in the table.

Cross Cutting Management Regimes/Interventions									
Sl.No	Cross Cutting Management Regimes/Interventions	Name of the area based management regimes /Location *	Dzongkhag	Gewog	Year of operationalization of the cross cutting regime	Total area under management intervention (ha)	Area covered by the area based plan (ha)	Key Management Interventions **	Plan Period of the area based management plan
1	Watershed Management	eg. Betekha FMU							
2	Wetland Management	eg. Ngoba Community Forest							
3	Pest and Disease Management								
4	Payment for Ecosystem Services								
5	Non-wood Forest Products								
6	Forest Fire management								
7	Plantation and Nursery								
8	Key Biodiversity Area								
9	Eco-tourism and recreational area								
10	Man and Biosphere area								
	* Name of the area based management regimes/ Location	This is the name of the area based management regimes within which the cross cutting management intervention has been prescribed as a management prescription. For example watershed management intervention may have been prescribed within Betekha FMU. Therefore, the name of the area based management regime will be "Betekha FMU". However, sometimes the cross cutting management intervention may not fall under any area based management regimes. In such case name of the location where the intervention has been prescribed should be mentioned. eg. Shari							
	** Key Management Interventions	Highlight some of the key management interventions prescribed.							

The management regimes includes both area based management regimes like Local Forest Management Areas, Forest Management Units, Community Forests, Private Forests, etc. and other cross cutting management regimes that are prevalent within these area based management regimes like Payment for Environmental Services, Non-Wood Forest Management, Watershed Management, Pest and Disease Management, Forest Fire Management, Agroforestry, Wetland management, Plantation and Nursery and Other Conservation areas (Key Biodiversity Areas, Man and Biosphere Reserve, High Conservation Value Areas, Ecotourism sites and Recreational areas).

The management plans and documents of the respective management plans must be referred for appropriate information and data for this section.

2.5 Forest Resources and Utilization

2.5.1 Forest Resources

This section of the plan shall provide detailed information on forest resources pertaining to existing stock within the division. The forest resources include timber, carbon, biomass, NWFP, Sand and stones, River Bed Materials, Key flora and fauna of conservation and protection importance and any other potential forest resources that are available within the division.

2.5.2 Function Mapping

A detailed function mapping of the existing forest resources within the division is highly recommended. Function mapping must include mapping areas which are already managed under different management regimes, mapping potential timber production areas which could be explored during the next ten-year plan period, and areas which need to be protected and conserved amongst others. A function map of the division must be included within the write-up of this section as per Figure 3 given below. The details of function mapping pertaining to criteria, restrictions and management prescriptions can be referred to Volume III: Sustainable Forest Management, Chapter 1: Forest Management Units, Section 1.9: Forest Function Mapping of the Forest and Nature Conservation Code of Best Management Practices of Bhutan.

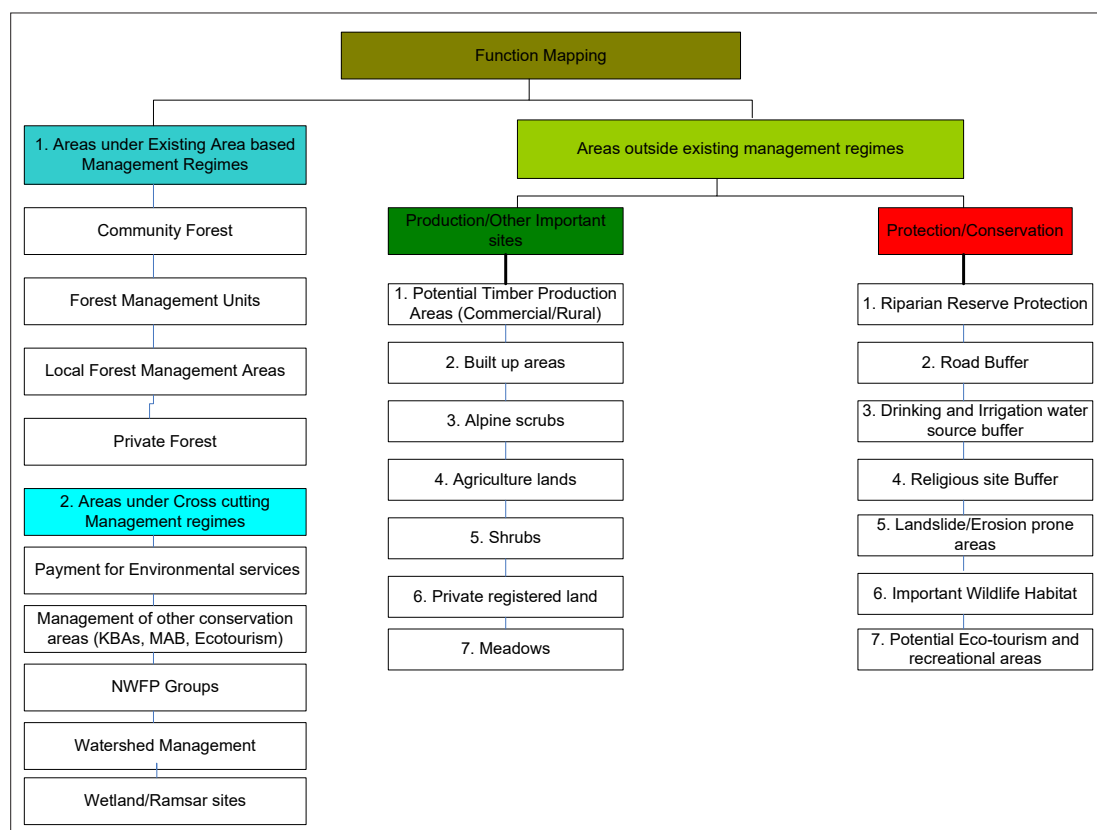


Figure 3: Thematic representation of function mapping

2.5.3 Forest Resource Utilization

This section shall provide detailed information on demand and utilization trend of the forest resources within the division. It must provide details of forest resources allotted (commercial timber, rural timber, sand and stones, NWFPs etc.) by the division on an annual basis as indicated in Table 2.

Table 2: Information to be included for Forest Resources Utilization

Sl. No	Information required	Unit	Time span	Remarks
1	Volume of commercial timber allotted	Standing volume (m3)	Annual	Timber allotted on realizing commercial royalty. The information must be segregated based on purposes like Dzong and Lhakhang Constructions, nationally important projects, urban house construction, etc.

2	Volume of rural timber allotted	Standing volume (m3)	Annual	Timber allotted on realizing subsidized royalty. The information must be segregated based on purposes like New House Construction, Renovation, Cowshed construction, extension, firewood allotment, Dzongs and Lhakhang construction, etc.
3	Quantity of NWFP allotted	Unit based on products	Annual	To be segregated species wise or product types
4	Quantity of Sand and stone allotted	m3 or metric tonnes	Annual	
5	Total SRF land allotted for developmental activities	Area (ha)	Annual	This includes SRF land allotted for farm road, approach roads, transmission lines, land substitute, land exchange, land lease, land allocated for project developments, etc.
6	Total area of SRF land allotted for developmental activities	Area (ha)	Annual	This is the total forest area lost from SRF land allotment under sl.no 5.
7	SRF land destroyed by Forest Fires	Area (ha)	Annual	SRF land destroyed by forest fire
8	SRF land affected by pest and diseases	Area (ha)	Annual	SRF land destroyed by pest and diseases

Further, this section of the plan must also include information on existing Wood Based Industries (both primary and secondary), NWFP management groups, CFMG management groups, rural timber applicants, nationally significant development projects prevalent within the divisional jurisdictions.

Primary data collected through National Forest Inventory can be used to estimate the timber, biomass and carbon stocks available within the areas mapped under different forest functions. Further, the existing information on growing stocks assessed within the existing management regimes (FMUs, LFMAs, CFs, etc.) of the division can also be used to estimate the timber, biomass and carbon stock. Similarly, for information on other forest resources like Sand and Stones, NWFPs, minerals, River Bed Materials, and any other potential forest resources, primary data collection through inventories and surveys of these resources is highly recommended. However, in the absence of primary data, the information derived from secondary sources like management plans of existing management regimes, assessment and survey reports, RNR statistics reports can be used.

