



Forest Monitoring & Evaluation Framework 2024

Forest Monitoring and Information Division
Department of Forests and Park Services
Ministry of Energy and Natural Resources
Royal Government of Bhutan

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FOREWORD

Sustainable management and conservation of forest resources is essential for the ecological, social, and economic well-being of Bhutan. As a nation committed to maintaining at least 60% forest cover in perpetuity, our forests are not only vital for biodiversity conservation but also for fulfilling national development goals and international environmental commitments. The State Reserved Forests Land (SRFL) are managed under diverse regimes such as *Forest Management Unit*, *Protected Areas*, *Community Forests*, *Local Forest Management Areas* with approved management plans and several cross-cutting regimes such as *Plantation*, *Non-Wood Forest Products & Marketing Groups*. These regimes are implemented to achieve the specific goals and objectives. Effective monitoring and evaluation (M&E) of these plans are crucial to ensure that forest management are adaptive, accountable, and aligned with Bhutan's long-term goals of forest conservation and sustainable resource use.

The Department of Forests and Park Services is mandated to monitor and evaluate the activities carried in the SFRL as per the section 84 of the Forest and Nature Conservation Act (FNCA) of Bhutan 2023. However, recognising the limitation of the previous M&E system, including lack of harmonization among the different management regimes and lack of robust and proper standards, this revised framework, incorporates well-defined objectives, indicators, and methodologies that reflects current best practices and evolving national and international standards. It offers a more robust and integrated approach to monitoring and evaluation for better assessing the impacts and progress both quantitatively and qualitatively. The revision process involved extensive consultations with field offices, and functional divisions, ensuring that the framework is comprehensive, relevant, and practical for field applications. Field testing of the revised M&E tools has further strengthened its resilience and applicability.

Therefore, the Forest Monitoring and Evaluation Framework provides standardized platform for effective monitoring and reporting, enchainning sustainability and protection of biodiversity as desired under the provisions of the FNCA, 2023 and Forest and Nature Conservation Code of Best Management Practices of Bhutan 2021.

It is therefore a great pleasure and delight to congratulate the Forest Monitoring and Information Division for leading and all field offices for their dedication and hardwork in developing this framework. This will strengthen the sustainable forest resources management and biodiversity conservation practices in Bhutan and contribute to the preservation of our natural heritage for present and future generations to come.

Tashi Delek!

(Lobzang Dorji)

Director



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ROYAL GOVERNMENT OF BHUTAN
MINISTRY OF ENERGY AND NATURAL RESOURCES
DEPARTMENT OF FORESTS AND PARK SERVICES
FOREST MONITORING AND INFORMATION DIVISION



ACKNOWLEDGEMENT

Forest Monitoring and Evaluation (M&E) is important to ensure all management regimes are implemented as per the scientific prescription of the Forest and Nature Conservation Code of Best Management Practices of Bhutan 2021. This is key to sustainable forest management in Bhutan and, accordingly, the requirement of a systematic monitoring and evaluation system for the different management regimes has also been emphasized in the Forest and Nature Conservation Act of Bhutan 2023 and the Forest and Nature Conservation Rules and Regulation of Bhutan 2023.

And though, there exist periodic monitoring and evaluation for some management regimes, institutionalizing the M&E process for all regimes required indepth study of all the regimes and the development of clear indicators and activities. The Forest Monitoring and Evaluation Framework for Bhutan 2024 provides guidance on conducting monitoring and evaluation through standardization of process, defining clear indicators and linkages between the activities and their overall outcome and objective of the different forest management regimes. And I would like to thank Jamyang Choden, Changa Tshering and all others in the Forest Monitoring and Information Division (FMID) for initiating the tedious work and giving a platform for others to contribute in the development of the Framework.

I would also like to thank the Hon'ble Director, Department of Forests and Park Services for his unwavering support for the development of this Framework and beyond in our pursuit towards achievement of the mission and vision of the Department and the overall goal of a “*Developed Bhutan*”. The M&E Framework is also a result of the contribution of all the focal officials who participated extensively during the consultation meeting in Lamoigompa, Bumthang and for spearheading the field test from October to December 2023. They contributed immensely and shaped the M&E document into the Framework that we have today. I would also like to thank Tshering Pem, Nature Conservation Division and Tsheltrim Dorji, Forest Resources Planning and Management Division for their contribution especially in the development of the M&E framework for Protected Area and the Community Forest regimes.

The framework also went through extensive consultation with the Chief Forestry Officers from all field offices, who contributed greatly, for which we are immensely grateful. We would also like to thank the Royal Government of Bhutan, Bhutan for Life Project, and the IKI Living Landscape Project for their support in the development and implementation of the Framework.

Lastly, I would like to thank the Dorji Wangdi, Norbu Zangmo, Tez Bdr Ghalley, Jamyang Choden Kinga Norbu for your hardwork and dedication in the development of the framework. All other officials from FMID including Rixzin Wangchuk, and all the Chief Forestry Officer and focal officers from the field office also deserve special mention for your support in the development of the framework.

Thank you all very much.

(Kinley Dem)
Chief Forestry Officer

ACRONYM

AAC	Annual Allowable Cut
AFS	Annual Forestry Statistics
AMF	Annual Monitoring Form
AMSS	Annual Monitoring Summary Sheet
AOP	Annual Operational Plan
ARK	Annual Record Keeping
ATT	Aggregate Total Timber
ATA	Annual Timber Allocation
AWP	Annual Work Plan
BBPL	Bhutan Board Product Limited
BC	Biological Corridor
Bhutan METT+	Bhutan Management Effectiveness Tracking Tool Plus
BMG	Biodiversity Monitoring Grids
CFMG	Community Forest Management Group
CFMP	Community Forest Management Plan
CFO	Chief Forestry Officer
CF	Community Forests
CL	Cable Lines
CMP	Conservation Management Plan
CoFP	Code of Forest Practice
COP	Conservation Operational Plan
DBH	Diameter at Breast Height
DFO	Divisional Forest Office
DoFPS	Department of Forests and Park Services
FAO	Food and Agriculture Organization
FIRMS	Forest Information Reporting and Monitoring System
FMID	Forest Monitoring and Information Division
FMU	Forest Management Unit
FNCA	Forest and Nature Conservation Act
<i>Code</i>	Forest and Nature Conservation Code of Best Management Practices of Bhutan
FNCR	Forest and Nature Conservation Rules and Regulations
FO	Field Office
FRPMD	Forest Resource Planning and Management Division
FWC	Forest Working Circle
FYP	Five Year Plan
G2C	Government to Citizen
GBCL	Green Bhutan Corporation Limited
GPS	Global Positioning System