Information on demand and resource utilization trends can be derived from Forest Information Reporting and Monitoring Systems (FIRMS) database, past allotment records maintained within the divisions, Gewog registers and management plans of existing management regimes.

2.6 Local People and Livelihood

This section shall provide information regarding the local communities residing within the jurisdiction of a division and the status of their livelihoods. The demography and social structure information like households, populations, age, gender, education level, employment status, annual household income, and source of livelihood and income should be detailed out in this section. This section should also focus on livestock and agricultural status, land holdings and ethno-botanical practices and ecotourism product development as a means of livelihood for the local communities. Detailed technical guidelines to carry out Socio-economic Survey can be referred to Volume IV, sub-section 1.5.2.4 (Part A & B) of Protected Area Management of the Forest and Nature Conservation Code of Best Management Practices of Bhutan.

Primary data should be collected using Participatory Rural Appraisal/Rapid Rural Appraisal (PRA/RRA) tool, while secondary can be retrieved from the RNR statistics, Dzongkhag & Gewog profile, Population and Housing Census data can also be used for deriving information with due acknowledgement, wherever necessary.

2.7 Human Wildlife Conflict

Conflict with humans is a worldwide issue that often causes serious economic and social losses resulting from preying on livestock, causing damage to property, human injury or death and crop depredation by wild animals resulting in people and animal conflicts over living space and food. In this section, description on the Human-Wildlife Conflict scenario and conflict intensity in the division through brief assessment (Socio-economic survey Volume IV, sub-section 1.5.2.4 (Part A & B), depredation case assessment report, SMART Patrol report, secondary data from Livestock & Agriculture Extension Offices, Gewog & Dzongkhag administration should be presented. With the available HWC data, prepare a HWC hotspots map of the respective Division and accordingly recommend mitigation measures. Hotspots map should be prepared through GIS tools and Maxent Tool. Based on conflict types, innovative strategies and solutions should be reflected as interventions in the conflict areas. Refer National Human-Wildlife Conflict Management Strategy of Bhutan (2018-2028) for the interventions. SMART data can also be used as one of the reliable data sources.

2.8 Climate Change and its Impacts

This section shall encompass the details of Climate Change Aspect like pest and diseases, forest fire, erratic weather conditions, invasive species, floods, landslides, drying of water sources Information can be derived from the CVA Report, Climate Change research report, National Centre for Hydrology and Meteorology, SMART, FIRMS and Water sources mapping report. It must also include detail analysis of rainfall and weather patterns observed/detected within the division. Further, this section should describe the following:

1. Present climatic conditions in the area.
2. Farmers' vulnerability to Climate Change and peoples' perceptions.
3. Trend of climate parameters
4. Impact of climate on vegetation and wildlife
5. Adaptation/mitigation measures adopted.

The detail strategies and action to mitigate Climate Change should be reflected in management prescription and operational plan. The forest fire information could be used from the National Adaption Plan (NAP).

2.9 High Conservation Value Areas

This section shall briefly describe the overview of the HCV area identified and designated in the division based on the National Interpretation for Identifying High Conservation Values in Bhutan. The write up should include brief information on the process (Identification, Management and Monitoring of HCVA) adopted during the identification. The brief summary on boundary, site description, and area should be included. The management prescription/intervention should be included under chapter 5: Management Prescription.

CHAPTER 3: REVIEW OF THE PAST MANAGEMENT PLAN

This section will briefly cover the review of the past management plan in terms of achievements of the outputs/objectives, lessons learnt, gaps and carry over actions from the previous plan, challenges and issues while implementing the program identified within the management plan. The review of the plan must also highlight observations and recommendations of the mid-term and final evaluation of the management plans.

These observations and recommendations of the evaluation team must be adequately addressed and should be incorporated as a part of adaptive management in the new plan.

CHAPTER 4: THREAT AND CHALLENGES

This chapter shall have a process for identification of threats and challenges, and methods used for threat ranking for respective Forest Divisions. The threat and challenges should be identified through Socio-economic survey (Socio-economic Survey can be referred to Volume IV, sub-section 1.5.2.4 (Part A & B) of Protected Area Management of the Forest and Nature Conservation Code of Best Management Practices of Bhutan) and National Biodiversity Monitoring (Volume 1: Guiding Provisions, Chapter IV (4.3) or Volume IV: Protected Area Management of the Forest and Nature Conservation Code of Best Management Practices of Bhutan) with various stakeholders (Government agencies, NGOs, institutions, etc...) and Forest Divisions staff. Threats could be either direct threats or indirect threats and every threat should be described in detail.

Threat ranking should be carried out using relevant software (e.g. Miradi) uniformly across all the Field Divisions. The threats will be ranked based on the particular software used in relation to the objectives of the Forest Division as High, Medium or Low. Further, the DFO shall also list out the challenges encountered by the respective divisions during the daily operation of the division which may include skills & human resources, infrastructures, mobility & communication and availability of equipment, etc. Further, the threats and challenges should be ranked according to the objectives of the Division (From Chapter 1) and propose strategies and action plans for the management prescriptions (Chapter 5).

CHAPTER 5: MANAGEMENT PRESCRIPTION

he management prescriptions may be segregated but not limited to three broad areas as follows:

5.1 Services

This section shall include management prescriptions related to land-lease, kidu land, land substitution, rural timber allotment.

5.2 Technical Prescriptions (Forest & Wildlife Management)

This section shall include management prescriptions related to sustainable forest management, biodiversity conservation and ecosystem services.

5.3 Institutions (Human Resources and Infrastructures).

This section shall include management prescriptions related to Human Resource Development, Enhancement of infrastructures and equipment needs etc.

Each broad areas should outline the details of objectives, strategies, actions to address and mitigate the threats, issues and challenges identified. It should contain the following:

1. Objectives: *These are the precise, measurable, achievable, realistic and time bound objectives that contribute towards achieving the goals set of the Divisions. It should be linked to section 1.3 of chapter 1*
2. Strategies: *These are the methods or plans designed to achieve the objectives. It should address the issues, threats and overcome challenges identified.*
3. Actions: *These are the activities planned and identified to achieve the strategies and contribute to fulfill the objectives.*

The detailed information of this section will be supplemented by a separate Annual Operational Plan (Annexure I) or Implementation Framework with detailed budget and timeframe.

While developing the management prescription, the following important components must be taken into consideration.

Gender Mainstreaming: It is important to ensure that gender is mainstreamed in sustainable forest management and its planning process. The DFO management plan shall be gender-responsive in their design and implementation. Hence, the Gender Mainstreaming Guideline developed for Integrating Gender in all the phases of the DFO Management Plan preparation shall be strictly followed to ensure Gender mainstreaming. Accordingly, all the planning for the DFO Plan will seek to identify and address the different needs, constraints, contributions and priorities of women, men and youths. Integrating gender perspective means promoting equal opportunities, rights, voice, influence, leadership and benefits for different groups at all levels and areas of activities of the DFO management plan. Men and women will be provided with equitable opportunities to be included in stakeholders' consultations and decision-making during management planning, implementation and evaluation.

Environmental and Social Safeguards (ESS): The ESS will allow screening potential actions that can cause negative environmental or social impacts and develop suitable measures to avoid, minimize, or compensate for these impacts. It also ensures that the implementation and effectiveness of mitigation measures are monitored and that any impacts arising during execution of the management prescriptions are addressed. The ESS components should be considered during the planning process and implementation of the management prescriptions. The ESS will be guided by the ESS framework prepared by WWF Bhutan.

CHAPTER 6: IMPLEMENTATION PLAN AND FINANCIAL OUTLAY

The management prescription of the plan shall be detailed out in this chapter of the plan in the implementation framework (Table 3: Implementation Framework) for a period of 10 year. It should be prepared with a realistic year-wise budget indicated against each activity based on the management prescription for the entire plan period.

Based on the implementation framework, an Annual Operational Plan (Annexure I: Annual Operational Plan) which covers all the activities to be carried out in a year has to be developed by the division. The OP will guide the division to put the implementation plan into practice. It should be linked to the annual budget of the division and shall provide an accurate projection of the works to be carried out in the division annually.

Table 3: Implementation Framework

Objectives (These are the broad long term goals that the division wants to achieve)	Strategies (These are the methods and plans designed to achieve the objective)	Action (These are list of activities to achieve the objectives)	Year along with budget outlay (Nu.in million)										Remarks Include detail information of the action such as where, what..etc
			I	II	III	IV	V	VI	VII	VIII	IX	X	

CHAPTER 7: MONITORING AND EVALUATION

This chapter shall outline how the implementation of the plan will be monitored and evaluated. The M&E plan (Table 4: Monitoring & Evaluation Framework) shall be prepared to ensure synergy with the Implementation Framework and will also include the indicators against which the performance of the Division will be measured. The output indicator will basically describe the achievement of the actions identified under Chapter 5. Further, the gender mainstreaming actions should also be clearly defined in the output indicators.

Additionally, the division shall also prepare an Annual Operational Plan (OP) as per Annexure I, for the Division based on the overall 10-year plan and the OP which shall be approved by the Department.

Table 4: Monitoring and Evaluation Framework

Objectives	Action	Output Indicator	Unit	Baseline	Yearly Target									
					I	II	III	IV	V	VI	VII	VIII	IX	X

Monitoring will be done annually by the concerned DFO's based on the annual OP developed for the division. Evaluation of the plan will be done twice during the entire plan period. A midterm review (in last quarter of the 4th year) and final review (last quarter of the 9th year) will be carried out. Evaluation will be done by both internal (respective field division) and external committee (constituted with members from the functional division).

Further, evaluation shall also be carried out using the "Bhutan METT+ (Management Effectiveness Tracking Tool)" (Dudley *et al.*, 2016) which has been tweaked to meet the requirement of the Division Forest Office (Annexure II). The objectives for using Bhutan METT+ is to evaluate the management effectiveness of Division Forest Office. Similar to the Protected Areas, Bhutan METT + evaluation shall be carried out once in every five years for the DFOs.

The Bhutan METT+ should be conducted at two levels (Mid-term and Final Evaluation), Internal Assessment and External Assessment. The Internal Assessment is a self-assessment which should be carried out prior to the External Assessment by the respective field offices comprising the following members from their jurisdiction; 1. CFO, 2. Section Heads and 3. At least 2 officers from Range Offices.

The External Assessment should be coordinated by FPED and carried out in collaboration with relevant offices to ensure that the results from the internal assessment are unbiased. The team members for the external assessment shall include one Specialist, One representative from each functional division and, one representative each from the adjoining Division Forest Offices.

Refer Volume IV, sub-section 1.5.11.2 (Part A & B) of Protected Area Management of the Forest and Nature Conservation Code of Best Management Practices of Bhutan the Bhutan METT+ (1.5.11.2. Evaluation of the Forest Management Code)

CHAPTER 8. STAKEHOLDER CONSULTATION AND ENDORSEMENT OF DFO PLAN

8.1 Stakeholder consultation

The DFOs shall identify all the relevant stakeholders and rights holders in their division. Consultation meetings on the proposed management interventions and also on the restrictions and prohibitions shall be carried out thoroughly to avoid future complications.

8.2 Finalization and Endorsement of the DFO Management Plan

The DFO Management Plan shall be finalized by the concerned Division Forest Office. The draft plan shall be reviewed by FPED and subsequently endorsed by the Technical Advisory Committee (TAC) of the Department. The technically reviewed and endorsed plan will then be recommended for approval to the Ministry by the head of the Department. The Head of the Ministry will approve the plan for implementation.

ANNEXURE I: ANNUAL OPERATIONAL PLAN

Framework for Annual Operational Plan for Division Forest Office						
* The Annual Operational Plan for the Division Forest Office shall be prepared and submitted to FPED latest by 31 July						
Name of the office:						
Plan Period:						(Seal and sign)
Prepared by and date:						
Verified by and date:						
Recommended by and date:						
Approved by and date:						
I. REVIEW OF THE PREVIOUS YEARS' PLAN						
I.a. SUMMARY OF THE PLAN						
No. of Planned activities	Status of the activities (in Nos.)					
	Achieved	On-going		Not Implemented		
I.b. DETAILED REVIEW OF THE PLANNED ACTIVITIES						
Activities	Target with unit	Budget utilization status (in %age)	Brief report on the progress of the activities	Remarks (Justification/reasoning if not completed or not implemented)		
II. ANNUAL OPERATIONAL PLAN SCHEDULE						
II.a. DETAILS OF THE PLANNED ACTIVITIES						
Output Indicator as per the management plan/APA	Activities	Target with Unit	Timeline	Budget (in Nu.(m))	Fund Source	Specify location, if relevant
Program 1: Nature Conservation¹						

Program II: Forest Resources Management ²									
Program III: Social Forestry and Extension ³									
Program IV: Forest Protection and Enforcement ⁴									
Program IV: Administration and Direction ⁵									
1. Program I shall include but not limited to; Surveys, research, HWC management, habitat management, watershed & wetland protection, ecotourism & nature recreation, waste management, wildlife rescue & rehabilitation.									
2. Program II shall include but not limited to; LFMA plan preparation, timber allocation and monitoring.									
3. Program III shall include but not limited to; CF management, NWFP management, plantation, livelihood improvement initiatives.									
4. Program IV shall include but not limited to; patrolling, forest offence compounding/prosecution, forestry clearances, pest & diseases surveillance, forest fire management.									
5. Program V shall include but not limited to; Division Forest Office management plan preparation, work planning, coordination meetings, administrative and accounting activities, monitoring and evaluation, data management.									
*Note: Activities such as Awareness, capacity building, etc to be tagged with respective program activities.									

ANNEXURE II: BHUTAN METT+ FORM (REFINED FOR DFO)

Name, affiliation and contact details for person responsible for completing the Bhutan METT + (email etc.)			
Date assessment carried out			
Name of Protected Area /Forest Division			
WDPA site code (codes can be searched for on: www.protectedplanet.net/)			
Designations	National	IUCN Category National Category (to list based on site needs-CF, WFMU, LFMPs)	International (see below)
Location of Protected Area /Forest Division (province and if possible map reference)			
Date of establishment (dd/mm/yyyy)			
Ownership details (please tick)		SRFL	Private Community Other
Management Authority			
Size of Protected Area / Forest Division (sq.km)			
Number of staff		Permanent :	Temporary (same):
Annual budget (Nu) – excluding staff salary costs		Current budget (operational costs, e.g. staff costs):	
What are the main values for which the area is designated		Capital budget (infrastructure development etc):	
List the two primary protected area / forest division management objectives			
Management objective 1			
Management objective 2			
No. of people involved in completing assessment			
Including: (highlight where appropriate)	Forest Division Manager	Forest Division staff	Other Forest Division agency staff
	Local community	Donors	External experts
Please note if assessment was carried out in association with a particular project, on behalf of an organisation or donor.			
Information on International Designations (where applicable)			
UNESCO World Heritage site			
Date listed		Site name	Site area
Criteria for designation (i.e. criteria i to x)			
Statement of Outstanding Universal Value			

Ramsar site		
Date listed	Site name and number	Site area
Criteria for Designation & ecological character (see Ramsar Information Sheet)		
UNESCO Man and Biosphere Reserves		
Date listed	Site name	Site area
		Total:
		Core:
		Buffer:
		Transition:
Criteria for designation		
Fulfilment of three functions of MAB (conservation, development and logistic support.)		
Please list other designations and any supporting information below		
Name:	Detail:	
Name:	Detail:	
Name:	Detail:	

Protected Area /Forest Division Threats: Assessment Sheet 1									
In the assessment below threats should be:									
Ranked as of high significance if they are seriously degrading values; medium if they are having some negative impact and low if they are present but not seriously impacting values. Not applicable (N/A) is selected when the threat is either not present or not applicable in the Forest Division									
Note that threats ranked as of medium and high significance can be assessed in more detail using Assessment Sheet 2.									
Assessed at three levels:									
1.Current threat: in which case a 'C' is put in either the High, Medium or Low box									
2.Potential threat: in which case a 'P' is put in either the High, Medium or Low box									
3.Issues: in which case an 'I' is put in either the High, Medium or Low box									
Each threat identified could have both a current threat assessment (e.g. assessed as low) and a potential threat (e.g. assessed as medium). The category of 'issues' has been added because some management issues may not be strictly regarded as threats but need constant management intervention to ensure they do not become a threat. For example, plants collected for medicinal use could be a management issue ; or a current or potential threat if management activities are not effective in controlling the collection levels or processes.									
Guidance in making the assessment									
Unlike many other countries in the region (and worldwide) the level of threats are fairly low at present in Bhutan and thus what might be considered of high threat here, may not be at anything like the same scale as in other countries. Guidance in what is meant by the categories high, medium and low threats in a Bhutanese context has thus been developed for threats marked ** (see Annexe 1). Threat categories with specific guidance are marked by a * .									
Specific guidance on assessing threats in the Bhutanese context are also given in boxes below each threat.									
1. Residential and commercial development within a protected area / forest division									
Threats from human settlements or other non-agricultural land uses with a substantial footprint									
High	Medium	Low	N/A				Assessment Methods/Guide Note		
				1.1 Housing and settlement			Could be based on built up areas from LULC 2016 in relation to the Total Divisions area		
				1.2 Commercial and industrial areas			Extent of industrial areas to the total areas of the FDs		
				1.3 Tourism and recreation infrastructure			Based on the presence of absence of Tourism plans, facilities and services existing within the FDs		