GSB	Granular Sub Base
GIS	Geographical Information System
Ha	Hectare
HH	Household
HWC	Human Wildlife Conflict
Kg	Kilogram
Km	Kilometer
LFMA	Local Forest Management Area
LFMP	Local Forest Management Plan
LG	Local Government
LULC	Land Use Land Cover
M&E	Monitoring And Evaluation
m ³	Metric Cube
MoENR	Ministry of Energy And Natural Resources
MP	Management Plan
MP C & I	Montreal Process Criteria and Indicators
MRK	Monthly Record Keeping
NA	National Park
NCD	Nature Conservation Division
No.	Number
NR	Natural Regeneration
NRDCL	Natural Resources Development Corporation Limited
NRPC	Natural Resources Pricing Committee
Nu	Ngultrum
NWFP	Non-Wood Forest Product
NWFP-MG	Non-Wood Forest Products Management & Marketing Group
NWFPS	Non-Wood Forest Products
OFS	Online Forestry Services
OP	Operational Plan
PA	Protected Area
PAN	Protected Area Network
PES	Payment For Ecosystem Services
PME	Plantation Monitoring & Evaluation
PFO	Principal Forestry Officer
PWC	Production Working Circle
PWC	Protection Working Circle
Qty	Quantity
RM	Regional Manager
RRA	Rapid Rural Appraisal
SFED	Social Forestry and Extension Division

SFM	Sustainable Forest Management
SMART	Spatial Monitoring and Reporting Tool
SNR	Strict Nature Reserve
SRFL	State Reserve Forests Land
TAC	Technical Advisory Committee
T/L	Truck Load
TMB	Tree Marking Book
UIC	Unit In-charge
UM	Unit Manager
UWIFoRT	Ugyen Wangchuk Institute for Forestry Research and Training
WC	Working Circle
WS	Wildlife Sanctuary
Y/N	Yes or No



Introduction

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1. Introduction

1.1. Background

Bhutan is a small country that has long been a leader in forest and environmental conservation, with 69.7% of its land area under Forest cover. Further, Bhutan's constitutional mandates that Bhutan maintains a minimum of 60 % of the country under forest cover for all times to come, while the National Forest Policy 2011 and the Forest and Nature Conservation Act of Bhutan (FNCA) 2023 necessitates that all State Reserve Forest Land are managed scientifically. Accordingly, Bhutan manages its forests sustainably through four main management regimes such as Protected Area (PA) Networks, Community Forests (CF), Forest Management Units (FMU) and Local Forest Management Areas (LFMA). Each regime operates with distinct goals, plans, and outcomes with a ten-year plan period by adopting all possible sustainability principles tailored to Bhutanese context.

Protected Areas (PAs) aim to balance biodiversity conservation with supporting community livelihoods. Community Forests (CFs) primarily serve local communities by supplying resources like timber, firewood, and non-wood forest products, whereas Forest Management Units (FMUs) focus on sustainable commercial forestry. In contrast, Local Forest Management Areas (LFMAs) address the forest resource needs of communities not covered by other management systems. Similarly, there are different cross-cutting regimes including Plantation, Non-Wood Forest Product (NWFP) etc. The NWFP management and forest plantations shall be part of the main four management regimes; the area-based plan and can be accordingly integrated into the area-based plan. These different area-based plan and cross-cutting regimes are currently managed as per the prescription of the Forest and Nature Conservation Code of Best Management Practices of Bhutan (2021) (hereinafter referred to as the “*Code*”).

The *Code* was developed in 2021 consolidating and updating the different guidelines and prescriptions available for the different regimes and provide a standard prescription and guideline for implementing the different management plans in the field. Accordingly, the management regimes are managed sustainably ensuring that forests are used and conserved in a way that maintains their biodiversity, productivity, and ecological functions. It aims to balance the social, economic, and environmental needs of present and future generations. Sustainable Forest Management (SFM) practices include responsible harvesting, reforestation, and the protection of forest ecosystems. By integrating these practices, SFM supports the livelihoods of local communities, conserves biodiversity, and helps mitigate climate change. Despite having robust SFM plans, forests in Bhutan constantly remain susceptible to human activities, climate change, deforestation, and degradation. These shall be monitored effectively through robust monitoring and evaluation (M&E) plan in place.

Accordingly, the *Code* mandates M&E of the forest management regimes to ensure all the activities are implemented as per the prescription of the management plan and the *Code*. Subsequently, the FNCA 2023 and Forest and Nature Conservation Rules and Regulations of

Bhutan (FNCRR) 2023 stresses on the importance and institutionalization of the M&E of the different management regimes. Therefore, it was felt important to develop a M&E framework to standardize the M&E process highlighting proper linkages between the activities implemented to the long-term objective of the management plan and defining proper roles and responsibilities at different levels. The M&E framework has been developed in line with the *Code* and shall provide guidance into the M& E of the different management regimes and related cross-cutting regimes and would enable forest managers to measure the success of their efforts, determine if objectives are being achieved, continuously recommend improvements, and support informed policy-making.

1.2. What is Monitoring and Evaluation Framework?

The Department of Forests and Park Services (DoFPS) conducts annual monitoring, mid-term and final evaluation of different forest management regimes. However, there is no clarity regarding methodologies, forms, timeframes, roles and responsibilities, indicators, tools, and reporting. Therefore, this M&E framework was developed to provide more clarity to the M&E process and outlines various M&E methodologies tailored to specific Sustainable Forest Management (SFM) plans and provides a step-by-step guide for tracking progress towards targets and outcome indicators. Additionally, it clearly defines the roles and responsibilities of M&E, and establishes data collection, analysis, and reporting procedures. The framework also includes detailed approaches, tools, and forms for M&E of cross-cutting management regimes, such as Non-Wood Forest Products (NWFP) Management Groups and plantation areas.

The objectives of Framework are to guide the conduct of M&E for different management and crosscutting regimes through;

- Clearly defined M&E objectives for each management and crosscutting regimes;
- Clear linkage between activities, input and outcome for each management and crosscutting regimes;
- Standardized M&E methodology inclosing use of tools and techniques ensuring consistent data collection; and
- Clearly defined roles and responsibilities for M&E team.

1.3. Monitoring and Evaluation

Monitoring and evaluation (M&E) are critical components of effective management. Monitoring is an ongoing process that involves collecting and analyzing data to compare actual outcomes with planned results, ensuring that the program is being implemented as intended. Evaluation, on the other hand, is a systematic and objective assessment of all aspects of a program to determine its overall value or significance. Together, M&E provide essential insights that help improve program performance, guide decision-making, and demonstrate accountability to stakeholders.