2. Agriculture and aquaculture within a protected area / forest division					
Threats from farming and grazing as a result of agricultural expansion and intensification, including silviculture, mariculture and aquaculture					
High	Medium	Low	N/A		Assessment Methods/Guide Note
				2.1 Annual and perennial non-timber crop cultivation	
				2.1a Medicinal plant cultivation*	No quantification in this section for assessment
				2.2 Wood and pulp plantations	
				2.2a Community forestry	
				2.2b Private forestry (e.g. planting of exotic species)	
				2.3 Livestock farming and grazing**	Based on the % area impacted by presence of livestock on the actual Division area
				2.3a Land encroachment for agriculture	
				2.3b Land lease of government reserve land for commercial farming	Land lease area record from DLLC(Dzongkhag land leasing committee) which can be based on actual land leased with LUC(land user certificate)
				2.4 Freshwater aquaculture	
Threat 2.1a Medicinal plant cultivation: Note that the collection of species from the wild is covered in threat 5.2					
3. Energy production and mining within a protected area / forest division					
Threats from production of non-biological resources					
High	Medium	Low	N/A		Assessment Methods/Guide Note
				3.1 Oil and gas drilling	Not relevant
				3.2 Mining and quarrying**	Area of mines and quarry (in % of area to total area of DFO)
				3.3 Energy generation, including from hydropower dams*	Impact based or area covered/utilized for hydropower dams, residents, channels, power houses, etc...
3.3 Energy generation including HEP: This question looks specifically at threats within Forest Division. Most of the hydropower developments in Bhutan are outside protected areas but distant HEP systems can still impact on the Forest Division, the impact of such threats is covered in threat 7.2.					

4. Transportation and service corridors within a protected area / forest division					
Threats from long narrow transport corridors and the vehicles that use them including associated wildlife mortality					
High	Medium	Low	N/A		Assessment Methods/Guide Note
				4.1 Roads and railroads (include road-killed animals)**	Number of species kills recorded along the roads or likely to occur
				4.2 Utility and service lines (e.g. electricity cable lines, telephone lines)**	
				4.3 Flight paths*	Could be minimal impacts along flight paths(Druk air, Tashi air, Helicopter>.) particularly due to noise
4.2 Utility and service lines: Given the pace of infrastructure development in Bhutan (e.g. high tension cables, service centres etc) it was felt this threat should consider both impacts in the Forest Division and in the buffer zones.					
4.3 Flight paths: It should be stressed that this threat is considering flight paths of aeroplanes, hot air balloons, gliders etc, not the flight paths of birds					
5. Biological resource use and harm within a protected area /forest division					
Threats from consumptive use of “wild” biological resources including both deliberate and unintentional harvesting effects; also persecution or control of specific species (note this includes hunting and killing of animals)					
High	Medium	Low	N/A		Assessment Methods/Guide Note
				5.1 Hunting, killing and collecting terrestrial animals (including killing of animals as a result of human/wildlife conflict)	No need to fill this section
				5.1a Human wildlife conflict**	Record of HWC in respective forest Divisions
				5.1b Wildlife Poaching**	
				5.2 Gathering terrestrial plants or plant products (non-timber)	
				5.2a Mushrooms**	
				5.2b Plant species for medicinal use**	
				5.2c Plant species for food**	
				5.3 Illegal logging and timber harvesting**	
				5.3a Legal logging and timber harvesting**	
				5.4 Fishing and harvesting aquatic resources	Date from Illegal fishing record as well as fishery groups established

6. Human intrusions and disturbance within a protected area /forest division					
Threats from human activities that alter, destroy or disturb habitats and species associated with non-consumptive uses of biological resources					
High	Medium	Low	N/A		Assessment Methods/Guide Note
				6.1 Recreational activities and tourism	No rating
				6.1a Unmanaged ecotourism **	
				6.2 War, civil unrest and military exercises*	
				6.3 Research, education and other work-related activities in forest divisions	
				6.4 Activities of FD Managers (e.g. construction or vehicle use, artificial watering points and dams)	
				6.5 Deliberate vandalism or destructive activities	
6.2 War, civil unrest and military exercises: in the case of Bhutan war and civil unrest should include intrusion of political insurgency from across the border					
7. Natural system modifications					
Threats from other actions that convert or degrade habitat or change the way the ecosystem functions					
High	Medium	Low	N/A		Assessment Methods/Guide Note
				7.1 Fire and fire suppression (including arson)**	Impacts on FD from activities carried out in the adjoining divisions/ parks/State
				7.2 Dams, hydrological modification and water management/use*/**	
				7.3a Increased fragmentation within forest division	
				7.3b Isolation from other natural habitat (e.g. deforestation, dams without effective aquatic wildlife passages)	
				7.3c Other 'edge effects' on protected area values	
				7.3d Loss of keystone species (e.g. top predators, pollinators etc)	
Whereas threat 3 looked at impacts of infrastructure development in Forest Division, threat 7 looks at impacts which may occur from developments far away from the actually protected area. As noted above most of the hydropower developments in Bhutan are outside protected areas but distant HEP systems can still impact on the Forest Division. Threat 7.2 should record impacts on habitat or changes in the way the ecosystem functions, such as changing water flow patterns.					

8. Invasive and other problematic species and genes					
Threats from terrestrial and aquatic non-native and native plants, animals, pathogens/microbes or genetic materials that have or are predicted to have harmful effects on biodiversity following introduction, spread and/or increase					
High	Medium	Low	N/A		Assessment Methods/Guide Note
				8.1a Invasive non-native/alien plants (weeds)	
				8.1b Invasive non-native/alien animals	
				8.1c Invasive non-native/alien freshwater fish	
				8.1d Pathogens (non-native or native but creating new/increased problems)	Consider diseases here
				8.2 Introduced genetic material (e.g. genetically modified organisms)	
9. Pollution entering or generated within a protected area /forest division					
Threats from introduction of exotic and/or excess materials or energy from point and non-point sources					
High	Medium	Low	N/A		
				9.1 Household sewage and urban waste water	
				9.1a Sewage and waste water from protected area facilities (e.g. toilets, hotels etc)	
				9.2 Industrial, mining and military effluents and discharges (e.g. poor water quality discharge from dams, e.g. unnatural temperatures, de-oxygenated, other pollution)	
				9.3 Agricultural and forestry effluents (e.g. excess fertilizers or pesticides)	
				9.4 Garbage and solid waste**	
				9.5 Air-borne pollutants	
				9.6 Excess energy (e.g. heat pollution, lights etc)	
10. Geological events					
Geological events may be part of natural disturbance regimes in many ecosystems. But they can be a threat if a species or habitat is damaged and has lost its resilience and is vulnerable to disturbance. Management capacity to respond to some of these changes may be limited.					
High	Medium	Low	N/A		Assessment Methods/Guide Note
				10.1 Volcanoes	Not really relevant

Protected Area /Forest Division Threats: Assessment Sheet 2

As the severity and impact of threats in Bhutan are expected to increase over the next few years, in part due to infrastructure development and the relative ease of access/communications that new roads and mobile phone coverage are allowing, the Bhutan METT + includes a more detailed assessment of major threats.