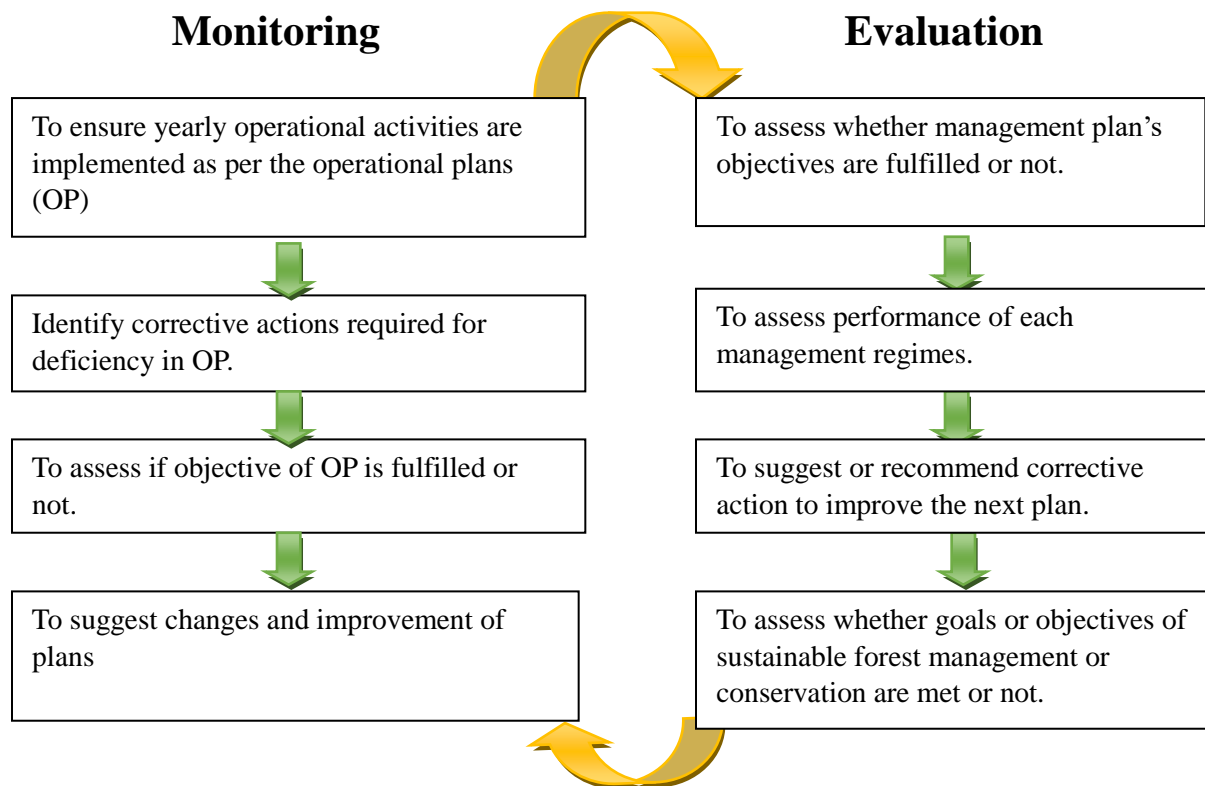


Figure 1.1: Monitoring and Evaluation Process

Monitoring and Evaluation of forest management and crosscutting management regimes involve the systematic assessment. Monitoring focuses on assessing the annual planned activities in the management plan and effectiveness of management practices. Evaluation provides a thorough review of these practices to measure their impact and success. These processes work together to ensure that forest management strategies remain effective, adaptable, and aligned with long-term goals for conservation and sustainability.

1.4. Scope of Monitoring and Evaluation Framework

The M&E framework shall provide guidance for the conduct of M&E in the PA, FMU, LFMA and CF along with the two cross-cutting regimes such as NWFP and plantation areas. The M&E may broadly be categorized into monitoring; self and annual monitoring, mid-term and final evaluation. While detailing and providing guidance on the M&E process, the framework shall also provide information on the different record keeping requirements and forms, directly reproduced from the *Code*. M&E for other activities not included in this framework shall be conducted as per the existing legislation; and the *Code*.

1.5. Roles and Responsibilities

For monitoring or evaluating different sustainable forest management and cross cutting management regimes, the M&E officials, periodicity, forms, responsibility and reporting deadlines are reflected in summary table (Table 1.1).

Table 1.1: M&E Framework Summary Information

Management Regimes	Types	Responsibilities	Period	M&E Forms	Report Submission	Submission Deadline to the Department
1. PA & BC	Annual Monitoring	CFO (preferably from neighboring field office)	11 th to 12 th month of MP	Annual Monitoring Forms	CFO shall submit Annual Monitoring Report to the FMID with a copy to NCD	January
	Mid-term Evaluation	Advisor/ Specialist (Team Leader)	1 st quarter of 6 th year of MP	Evaluation Forms	Team leader shall submit an Evaluation Report to FMID	Within one week after completion of the evaluation
	Final Evaluation	CFO from neighboring field office Representative from NCD and UWIFoRT Representative from LG Lead: FMID	1 st quarter of 10 th year of MP	Evaluation Forms		
2. FMU	Self - monitoring	Lead: Unit In-Charge, Unit Manager Collaborators:	Annual (Continuous)	Physical and Financial Forms (1-3), Code of Forest	Unit In-Charge shall prepare a detail report along with summary	July to June

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Management Regimes	Types	Responsibilities	Period	M&E Forms	Report Submission	Submission Deadline to the Department
		CFO, Regional Manager, NRDCL		Practices Forms (4-8), Biodiversity Forms (9-10), Community Participation Form 11 Physical, Financial and Environmental Monitoring Summary Forms (1-2)	forms and submit to concern CFO.	
	Annual Monitoring	CFO (preferably from neighboring field office)	November to December	FMU Annual monitoring form (1-16) Annual Monitoring Summary form 17	CFO shall submit a detail report to FMID	January
	Mid-term Evaluation	Advisor / Specialist (Team Leader) CFO from neighboring field office Regional Manager from nearby Region,	1 st quarter of 6 th year of MP	FMU Evaluation form (1-25) Evaluation Summary form 26	Team leader shall submit a detail report to FMID	Within one week after completion of the evaluation
	Final Evaluation	NRDCL Representative from FRPMD and UWIFoRT Representative from	1 st quarter of 10 th year of MP	FMU Evaluation form (1-25) Evaluation Summary form 26		

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Management Regimes	Types	Responsibilities	Period	M&E Forms	Report Submission	Submission Deadline to the Department
		LG Lead: FMID				
3. LFMA	Annual Monitoring	CFO	November to December	Annual Monitoring form (Part A - C)	CFO shall submit annual monitoring report to FMID with a copy to FRPMD	January
	Mid-term Evaluation	Lead: FMID	1 st quarter of 6 th year of MP	Mid-term M&E form	M&E official shall submit Mid-term Evaluation report to FMID	Within one week after completion of the evaluation
	Final Evaluation	Lead: FMID Collaborators: Concerned field offices, & FRPMD	1 st quarter of 10 th year of MP	Final M&E form	M&E official shall submit Final Evaluation report to FMID	Within one week after completion of the evaluation
4. CF	Self-Monitoring	Lead: CFMG Collaborators: Forestry officials from the Beat/Range Office	As per the monitoring plan in the management plan	Form 1 - 16	The CFMG shall submit annual self-monitoring and participatory monitoring report along with financial report of its activities to the Beat/Range Office with a copy to the CFO	Within one to two weeks after completion of self-monitoring
	Annual Monitoring	Lead: CFO Collaborators: CFM committee	11 th to 12 th month of management plan period	Annual Monitoring Forms (Part A – Part F)	Concerned CFO shall submit annual monitoring report to FMID	Within one to two weeks after completion of annual monitoring

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Management Regimes	Types	Responsibilities	Period	M&E Forms	Report Submission	Submission Deadline to the Department
	Mid-term Evaluation	Lead: FMID Collaborators: FRPMD, LG (Gup/Tshogpa)	1 st of 6 th year of the management plan period.	Mid-term Evaluation Forms (Sheet 1 – Sheet 11)	The team shall submit Evaluation Report to FMID along with filled M&E forms and score assessment sheet.	Within one to two weeks after completion of the evaluation
	Final Evaluation		1 st quarter of 10 th year of the management plan period.	Final M&E Forms (Sheet 1 – Sheet 11)		
5. Plantation	Annual Monitoring	Lead: CFO	November to February (1 st to 5 th year)	PME 1 - 6	CFO shall submit the report as per the PME 8 (reporting format) to FMID along with PME 1-6	Within one to two weeks after the completion of evaluation
	Mid-term Evaluation	Lead: FMID	November to February (2 nd or 3 rd year)	PME 1 - 5 and PME 7	Monitoring official shall submit PME 8 along with PME 1-5 and PME 7	Within one to two weeks after the completion of evaluation
	Final Evaluation	Lead: FMID	November to February (5 th year)			
	Long-term M&E	The long-term monitoring shall be done following the monitoring guidelines and annual monitoring forms till the plantation is established. The long-term evaluation shall be done following the evaluation guidelines and evaluation forms till the plantation is established				

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Management Regimes	Types	Responsibilities	Period	M&E Forms	Report Submission	Submission Deadline to the Department
6. NWFP-MG¹	Annual Monitoring	Lead: CFO	November to December	Annual Monitoring Forms (1-9)	CFO shall submit a summarized NWFP-MG Monitoring Report to FMID, annexed with Annual Monitoring Forms in excel format	January
	Mid-term Evaluation	Lead: FMID	1 st quarter of 6 th year	Annual Monitoring Summary Sheet & Evaluation Score Sheet	Team shall submit the Evaluation Report to FMID	Within one week after completion of evaluation
	Final Evaluation	Lead: FMID	1 st quarter of 10 th year	Annual Monitoring Summary Sheet & Evaluation Score Sheet	Team shall submit the Evaluation Report to FMID	Within one week after completion of evaluation

¹ The NWFP-MG with management plan period of 5-years the final evaluation shall be conducted in 1st quarter of the 5th year. However, for plans integrated into the area-based management plan, mid-term and final evaluation shall be conducted following the Evaluation Guidelines prescribed here.

1.6. Criteria and Indicators

All activities in the Management Plan are aligned and linked to specific indicators and themes or criteria to assess the impact and effectiveness of the management plan. Some indicators will be measured or monitored annually through self-monitoring and annual monitoring, while indicators that takes longer time to change shall be monitored or evaluated periodically in the form of mid-term and final evaluation of the FMUs. Table 1.2 shows the number of monitoring and evaluation indicator for different management regimes.

Table 1.2: Number of Criteria for Different Management Regimes

Sl. No	Management Regimes	Annual Monitoring	Mid-term and Final Evaluation
1	Protected Area Network	5 Thematic areas and 16 indicators	
2	Forest Management Unit	5 Criteria and 16 indicators	5 Criteria and 33 indicators
3	Community Forest	6 Indicators and 44 activities	6 Indicators and 50 activities
4	Local Forest Management Area	7 Indicators	12 Indicators
5	Plantation	3 Criteria and 20 indicators	5 Criteria and 31 indicators
6	Non-Wood Forest Produce	3 Thematic areas and 45 indicators	

All the indicators used for the annual monitoring are also used in the mid-term and final evaluation while not all indicator of mid-term and final evaluation are used in annual monitoring. In order to facilitate timely, effective and efficient conduct of M&E, a set of form has been developed for record keeping, monitoring and evaluation, which are interdependent and constitute main source of data for verification process. This shall be discussed in detail in the subsequent chapters.

1.7. Assessment of the Monitoring and Evaluation Scores

For all the management regimes, the Monitoring and Evaluation Indicator will be scored based on the achievement against each of them.

1.7.1 Scoring of the Indicator

Each indicator is assigned a maximum score ranging from 2 to 10 and minimum score of 0 depending on the management regimes. The indicators are scored based on the progress of the activities, which are further used to score the criteria and thematic areas. The maximum score for each indicator is described and shall be scored based on achievement and guidance provided for each indicator in the respective chapters.

1.7.2 Performance Assessment and Rating

The performance of the management regimes shall be monitored and/or evaluated and accordingly, the management regimes shall be categorized based on the performance percent estimated as follow:

$$Performance\ percent = \frac{Points\ scored}{Total\ Points} \times 100$$

While there is no standard performance rating of the sustainability of the management regimes, the overall performance of the managed area shall be rated as described in the table below:

Table 1.3: Performance Assessment and Rating

Performance Percentage	Category	Description
90-100%	Totally acceptable	Forest management practices are excellent and significantly exceed sustainability standards.
75-90	Acceptable	Forest management practices meet the basic requirements and standards for sustainability.
60-75	Slightly acceptable	Forest management practices are close to being satisfactory but still have some deficiencies.
45-60	Slightly unacceptable	Forest management practices are somewhat lacking and do not fully meet sustainability standards.
30-45	Unacceptable	Forest management practices are inadequate and fall well below acceptable standards.
<30	Totally unacceptable	Forest management practices are extremely poor and fail to meet basic sustainability criteria.

The monitoring and evaluation team shall accordingly, prescribe interventions and recommendations for improvement of the management plans as per the *Code* and submit the report to FMID, for further synthesis and consolidation of the report.

1.8. Monitoring and Evaluation Framework

The M&E framework has been developed in line with the *Code* and shall provide guidance into the M&E of the different management regimes and related cross-cutting regimes. Accordingly, the M&E Framework consists of 8 chapters which look into different regimes. All regimes have their own methodology of assessment and scoring system which shall be discussed in detail in the following chapters:

- Chapter 1: Introduction
- Chapter 2: Protected Area Network
- Chapter 3: Forest Management Unit
- Chapter 4: Local Forest Management Area
- Chapter 5: Community Forest
- Chapter 6: Plantation

Chapter 7: Non-wood Forest Produce Management & Marketing Group

Chapter 8: Bibliography

The Framework is a comprehensive document compiled and updated upon review of *Code*, FNCA 2023 and FNCRR 2023 and other technical guidelines. It provides clear guidance on the M&E process; what, who, when, how and why. This is a dynamic document and shall be updated with change in legislation and update and/or upgrade in methodology.