The assessment form allows a more detailed assessment of the current or potential threats identified as having medium or high significance in Assessment Sheet 2

1. Specify threat: Housing and settlement

Threat (specific if current or potential):

Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	

2. Specify threat: Commercial and industrial areas

Threat (specific if current or potential):

Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	

3. Specify threat: Tourism and recreation infrastructure

Threat (specific if current or potential):

Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	

4. Specify threat: Wood and pulp plantations

Threat (specific if current or potential):

Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	

5. Specify threat: Community forestry		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
6. Specify threat: Livestock farming and grazing		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
7. Specify threat: Land encroachment for agriculture		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
8. Specify threat: Land lease of government reserve land for commercial farming		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
9. Specify threat: Energy generation, including from hydropower dams*		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	

B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
10. Specify threat: Roads and railroads (include road-killed animals)**		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
11. Specify threat: Utility and service lines (e.g. electricity cable lines, telephone lines)*/**		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
12. Specify threat: Human Wildlife Conflict		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
13. Specify threat: Wildlife Poaching**		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	

14. Specify threat: Plant species for medicinal use**		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
15. Specify threat: Plant species for food**		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
16. Specify threat: Illegal logging and timber harvesting**		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
17. Specify threat: Legal logging and timber harvesting**		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
18. Specify threat: Fishing and harvesting aquatic resources		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	

B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
19. Specify threat: Garbage and solid waste**		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
20. Specify threat: Earthquakes		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
21. Specify threat: Landslides		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
22. Specify threat: Erosion and siltation/ deposition (e.g. shoreline or riverbed changes)		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	

23. Specify threat: Storms and flooding		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
23. Specify threat: Loss of cultural links, traditional knowledge and/or management practices		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	
24. Specify threat: Natural deterioration of important cultural site values		
Threat (specific if current or potential):		
Impact of threat		Management response
Extent: Describe the extent of the impact under one of the three descriptors given below	Severity: Describe how severe the impact under one of the three descriptors given below	Action: What actions are planned or have taken place to manage the threat
A: Small section of the site (5-10%):	A: Minor impact:	
B: Several areas of the site (11-50%):	B: Major impact but not continuous:	
C: Most of the site (51-100%):	C: Major continuous impact:	

Protected Area /Forest Division Management Activities: Assessment Sheet 3	
Please tick the two critical management activities currently undertaken in the protected area	Comment/Explanation
☐ Law enforcement and surveillance	
☐ Promoting sustainable resource use	
☐ Working with local communities	
☐ Education and awareness	
☐ Demarcation and zoning	
☐ Monitoring	
☐ Research	
☐ Management planning	
☐ Ecotourism	
☐ Building institutional and governance capacity	
☐ Species management	
☐ Infrastructure development	
☐ Fundraising	
☐ Restoration	
☐ Fire management	
☐ Resolving tenure problems	
☐ Human-wildlife conflict management	
☐ Alien species control	
☐ External communication and publicity	
☐ Equipment and facilities	
☐ Improving habitat	
☐ Species (re)introduction / control / breeding	
☐ Working with regional authorities	
☐ Other	

Protected Area / Forest Division Management Effectiveness: Assessment				
Issue	Criteria	Score: Tick only one box per question	Comment/Explanation	Next steps
1. Legal status Does the protected area/forest division have legal status (or in the case of private reserves is covered by a covenant or similar)? Context	The protected area/forest division is not gazetted/covenanted	0		
	There is agreement that the protected area/Forest Division should be gazetted/covenanted but the process has not yet begun	1		
	The protected area /Forest Division is in the process of being gazetted/covenanted but the process is still incomplete (includes sites designated under international conventions, such as Ramsar, or local/traditional law such as community conserved areas, which do not yet have national legal status or covenant)	2		
	The protected area/Forest Division has been formally gazetted/covenanted	3		
2. Protected area/forest division regulations Are appropriate regulations in place to control land use and activities (e.g. hunting)? Planning	There are no regulations for controlling land use and activities in the protected area /forest division	0		
	Some regulations for controlling land use and activities in the protected area / Forest Division exist but there are major weaknesses	1		
	Regulations for controlling land use and activities in the protected area / Forest Division exist but there are some weaknesses or gaps	2		
	Regulations for controlling inappropriate land use and activities in the protected area/ Forest Division exist and provide an excellent basis for management	3		
3. Law enforcement Can staff (i.e. those with responsibility for managing the site) enforce protected area / Forest Division rules well enough? Input	The staff have no effective capacity/resources to enforce protected/forest division area legislation and regulations	0		
	There are major deficiencies in staff capacity/resources to enforce protected area/forest division legislation and regulations (e.g. lack of skills, no patrol budget, lack of institutional support)	1		
	The staff have acceptable capacity/resources to enforce protected area legislation and regulations but some deficiencies remain	2		
	The staff have excellent capacity/resources to enforce protected area/forest division legislation and regulations	3		
4. Protected area/forest division objectives Is management undertaken according to agreed objectives? Planning	No firm objectives have been agreed for the protected area/forest division	0		
	The protected area/forest division has agreed objectives, but is not managed according to these objectives	1		
	The protected area/forest division has agreed objectives, but is only partially managed according to these objectives	2		
	The protected area/forest division has agreed objectives and is managed to meet these objectives	3		

5. Protected area/forest division design Is the protected area/forest division the right size and shape to meet the objectives (protect species, habitats, ecological processes and water catchments of key conservation concern, resource utilization) Planning	Inadequacies in protected area/forest division design mean achieving the major objectives of the protected area is very difficult	0		
	Inadequacies in protected area/forest division design mean that achievement of major objectives is difficult but some mitigating actions are being taken (e.g. agreements with adjacent land owners for wildlife corridors or introduction of appropriate catchment management)	1		
	Protected area/forest division design is not significantly constraining achievement of objectives, but could be improved (e.g. with respect to larger scale ecological processes)	2		
	Protected area/forest division design helps achievement of objectives; it is appropriate for species and habitat conservation; and maintains ecological processes such as surface and groundwater flows at a catchment scale, natural disturbance patterns etc	3		
6. Protected/forest division area boundary demarcation Is the boundary known and demarcated? Process	The boundary of the protected area/forest division is not known by the management authority or local residents/neighbouring land users	0		
	The boundary of the protected area/forest division is known by the management authority but is not known by local residents/neighbouring land users	1		
	The boundary of the protected area/forest division is known by both the management authority and local residents/neighbouring land users but is not appropriately demarcated	2		
	The boundary of the protected area / forest division is known by the management authority and local residents/neighbouring land users and is appropriately demarcated	3		
7. Management plan Is there a management plan and is it being implemented? Planning	There is no management plan for the protected area/forest division	0		
	A management plan is being prepared or has been prepared but is not being implemented	1		
	A management plan exists but it is only being partially implemented because of funding constraints or other problems	2		
	A management plan exists and is being implemented	3		
Bhutan METT+: If a management plan is just running out and there is a process underway to redo the plan this is equivalent to score 3: a management plan exists				
Additional points: Planning				
7a. Planning process	The planning process allows adequate opportunity for key stakeholders to influence the management plan	1		
7b. Planning process	There is an established schedule and process for periodic review and updating of the management plan	1		
7c. Planning process	The results of monitoring, research and evaluation are routinely incorporated into planning	1		

8. Regular work plan Is there a regular work plan and is it being implemented	No regular work plan exists	0			
	A regular work plan exists but few of the activities are implemented	1			
	A regular work plan exists and many activities are implemented	2			
	A regular work plan exists and all activities are implemented	3			
9. Resource inventory Do you have enough information to manage the area? Input	There is little or no information available on the resource (critical habitats, species(flora & fauna), growing stocks and cultural values) of the protected area/forest division	0			
	Information on the resource (critical habitats, species(flora & fauna), growing stocks and cultural values) of the protected area/forest division not sufficient to support planning and decision making	1			
	Information on the resource (critical habitats, species(flora & fauna), growing stocks and cultural values) of the protected area/forest division sufficient for most key areas of planning and decision making	2			
	Information on the resource (critical habitats, species(flora & fauna), growing stocks and cultural values) of the protected area/forest division sufficient for all areas of planning and decision making	3			
10. Protection systems Are systems in place to control access/resource use in the protected area/ forest division? Process/Outcome	Protection systems (patrols, permits etc) do not exist or are not effective in controlling access/resource use	0			
	Protection systems are only partially effective in controlling access/resource use	1			
	Protection systems are moderately effective in controlling access/resource use	2			
	Protection systems are largely or wholly effective in controlling access/ resource use	3			
11. Research Is there a programme of management-orientated survey and research work? Process	There is no survey or research work taking place in the protected area/ forest division	0			
	There is some survey and research work but it is not directed towards the needs of protected area / forest division management	1			
	There is some survey and research work which is at least partly directed towards the needs of protected area / forest division management	2			
	There is a comprehensive, integrated programme of survey and research work, which is relevant to management needs	3			