An aerial photograph of a valley. The foreground and middle ground are dominated by a patchwork of agricultural fields in various shades of green and brown. A river flows through the lower right portion of the image. The background consists of steep, forested mountains. The text "Protected Area (PA) Network" is overlaid in the center of the image.

Protected Area (PA) Network

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2. Monitoring and Evaluation of Protected Area Network

2.1. Introduction

Protected Areas Network (PAN) in Bhutan are specific geographic regions designated by the Parliament as Protected Areas (PA) and Biological Corridors (BC), and the Royal Botanical Park. National Parks (NP), Wildlife Sanctuaries (WS) and the Strict Nature Reserves (SNR) are collectively referred to as PA. These areas are dedicated to preserving nature, including ecosystem services and socio-cultural values, with a focus on long-term conservation. All PAs requires a 10-year conservation management plan (CMP) to align with national and international biodiversity goals.

Monitoring and evaluation (M&E) assess the quality of PA and BC management, focusing on how well it protects inherent values and achieves its goals. M&E is crucial for evaluating the management effectiveness of PA and BC, ensuring that field offices follow the conservation and management activities outlined in the CMP, as per the technical guidelines prescribed in Volume IV of the Forest and Nature Conservation Code of Best Management Practices of Bhutan (hereinafter referred to as the “Code”).

Annual monitoring reviews the short-term implementation of the management plan, while evaluation examines whether the plan’s overall objectives have been met over its duration. Field offices shall conduct annual monitoring, while the Forest Monitoring and Information Division (FMID) shall coordinate mid-term and final evaluation following the guidelines of the *Code* and this framework.

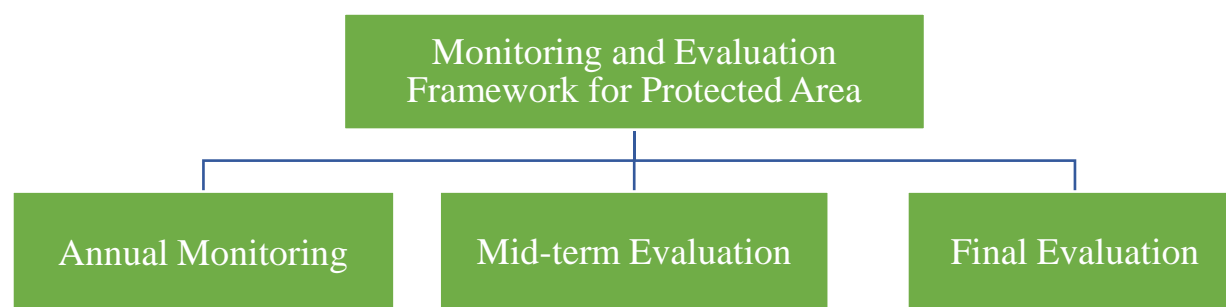


Figure 2.1: Types of Monitoring and Evaluation

2.2. Objectives of Monitoring and Evaluation

Monitoring involves tracking annual planned activities to ensure that expected outcomes, deliverables, and timelines are met, allowing for timely correction of any issues. This process also improves understanding of necessary conservation and management interventions through the data collected.

Evaluation shall be conducted in two phases: mid-term and final, using the monitoring and evaluation framework. A separate assessment shall also be conducted by FMID using the Bhutan Management Effectiveness Tracking Tool Plus (METT+) following prescriptions of the *Code*. However, the current evaluation framework also includes component of the METT+ to have a better insight into the management effectiveness of PAs, establish a baseline for each PA, and identify specific issues that need attention to improve management during the current plan period and inform future management plans.

2.3. Monitoring & Evaluation Team Composition and Schedule

The team composition and the schedule for M&E have been outlined in Table 2.1.

Table 2.1: M & E Team Composition and Schedule

Type	Composition	When?
1. Annual Monitoring	Chief Forestry Officer (CFO) preferably from neighboring PA & Divisional Forest Office (DFO)	11 th to 12 th month of Management Plan (MP)
2. Mid-term Evaluation	<ul style="list-style-type: none"> • Advisor / Specialist (Team Leader) • CFO from neighboring PA & DFO • Representative from Ugyen Wangchuck Institute for Forestry Research and Training (UWIFoRT) • Representative from Nature Conservation Division (NCD) • Representative from Local Government (LG) • FMID (Lead Agency) 	1 st quarter of 6 th year of MP
3. Final Evaluation		1 st quarter of 10 th year of MP

2.4. Thematic Areas and Assessment Parameters

The planned activities in the CMP shall be evaluated based on five thematic areas outlined in Volume IV of the *Code*, which further guide the outputs and activities. These five thematic areas, as shown in Table 2.2, are: Nature conservation, Sustainable resource management, Integrated conservation and development, Forest protection and enforcement, and administration and direction.

Table 2.2: Thematic Areas and Assessment Parameters

Outcome/ Thematic Area	Description	Assessment Area
1.Nature Conservation	These activities and interventions focus on nature and biodiversity conservation, and improving information availability through surveys, research, and Human-Wildlife Conflict (HWC) management. They also include habitat management, watershed and wetland protection, waste management, climate change initiatives, and wildlife rescue and rehabilitation. These efforts aim to improve habitats, conserve wild animals and plants, and enhance knowledge about flora and fauna.	Look for evidence or activities related to conservation interventions, such as surveys, research, Human-Wildlife Conflict (HWC) management, habitat management, watershed and wetland protection, waste management, climate change initiatives, and wildlife rescue and rehabilitation.
2.Sustainable Resources Management	Forest resource management includes all activities aimed at the sustainable management of forest resources within the PA Network. This primarily involves, but is not limited to, the sustainable distribution of rural timber and non-wood forest products to local communities residing within the protected area. The allocation of forest resources is carried out according to the planned Annual Allowable Cut (AAC) as specified in the CMP.	Look for evidence or activities related to management interventions, including Non-wood Forest Produce (NWFP), plantations, Community Forests (CF), and both rural and commercial timber harvesting.
3. Integrated Conservation and Development	This thematic area includes all activities or programs aimed at empowering communities, institutionalizing conservation efforts, enhancing the livelihoods and well-being of local communities within the PAs, and fostering an understanding of	For this outcome, seek evidence or activities related to community and extension interventions, such as livelihood improvement initiatives, ecotourism, Payment for Ecosystem Services (PES), sustainable financing mechanisms, and nature recreation.

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	conservation through education and advocacy.	
4.Forest Protection and Enforcement	This includes all activities aimed at protecting and preserving forests through effective enforcement and managing forest stands by controlling natural and man-made disturbances, such as forest fires, pests, and diseases.	Look for evidence or activities related to protection interventions, such as patrolling, prosecuting forest offenses, forestry clearances, pest and disease surveillance, forest fire management, and forest loss due to clearances.
5.Administration and Direction	In this thematic area, the activities carried out by the PA offices primarily aim to improve service delivery to local communities and other agencies. To efficiently provide services and implement CMP activities, the Park office must enhance the technical capacity of its staff through training, staff deployment, and equipment mobilization as needed. Additionally, Park Offices should plan to develop infrastructure where necessary.	Look for evidence or activities related to management interventions, such as preparing park management plans, work planning, coordination meetings, administrative and accounting tasks, monitoring and evaluation, and data management.

All activities planned in the CMP, along with additional activities from the Conservation Operational Plan (COP) not included in the CMP, shall be assessed based on their progress and achievement against the annual targets. Each activity shall be linked to an output indicator and thematic area as shown in Table 2.3. There is no limit to the number of activities that can be added under an output indicator. However, sub-activities of a main activity under another output indicator within the same or different thematic area shall not be considered as activities under a particular output indicator.

The descriptions of each thematic area or outcome assessment area, along with the relevant output indicators provided in Tables 2.2 and 2.3, are intended to guide the team during the monitoring and evaluation of PA. This shall help the team clearly define assessment areas for effective monitoring and evaluation of the PA.

Table 2.3: Thematic Areas and Output Indicators

Outcome/ Thematic Area	Output Indicator	Description
1. Nature Conservation	Wildlife habitat improved and secured	All activities geared towards improving and securing the habitat of wildlife in the PA to enhance their ability to adapt to changing environments and enhance their persistence.
	Knowledge on faunal diversity enhanced	This indicator shall include all activities aimed towards enhancing the knowledge and diversity of the faunal population in the PA. All such activities shall be grouped under this indicator for the purpose of M&E of the PA.

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		Through a regular assessment, the status of these wild animals within the PAs can be determined and accordingly, the activities crucial for conservation and management of these wild animals are initiated or additional activities are planned and implemented.
	Knowledge on flora diversity enhanced	This indicator shall include the assessment of key floral species, plant related studies and research.
2. Forest Resource Management	Timber resources harvested sustainably	This indicator shall include all the activities which are oriented towards sustainable harvesting of timber resources from the PA. Timber resources are allocated sustainably through prescription of the AAC for timber in the multiple use zone of the PA. In addition, timber resources may also be allocated from other managed areas as per technical prescription of the <i>Code</i> . All the activities from the CMP that fulfills the objective of timber resources harvested sustainably shall be considered under this indicator. Volume of timber removed compared with AAC in the management plan shall be added as mandatory activity under this output indicator.
	NWFP harvesting monitored	Management of NWFP is an important activity for the PA and is an important intervention in all management regimes. Similarly, plans for management of the NWFP shall be prescribed and included in the overall management plan of the PA as per the <i>Code</i> . Subsequently, this indicator shall include all activities relevant to this indicator such as preparation and review of NWFP management plans, NWFP domestications and nursery, NWFP product diversification and marketing. Since a limited number of NWFPs has high commercial value and mostly collected from PA (e.g., <i>Nardostachys sp.</i> , <i>Paris polyphylla</i>), monitoring of commonly collected NWFP should be added as mandatory activity under this output indicator.
3. Integrated Conservation and Development	HWC management enhanced	It includes identifying issues related to the human-wildlife conflict and implementing all the activities to address the HWC issues. HWC reporting and data management shall be added as mandatory activity under this activity.
	Waste management improved	This includes all the activities planned and implemented by PA to address the waste related issues liaising with local communities and other stakeholders.
	Livelihood of PA/BC residents improved	The local communities inside the PAs are supported by PA management with the aim to improve their livelihood through their engagement in nature-based tourism and development of products except those included under other

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		output indicators or thematic areas (e.g., output indicator 2 of thematic area II). It shall include all the activities implemented to promote and enhance the livelihood of local communities.
	Conservation awareness and education strengthened	This shall include all the activities such as educating the local communities on the importance of conserving nature, supporting the conservation programs implemented in PA and community participation in the implementation of CMP.
	Climate change and climate related activities initiated	This indicator shall include all studies and interventions related to climate change mitigation and adaptation planned and /or implemented to reduce the impact and enhance the adaptive capacity of local communities as well as plants/animals.
4. Forest Protection and Enforcement	Protection and Enforcement strengthened	This indicator shall include activities like regular patrolling and anti-poaching patrolling using SMART and other activities geared towards zero poaching.
	Forest fire efficiently managed	Forest fire is one of the main challenges in forest management in Bhutan. All activities contributing to the management and control of the forest fire shall be included under this activity.
	Forest health and Hygiene improved	Forest is subject to a number of threats that cause mortality or delay growth, which is as a result of many biotic and abiotic factors. Activities geared towards managing these disturbances and to ultimately increase the growth and vitality of the forest inside the PA shall be included under this indicator. This may include management of pest and disease, post fire and postharvest management, invasive species and other activities geared toward restoration of degraded forest areas.
5. Administration and Direction	Staff deployment and technical capacity improved	PAs offices need to be staffed as per the organizational Development exercise or subsequent approved staffing pattern of the RCSC to provide the services and implement the activities as per the CMP. In case of shortage of staff in the PA, they should be managed on a need basis in the Range and beat offices for effective service delivery. Furthermore, capacity enhancement should be conducted to equip them with skills and knowledge for carrying out their duties effectively. All the management activities that support the offices to build technical capacity and deployment of staff are included in this output indicator.
	Equipment, mobility and	This includes all the programs that are geared towards developing the infrastructures such as offices, procurement of equipment and mobilizing across the branch offices.

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	infrastructure enhanced	However, sub-activity of main activity under another output indicator under this thematic area or other thematic areas shall not be considered as activity under this output indicator.
	Budget appropriately utilized	The assessment of how judiciously the allocated budget is utilized for implementing the management activities that can achieve the expected impact is included in this output indicator.

Upon completing the M&E, the team shall calculate the total achievement percentage score to assess the PA's performance. The PA shall be classified into six different categories based on this performance. Any necessary corrective actions shall be taken according to the M&E report, as well as the subsequent review report from the Department.

Table 2.4: Performance Assessment Index

Performance Percentage	Category	Description
90-100%	Totally acceptable	Conservation management activities and practices are executed excellently and significantly exceed sustainability standards.
75-90	Acceptable	Conservation management activities and practices meet the basic requirements and standards for sustainability.
60-75	Slightly acceptable	Conservation management activities and practices are close to being satisfactory but still have some deficiencies.
45-60	Slightly unacceptable	Conservation management activities and practices are somewhat lacking and do not fully meet sustainability standards.
30-45	Unacceptable	Conservation management activities and practices are inadequate and fall well below acceptable standards.
<30	Totally unacceptable	Conservation management activities and practices are extremely poor and fail to meet basic sustainability criteria.