12. Resource management Is active resource management being undertaken? Process	Active resource management is not being undertaken	0			
	Very few of the requirements for active management of critical habitats, species, ecological processes, cultural values and sustainable resource production are being implemented	1			
	Many of the requirements for active management of critical habitats, species, ecological processes, cultural values and sustainable resource production are being implemented but some key issues are not being addressed	2			
	Requirements for active management of critical habitats, species, ecological processes, cultural values and sustainable resource production are being substantially or fully implemented	3			
12a: Management of NTFPs	A management plan exists for the management of all major non timber forest products actively collected within the protected area / forest division	1			
12b: Management of medicinal plants	A management plan exists for the management of all major medicinal plants actively collected within the protected area / forest division	1			
12c: Management of Other conservation areas (OCAs)	A management plan exists for all Other conservation areas (OCAs) within the protected area/forest division	1			
Bhutan METT+: consideration of this question includes issues relating to land leasing					
13. Staff numbers Are there enough people employed to manage the protected area forest division ? Inputs	There are no staff	0			
	Staff numbers are inadequate for critical management activities	1			
	Staff numbers are below optimum level for critical management activities	2			
	Staff numbers are adequate for the management needs of the protected area / forest division	3			
14. Staff training Are staff adequately trained to fulfil management objectives? Inputs/Process	Staff lack the skills needed for protected area / forest division management	0			
	Staff training and skills are low relative to the needs of the protected area /forest division	1			
	Staff training and skills are adequate, but could be further improved to fully achieve the objectives of management	2			
	Staff training and skills are aligned with the management needs of the protected area / forest division	3			
15. Current budget Is the current budget sufficient? Inputs	There is no budget for management of the protected area / forest division	0			
	The available budget is inadequate for basic management needs and presents a serious constraint to the capacity to manage	1			
	The available budget is acceptable but could be further improved to fully achieve effective management	2			
	The available budget is sufficient and meets the full management needs of the protected area / forest division	3			

Bhutan METT+: Budgets in Bhutan are divided by capital budget (infrastructure development etc) and current budget (operational costs, e.g. staff costs). Consideration of both budgets should be made when answering question 15 (and 16 and 17). The comment/explanation column should be used to detail specific issues concerning budget allocations etc.						
16. Security of budget Is the budget secure? Inputs	There is no secure budget for the protected area/forest division and management is wholly reliant on outside or highly variable funding	0				
	There is very little secure budget and the protected area/forest division could not function adequately without outside funding	1				
	There is a reasonably secure core budget for regular operation of the protected area/forest division but many innovations and initiatives are reliant on outside funding	2				
	There is a secure budget for the protected area/ forest division and its management needs	3				
17. Management of budget Is the budget managed to meet critical management needs? Process	Budget management is very poor and significantly undermines effectiveness (e.g. late release of budget in financial year)	0				
	Budget management is poor and constrains effectiveness	1				
	Budget management is good and actions are prioritised when funds are inadequate to meet management needs	2				
	Budget management is excellent and meets management needs	3				
18. Equipment Is equipment sufficient for management needs? Input	There are little or no equipment and facilities for management needs	0				
	There are some equipment and facilities but these are inadequate for most management needs	1				
	There are equipment and facilities, but still some gaps that constrain management	2				
	There are adequate equipment and facilities	3				
Bhutan METT+: Most protected areas cover large areas, there are thus likely to be differences in equipment availability in park/ division headquarters and guard posts around the park. Question 18 should consider equipment across the whole protected area / forest division and specific concerns regarding availability should be included in the comment/explanation and next steps column						
19. Maintenance of equipment Is equipment adequately maintained? Process	There is little or no maintenance of equipment and facilities	0				
	There is some ad hoc maintenance of equipment and facilities	1				
	There is basic maintenance of equipment and facilities	2				
	Equipment and facilities are well maintained	3				
20. Education and awareness Is there a planned education programme linked to the objectives and needs? Process	There is no education and awareness programme	0				
	There is a limited and ad hoc education and awareness programme	1				
	There is an education and awareness programme but it only partly meets needs and could be improved	2				
	There is an appropriate and fully implemented education and awareness programme	3				

21. Planning for land and water use	Adjacent land and water use planning does not take into account the needs of the protected area/forest division and activities/policies are detrimental to the survival of the area	0		
Does land and water use planning outside the protected area/forest division recognise the protected area/forest division and aid the achievement of objectives?	Adjacent land and water use planning does not take into account the long term needs of the protected area/forest division, but activities are not detrimental the area	1		
	Adjacent land and water use planning partially takes into account the long term needs of the protected area/forest division	2		
Planning	Adjacent land and water use planning fully takes into account the long term needs of the protected area/forest division	3		
Bhutan METT +: This question is specific to activities outside of the protected area / forest division . EIA's are supposed to take place for any developments. Issues in Bhutan include hydropower, transmission lines and mining.				
Additional points: Land and water planning				
21a: Land and water planning for habitat conservation	Planning and management in the catchment or landscape containing the protected area/forest division incorporates provision for adequate environmental conditions (e.g. volume, quality and timing of water flow, air pollution levels etc) to sustain relevant habitats	1		
21b: Land and water planning for connectivity	Management of corridors linking the protected area/forest division provides for wildlife passage to key habitats outside the protected area (e.g. to allow migratory fish to travel between freshwater spawning sites and the sea, or to allow animal migration)	1		
21c: Land and water planning for ecosystem services and species conservation	Planning addresses ecosystem-specific needs and/or the needs of particular species of concern at an ecosystem scale (e.g. volume, quality and timing of freshwater flow to sustain particular species, fire management to maintain grassland habitats etc.)	1		
22. State and commercial neighbours	There is no contact between managers and neighbouring official or corporate land and water users	0		
Is there co-operation with adjacent land and water users?	There is contact between managers and neighbouring official or corporate land and water users but little or no cooperation	1		
Process	There is contact between managers and neighbouring official or corporate land and water users, but only some co-operation	2		
	There is regular contact between managers and neighbouring official or corporate land and water users, and substantial co-operation on management	3		
22a: State and commercial neighbours	There is regular contact and substantial cooperation with any hydropower developers and operators whose operations impact protected area /forest division management	1		
22b: State and commercial neighbours	There is regular contact and substantial cooperation with any developers and operators of linear infrastructure (e.g. transmission lines and/or roads) whose operations impact protected area / forest division management	1		
22c: State and commercial neighbours	Where the protected area/forest division provides important natural resources for commercial operations (e.g. municipal water companies or hydropower operators) payments for ecological services agreements are in place	1		

23. Local communities	Local communities have no input into decisions relating to the management of the protected area/forest division	0		
Do local communities resident or near the protected area/forest division have input to management decisions?	Local communities have some input into discussions relating to management but no direct role in management	1		
	Local communities directly contribute to some relevant decisions relating to management but their involvement could be improved	2		
Process	Local communities directly participate in all relevant decisions relating to management, e.g. co-management	3		
Additional points Local communities				
23a: Impact on communities	There is open communication and trust between local people, stakeholders and protected area/forest division managers	1		
23b: Impact on communities	Programmes to enhance community welfare, while conserving protected area/forest division resources, are being implemented	1		
23c: Impact on communities	Local people actively support the protected area/forest division	1		
24. Economic benefit	The protected area/forest division does not deliver any economic benefits to local communities	0		
Is the protected area/forest division providing economic benefits to local communities, e.g. income, employment, payment for environmental services?	Potential economic benefits are recognised and plans to realise these are being developed	1		
	There is some flow of economic benefits to local communities	2		
	There is a major flow of economic benefits to local communities from activities associated with the protected area/forest division	3		
Outcomes				
25. Monitoring and evaluation	There is no monitoring and evaluation in the protected area/forest division	0		
Are management activities monitored against performance?	There is some ad hoc monitoring and evaluation, but no overall strategy and/or no regular collection of results	1		
	There is an agreed and implemented monitoring and evaluation system but results do not feed back into management	2		
Planning/Process	A good monitoring and evaluation system exists, is well implemented and used in adaptive management	3		
26. Visitor facilities	There are no visitor facilities and services despite an identified need	0		
Are visitor facilities adequate?	Visitor facilities and services are inappropriate for current levels of visitation	1		
	Visitor facilities and services are adequate for current levels of visitation but could be improved	2		
Outputs	Visitor facilities and services are excellent for current levels of visitation	3		