2.5. Annual Monitoring

The CFO shall coordinate and conduct monitoring with the team (Table 2.1) as per the annual monitoring form (Annexure 1). The monitoring team shall review the activities of CMP and COP and accordingly, review the baseline, target and deadline for implementation and assess the progress achieved within a year based on available evidence, physical verification and observations. If the targets are not quantified or specified in the CMP and COP, the target shall be assumed as one and achievement shall be based on progress made towards execution and completion of implementation of activity and deadline described in the CMP.

All activities shall be grouped under one of the five thematic areas/outcome and areas of assessment as illustrated in Table 2.2. After aligning the CMP activities under relevant themes, the team shall further categorize these activities to the relevant output indicators as given in the Table 2.3. However, the monitoring team should be mindful that the activities implemented by the

concerned offices may or may not have all the listed output indicators and only those output indicators whichever is relevant to the concerned offices shall be aligned under relevant thematic areas. When monitoring is completed, the team shall determine an average achievement % score of each thematic area and the overall achievement % score is then obtained by averaging the thematic area achievement score in percent. Based on the overall achievement, % score secured by the PA shall determine the performance of the PA and accordingly, recommended interventions shall be adopted. The detailed guideline for filling up the monitoring form are in the subsequent sections.

2.5.1. Annual Monitoring Forms

A) Brief Summary of the Protected Area

Name of Protected Area (PA):		
Plan Period:		
Area of PA:		
Objective of Plan:		
Key Flora Species:		
Key Faunal Species:		
Date of Monitoring:		
Name of Monitoring Official	Designation	Office
Guidance to fill-in Part A of the Annual Monitoring Form		
This section takes into account the brief information of the evaluation team and the PA. Date of monitoring conducted refers to day, month and year in which the M&E is conducted.		

B) Annual Assessment of the Output Indicators for the Protected Area

Thematic Area	Output Indicators	Activities (As Per Management Plan)	Measurement Unit	Lead	Collaborators	Baseline	Target for Plan Period	Achievement %	Data/ Information Source	Reason for Non-Fulfillment of Target	Observation by Monitoring Team	Recommendations
Example: 1. Nature conservation	1. Wildlife habitat improved and secured	1. Create grassland	Areas	PA office			5 hectares	4 ha of waterholes created. Achievement %: $4/5 * 100 = 80\%$				
	2.											
	3.											

Guidance to fill in Part B of the Annual Monitoring Form

Part B has 13 columns, which shall be filled using instruction below:

1. **Output Indicators:** Refer the COP and CMP and include all relevant output indicators in the M&E form prior to actual field visits.
2. **Activities (as per Management Plan):** Refer to the specific actions or tasks marked to be undertaken annually. Each output indicator shall have one or more activities assigned to achieve the output. Planned activities shall be grouped to respective output indicators and the broad thematic area for assigning the scores. Strategic action and program shall be taken into account while assigning the activities to their respective output indicators.
3. **Measurement Unit:** Provides a common unit that allows for consistent measurement and comparison. This can be in number, area, percentage etc., depending on the activity.
4. **Lead and Collaborators:** Identify lead and collaborators for the implementation of the particular activity.
5. **Baseline and Target for Plan Period:** Baseline refers to the initial set of data collected at the beginning of a project, program, or study while the Target for plan period is a specific, measurable objective that an organization or project aims to achieve within a defined timeframe. For example, if the planned activities are habitat management, the existing area under habitat management shall form the baseline, while the aspired area shall be the target. This shall also be available in the CMP or the COP.
6. **Achievement %:** This is the percent of the achievement vis-a-vis the target proposed for the activity. If a particular PA has established grassland in 4 ha out of the total target of 5 ha, then find the percentage achievement by $(4/5) * 100 = 80 \%$
7. **Data/Information Source:** Mention the source of data/information used to assess the implementation status of achievement percent of the activities.
8. **Reason for Non-fulfillment of the Target:** If the target is under achieved or activities are not implemented, assess and note down the reason for the non-achievement of the target.
9. **Observation by the Monitoring Team and Recommendation:** Note down any other observation of the monitoring team on the particular activity and provide any other recommendation for the achievement of the target or any other observation.

C) Performance Assessment and Rating

Thematic Area	Output Indicators	Average Achievement (%)	Total Average Achievement (%)
1. Nature Conservation	Wildlife habitat improved and secured		
	Knowledge on faunal diversity enhanced		
	Knowledge on flora diversity enhanced		
2. Forest Resource Management	Timber resources harvested sustainably		
	NWFP harvesting monitored		
3. Integrated Conservation and Development	HWC management enhanced		
	Waste management improved		
	Livelihood of PA/BC residents improved		
	Conservation awareness and education strengthened		
	Climate change and climate related activities initiated		
4. Forest Protection and Enforcement	Protection and Enforcement strengthened		
	Forest fire efficiently managed		
	Forest health and Hygiene improved		
5. Administration and Direction	Staff deployment and technical capacity improved		
	Equipment, mobility and infrastructure enhanced		
	Budget appropriately utilized		
Total			

Guidance to fill in Part C of the Annual Monitoring Form

The annual monitoring team shall only assess the implementation status of the annual planned activities, as targeted in the CMP and assess the total achievement percent of the PA across all thematic areas. For this:

- The team shall estimate the *average achievement percent* for each output indicator by averaging the weighted achievement percent of all activities falling under the particular indicator (column 9; Achievement Percent under Annual Monitoring Form Part B).

- Then, the **total average achievement** shall be calculated by summing aggregate achievement % for all the output indicators divided by the total indicators. The results shall be multiplied by 100.
- The total aggregate % shall be assessed based on the Table 2.4 for general reflection and overall management of PA.

Upon completing the monitoring of PA activities, the team shall calculate the overall average achievement percentage to evaluate the PA’s performance standards. Based on the Performance Percentage Index (Table 2.4), the PA shall be classified into a specific category, and the relevant PA and Functional Divisions shall implement necessary intervention measures accordingly.

2.5.2. Annual Monitoring Report

The monitoring team shall prepare the annual monitoring report and submit it to the FMID following the specified format. The FMID shall review the report and then forward both individual and consolidated reports to the Department and the relevant field offices, with a copy sent to the NCD for necessary compliance and action.

The report shall be divided into following sections:

A. Introduction: Provide but not limited to a brief background on the Protected Area and the monitoring team.

B. Objective: Shall list the objective of the evaluation.

C. Methodology: Explain in detail the methodology for conducting annual monitoring.

D. Achievement Score: This section shall explain all the activities under the different themes; the update, issues and challenges (if any) and the recommendations/observations by the monitoring team. Explain the activities implemented for the achievement of this output indicator as per the COP. The achievement shall be validated through the data/information provided by the PA and also through field validation. Accordingly, the team shall highlight the: (i) issues; and (ii) recommendation for each output indicator.