27. Commercial tourism operators Do commercial tour operators contribute to protected area/ forest division management? Process	There is little or no contact between managers and tourism operators using the protected area/forest division	0		
	There is contact between managers and tourism operators but this is largely confined to administrative or regulatory matters	1		
	There is limited co-operation between managers and tourism operators to enhance visitor experiences and maintain protected area / forest division values	2		
	There is good co-operation between managers and tourism operators to enhance visitor experiences, and maintain protected area/forest division values	3		
28. Fees If fees (e.g. entry fees) are applied, do they help protected area/forest division management? Inputs/Process	Although fees are theoretically applied, they are not collected	0		
	Fees are collected, but make no contribution to the protected area/forest division or its environs	1		
	Fees are collected, and make some contribution to the protected area/forest division and its environs	2		
	Fees are collected and make a substantial contribution to the protected area/forest division and its environs	3		
29. Fines If fines (e.g. poaching fines) are applied, do they help protected area management? Inputs/Process	There are no fines, or fines are theoretically applied but are seldom or never collected	0		
	Fines are collected, but make no direct contribution to the protected area/forest division or its environs	1		
	Fines are collected, and make some contribution to the protected area/forest division and its environs	2		
	Fines are collected and make a substantial contribution to the protected area/forest division and its environs	3		
Bhutan METT +: The term “protected area or its environs” can include incentive schemes such as payments to informers of poachers				
30. Condition of biodiversity and ecological values What is the condition of the important biodiversity values of the protected area/ forest division as compared to when it was first designated? Outcomes	Many biodiversity and ecological values are being severely degraded	0		
	Some biodiversity and ecological values are being severely degraded	1		
	Some biodiversity and ecological values are being partially degraded but the most important values have not been significantly impacted	2		
	Biodiversity and ecological values are predominantly intact	3		
Additional Points: Condition of values				
30a: Condition of biodiversity values	The assessment of the condition of biodiversity and ecological values is based on research and/or monitoring	1		

30b: Condition of biodiversity values	Specific management programmes are being implemented to address threats to biodiversity and ecological values	1			
30c: Condition of biodiversity values	Activities to maintain key biodiversity and ecological values are a routine part of protected area/forest division management	1			
Bhutan METT + questions					
31. Condition of cultural values	Many cultural values are being severely degraded	0			
	Some cultural values are being severely degraded	1			
What is the condition of the important cultural values of the protected area/forest division as compared to when it was first designated?	Some cultural values are being partially degraded but the most important values have not been significantly impacted	2			
Outcomes	Cultural values are predominantly intact	3			
32. Access	Staff are unable to move around the protected area/forest division and thus much of the protected area/ forest division is inaccessible throughout the year	0			
How accessible is the protected area/forest division?	There are significant restrictions on the ability of staff to move around the protected area/forest division throughout the year (e.g. in the rainy season) and thus much of the protected area/ forest division (e.g. over 50 % of the area) is inaccessible some or all of the year	1			
Planning / Process	Staff are able to move relatively easily around the protected area / forest division and thus most of the protected area/forest division is accessible, although some areas (e.g. less than 50 % of the area) remain inaccessible some or all of the year	2			
	Staff are able to move easily around the whole protected area/forest division and the majority of the protected area / forest division is fully accessible	3			
33. Neighbouring protected areas/forest division	There is no contact between managers of adjoining protected areas/forest division on issues which impact protected area/forest division management effectiveness	0			
Is there co-operation with adjoining protected areas/forest division (national and international)?	There is limited contact between managers of adjoining protected areas/forest division but little cooperation on issues which impact protected area/ forest division management effectiveness	1			
	There is contact between managers of adjoining protected areas/forest division and some cooperation on protected area/forest division management effectiveness	2			
Process	There is regular contact between managers of adjoining protected areas/forest division and full cooperation on ensuring management effectiveness	3			

34.	Is the protected area/forest division being consciously managed to adapt to climate change? Planning	There have been no efforts to consider	0		
	Some initial thought has taken place about likely impacts of climate change, but this has yet to be translated into management plans	1			
	Limited plans have been drawn up about how to adapt management to predicted climate change, which may or may not be being implemented	2			
	Detailed plans have been drawn up about how to adapt management to predicted climate change, and these are already being implemented	3			
35. Is the protected area/forest division being consciously managed to prevent carbon loss and to encourage further carbon capture? Process	Carbon storage and carbon dioxide capture has not been considered in management of the protected area/forest division		0		
	Carbon storage and carbon dioxide capture has been considered in general terms, but has not yet been significantly reflected in management		1		
	There are active measures in place to reduce carbon loss from the protected area/forest division, but no conscious measures to increase carbon dioxide capture	2			
	There are active measures in place both to reduce carbon loss from the protected area/forest division and to increase carbon dioxide capture		3		

Protected Area / Forest Division Outcome Baseline: Assessment Sheet 5	
For this assessment to be completed a list of core indicators needs to be developed. Once indicators have been agreed then the form below should be completed for each indicator from each protected area / forest division thus providing a summary of the baseline data available. An initial list of indicators was developed in the METT workshops[1].	
Indicator	
Baseline data	Summary of data (e.g. number of species, vegetation cover etc)
Date: 2018-2021	
Data: 2015-2018	
Data: 2010-2015	
Data: 2000-2009	
Data: Pre-2000	
Data in preparation	
Data collection planned	
No data collection	
Additional notes	
[1] See: Wildlife Conservation Division and Equilibrium Research (2015). Management Effectiveness of Protected Areas in Bhutan: A training session and initial assessment of five protected areas. Thimphu, Bhutan and Bristol, UK	

Annexure I					
The guidance provided below should be considered when filling in the threat assessment (Assessment Sheet 1). The guidance has been developed to describe threat levels specific to Bhutan and will help ensure equivalence across the assessments of all protected areas in the country. (Threats assessed as of high significance can be assessed in more detail using Assessment Sheet 2). Where specific numbers are provided (as in human wildlife conflict) the indicator should be assessed against actual monitoring data, if available, or expert opinion if not. Generally, if expert opinion indicates a high threat a management action suggested in Assessment Sheet 2 would likely be to develop monitoring.					
Threat (question number)	Indicators	High	Medium	Low	Assessment methods/Guide Note
Livestock farming and grazing (2.3)	Evidence of degradation	Grazing is causing major degradation, e.g. loss/reduction of species covering over more than 25% of the FD.	Grazing is causing minor degradation, e.g. loss/reduction of species covering between 11-24% of the FD.	Grazing is causing minor degradation, e.g. loss/reduction of species covering over less than 10% of the FD.	Assesment Method (uniform for all IKI landscape DFOs). % area impacted by presence of livestock to the total DFO area
		And/or	And/or	And/or	
		Negative impact such as absence of natural regeneration, invasion by invasive species and impact of migratory cattle/sedentary ranching (herding in one location) are prevalent.	Some evidence of negative impact such as absence of natural regeneration, invasion by invasive species and some evidence impact of migratory cattle/sedentary ranching (herding in one location) are prevalent.	No evidence of negative impacts such as absence of natural regeneration, invasion by invasive species and no evidence of impact of migratory cattle/sedentary ranching (herding in one location) are prevalent.	
Extraction of minerals, quarries, etc (3.2)	Evidence of impact including potential threat	2 or more mines inside the protected area and no proper guidelines for mining operations	1 mine inside the protected area with no proper guidelines for mining operations	Mining takes place, but is managed under strict mining guidelines	Measure in % in relation to the total area of the respective DFOs
		And/or			
		Mines in core zone			
		And/or			
		Open cast mines			

Road construction (4.1)	Evidence of impact of highway(Road) building	Evidence of major impacts on habitats and species through road building, widening and spill-over extends to over 15 metres width either side of the right of way in over 50% of road construction in the park.	Evidence of major impacts on habitats and species through road building, widening and spill-over extends to over 15 metres width either side of the road beyond the right of way in over 50% of the park.	Evidence of major impacts on habitats and species through road building, widening and spill-over extends to less than 15 metres width either side of the road beyond the right of way in over 25% of the park	Consider GC and Farm roads for assessment, rather than just Highway
		And/or	And/or		
		No evidence of restoration; thus the road construction has led to fragmentation of park/habitat.	Limited evidence of restoration; thus the road construction has lead to fragmentation of park/habitat.		
		And/or	And/or		
Power Transmission Lines (4.2)	Evidence of Impact Forest fire caused by faulty transmission lines Frequency of unnatural fires	The road construction cuts through the entire park including the core zone. There is negative impact on streams/rivers used by wildlife, regulations related to noise control not followed.	The road construction cuts through some parts of the park (excluding the core zone which if impacted is seen as high threat) and there is negative impact on streams/rivers used by wildlife, regulations related to noise control followed but not effective	There is some evidence of impacts on habitats and species in the immediate area of the transmission lines	
		Over 2 forest fires within the last 5 years caused by faulty transmission lines	1-2 forest fires within the last 5 years caused by faulty transmission lines		
		And/or	And/or		
		There is major evidence of impacts on habitats and species in the immediate area of the transmission lines	There is evidence of impacts on habitats and species in the immediate area of the transmission lines		

Human Wildlife Conflicts (5.1a)	Number of conflicts Protected species killed Human life lost/serious, life changing injury	Within the last 5 years:	Within the last 5 years:	Within the last 5 years:	
		Any deaths or suspected deaths of tiger, snow leopard or elephant	Any deaths or suspected deaths of 5 or more species (other than tiger, snow leopard or elephant which are considered as high threat) listed in the Forest and Nature Conservation Act	Less than 5 deaths or suspected deaths of species (other than tiger, snow leopard or elephant which are considered as high threat) listed in the Forest and Nature Conservation Act	No need to consider natural deaths for this assessment
		And/or	And/or	And/or	
		Any recorded deaths or life changing injury (e.g. loss of limbs which impacts livelihoods)	Records of 5 or more injuries (not life changing)	Less than 5 records of injuries (not life changing)	
		And/or	And/or	And/or	
		50 or more number of livestock depredation annually	25-50	less than 25	by number for Yak/cattle/goat/sheep & horse, and by number of cases for poultry
		Loss of 50% of annual crops at a household level	Loss of 25-49% of annual crops at a household level	Loss of less than 25% of annual crops at a household level	
		And/or	And/or	And/or	
		Complete destruction of permanent infrastructure	Major damage to permanent infrastructure	Minor damage to permanent and temporary infrastructure	
		Evidence of poaching of at more than one, Schedule I(Fauna) and >25 of schedule II listed fauna and flora.	Evidence of poaching of at least one totally protected wild fauna and 15-24 of schedule II listed fauna and flora of schedule I and II.	No evidence of poaching of schedule list I fauna and less than 15 numbers of poaching of schedule list II of both flora and fauna.	Based on the data maintained in FIRMS, SMART Patrol and records of wildlife poaching and fines realised with DFO
Wildlife Poaching (5.1 b)	Number of wild animals lost (schedule I and II of fauna) Number of poachers arrested Number of poaching evidences (camps, traps, snares)	And/or	And/or	And/or	
		15 + poachers arrested	6 – 10 poachers arrested	<5 poachers arrested	
		And/or	And/or	And/or	
		50 + poaching evidences (camps, traps, snares)	11 – 30 poaching evidences (camps, traps, snares)	<10 poaching evidences (camps, traps, snares)	
		Widespread (over 50% of the area of the species collected) show evidence of any of the below:	Widespread (between 25-49% of the area of the species collected) show evidence of any of the below:	Some concern about species and/or habitat decline	
NWFP Collection (5.2 a,b,c)	Evidence of species at serious risk	- Whole plant uprooting	- Whole plant uprooting	And/or	
		- Thriving market/demand and absence of management plan/regulations	- Thriving market/demand and absence of management plan/regulations	Unreliable data on species ecology available	
		- No reliable data on resilience of species	- No reliable data on resilience of species		

Illegal Timber Felling (5.3)	Evidence of degradation	Evidence of major impacts on habitats and species through illegal forest operation has impacted up to 10% of the park area over last 5 years	Evidence of major impacts on habitats and species through illegal forest operation has impacted up to between 5 -9% of the park area over last 5 years	Evidence of major impacts on habitats and species through illegal forest operation has impacted less than 5% of the park area over 5 last years	Based on the offence cases registered and illegal timber felling site areas.
		Evidence of major impacts on habitats and species through illegal forest operation has impacted up to 10% of the park area over last 5 years	Evidence of major impacts on habitats and species through illegal forest operation has impacted up to between 5-9% of the park area over last 5 years	Evidence of major impacts on habitats and species through illegal forest operation has impacted up to less than 5% of the park area over last 10 years	
Legal Timber Felling (5.3a)	Evidence of Degradation	No ecotourism plan for the protected area	Ecotourism plan exists for the protected area but there are no proper facilities for tourists and/or control over where tourists travel (e.g. in core areas)	Ecotourism Plan exists but is not effectively implemented or monitored	Based on areas of forest degraded due to legal timber logging in different management regimes, leased areas, and developmental activities
		No proper facilities or control over tourist travelling in the designated conservation areas (e.g. in core zones)			
Unmanaged ecotourism (6.1a)	Evidence of impact	Evidence of major impacts on habitats and species through unnatural fire occurrences (arson, accident etc) fire has impacted > 10% of the park area over the last 5 years.	Evidence of major impacts on habitats and species through unnatural fire occurrences (arson, accident etc) fire has impacted up 5-10% of the park area over the last five years.	Evidence of major impacts on habitats and species through unnatural fire occurrences – (arson, accident etc) fire has impacted less than 5% of the park area over the last five years.	Consider fire burnt time/duration in the assessment
Forest Fires (7.1)	Evidence of degradation	Impacts to consider include:	Impacts to consider include:	Impacts to consider include:	
		· Fires burn for several days and response time is long	· Fires burn for several days and response time is long	· Fires burn for several days and response time is long	
		· No. of fires in the same locality	· No. of fires in the same locality	· No. of fires in the same locality	

Hydro Power (7.2)	Evidence of Impact Loss of habitat of water birds	Evidence of some impacts on habitats including:	Evidence of impacts on habitats including one or few of the following	Minor impacts of road construction and some evidence of mitigation/restoration despite EIA and Environmentally Friendly Road Construction Guidelines reportedly being followed	
		· Designated conservation areas		And/or	
		· Endangered species	Only limited evidence of restoration/mitigation	Presence of interventions in place but unclear if these are functional	
		· Flight path.			
		· Exceeding 50 meters on either sides of transmission lines	EMP and Environmentally Friendly Road Construction Guidelines are being followed in some but not all sites		
		· No evidence of mitigation/restoration			
		· EMP prescriptions not followed/complied	Presence of fish migratory ladders(Related interventions-proposed) but not properly designed & functional		
			Habitat restoration programmes in place but not functional		
		Major presence of non-biodegradable waste	Presence of non-biodegradable waste but being collected	There is no evidence of impacts on habitats	
Solid Waste (9.4)	Evidence of Impact Enforcement/compliance of rules	And/or	And/or	And/or	
		Evidence of deaths caused by consumption of wastes by wildlife	Some evidence of deaths caused by consumption of wastes by wildlife	Compliance of rules adequately	
		And/or	And/or		
		Spillage of waste into rivers/streams	Some evidence of spillage of waste into rivers/streams		
		And/or	And/or		
		No enforcement/compliance of rules	Some level of enforcement/compliance of rules		

REFERENCE

DoFPS. (2021). Forest and Nature Conservation Code of Best Management Practices of Bhutan. Ministry of Agriculture and Forests, Department of Forests and park Services.

Nature Conservation Division. (2020). Biodiversity Monitoring Protocol. Department of Forests and Park Services, RGoB.

Thomos, L., Middleton, J., and Phillips, A. (2003). *Guidelines for Management Planning of Protected Areas*. World Commission on Protected Areas. Best Practice Protected Area Guidelines Series No. 10. IUCN Gland, Switzerland and Cambridge, UK. ix+79pp.



**Department of Forests & Park Services
Ministry of Agriculture & Forests
Royal Government of Bhutan**