Thematic Area	Output Indicators	Average Achievement %	Total Average Achievement %	Activities Implemented	Observation	Issues And Challenges	Recommendation	Responsible Agencies
1. Nature Conservation	Wildlife habitat improved and secured							
	Knowledge on faunal diversity enhanced							
	Knowledge on flora diversity enhanced							
2. Forest Resource Management	Timber resources harvested sustainably							

	NWFP harvesting monitored							
3. Integrated Conservation and Development	HWC management enhanced							
	Waste management improved							
	Livelihood of PA/BC residents improved							
	Conservation awareness and education strengthened							
	Climate change and climate related activities initiated							
4. Forest Protection and Enforcement	Protection and Enforcement strengthened							
	Forest fire efficiently managed							
	Forest health and Hygiene improved							
5. Administration and Direction	Staff deployment and technical capacity improved							
	Equipment, mobility and infrastructure enhanced							
	Budget appropriately utilized							
Total								
E. Other Observations								
The team may list any other observations which are not captured in the report. The observations and recommendations shall help in improving the management of the Protected Area. The team may also provide feedback and observation on the table below.								
Other Observations			Recommendations			Responsible Agency		
F. Annexure								
<ul style="list-style-type: none"> • Minutes of meeting for annual monitoring • Dully filled Annual Monitoring Forms (in excel) 								

2.6. Mid-term and Final Evaluation

Evaluation involves assessing whether conservation management objectives are being met. This process shall occur in two phases: mid-term and final evaluation. The CFO of the respective DFO and Park Office shall notify FMID about the need for these evaluations ahead of time.

The mid-term and final evaluations of the CMP are conducted based on five broad thematic areas outlined in Section 2.4. These thematic areas and output indicators are similar to those used in annual monitoring. However, for the mid-term and final evaluations, weights are assigned to both the thematic areas and output indicators to assess the cumulative progress achieved over a period of 5 years for the mid-term evaluation and 9 years for the final evaluation.

Similar to annual monitoring, all activities in the CMP are categorized into various output indicators and themes. The success of these output indicators shall be evaluated based on the prescriptions or activities outlined in the management plan. Detailed guidelines for completing the form are provided in the following sections.

2.6.1. Evaluation Form

The Evaluation Form (Annexure 2) for the PA is mainly divided into three components: (A) Brief summary of the PA; (B) evaluation of the output indicators for the PA, and (C); summary information on progressive score.

A) Brief Summary of the PA

Name of Protected Area (PA):		
Plan Period:		
Area of PA:		
Objective of Plan:		
Key Flora Species:		
Key Faunal Species:		
Date of Evaluation:		
Name of Evaluation Officer	Designation	Office
Guidance to fill in part A of the Evaluation Form		
This section takes into account the brief information of the PA and the evaluation team. Date of Evaluation conducted refers to day, month and year in which the Evaluation is conducted.		

B) Evaluation of the Output Indicators for the PA														
Output Indicators	Activities	Measurement Unit	Lead	Collaborator	Baseline	Target	Achievement	Achievement Percent	Progress Score	Reason for Non-Fulfillment of Target	Data/Information Source	Reason for Non-Fulfillment of Target	Observation by Evaluation Team	Recommendations
									Progress Score: 0% = 0, 1-25% = 1, 25-50% = 2, 50-75% = 3, 75-100%=4					
Guidance to fill in Part B of the Evaluation Form The evaluation team shall review the CMP, examining the baseline, targets, and deadlines for implementation. They shall assign scores based on available evidence, physical verification, and their observations. If targets are not quantified or specified in the CMP, they shall be assumed as one, and achievements shall be assessed based on progress towards executing and completing the activities and deadlines described in the CMP, using the mid-term and final year M&E Part B. All activities planned in the CMP, as well as additional activities of the COP not included in the CMP, shall be evaluated based on progress and achievement against targets, using a five-point scale (0-4). Each activity shall be linked to an output indicator and thematic area. While there is no limit to the number of activities that can be added under an output indicator, sub-activities of a main activity under another output indicator within the same or different thematic area shall not be considered as activities under this output indicator.														
Descriptions of Terms Reflected in Part B 1. Output Indicators: Refer the COP and CMP and include all relevant output indicators in the M&E form prior to actual field visits 2. Activities (as Per Management Plan): Refer to the specific actions or tasks marked to be undertaken. Each output indicator shall have one or more activities assigned to achieve the output. Planned activities shall be grouped to respective output indicators and the broad thematic area for assigning the scores. Further, activities prescribed for the same strategic action should be included under the different indicators and themes. Strategic action and program shall be taken into account while assigning the activities to their respective output indicators.														

3. **Measurement Unit:** Provide a common unit that allows for consistent measurement and comparison. This can be in number, area, percentage etc., depending on the activity.
4. **Lead and Collaborators:** Identify lead and collaborators for the implementation of the particular activity.
5. **Baseline and Target for Plan Period:** Baseline refers to the initial set of data collected at the beginning of a project, program, or study while the Target for plan period is a specific, measurable objective that an organization or project aims to achieve within a defined timeframe. For example, if the planned activities are habitat management, the existing area under habitat management shall form the baseline, while the aspired area is the target. This shall also be available in the CMP or the COP.
6. **Achievement:** This is the account/details of the activity achieved.
7. **Achievement Percent:** This is the percent of the achievement *vis-a-vis* the target proposed for the activity. If a particular PA has established plantation in 50 ha (achievement) out of the total target of 100 ha (target), then find the percentage achievement by $(50/100) * 100 = 50 \%$.
8. **Progress Score:** Progress score is assigned based on the achievement score index defined in the M&E framework. The progress score for different levels of achievement is as follows: 0% = 0, 1-25% = 1, 25-50% = 2, 50-75% = 3, 75-100%=4. Accordingly, a score of 2 shall be assigned for 50 % achievement while a score of 3 may be assigned for 55 % achievement of the target.
9. **Data/Information source:** Refers to the origin or point from which data is obtained and can include various formats and origins, such as people, documents, organizations and digital platforms. For the purpose of the M&E, the data source /information is defined in the form.
10. **Reason for Non-fulfilment of Target:** Refer to the various factors and circumstances that prevent an organization, project, or individual from achieving the set objectives within the specified timeframe.
11. **Observation by Monitoring Team and Recommendation:** Note down any other observation of the monitoring team on the particular activity and provide any other recommendation for the achievement of the target or otherwise. The team shall provide recommendation for each activity to ensure maximum impact for the implementation of the activity.

C) Summary Information on Progressive Score

Outcome/ Thematic Area	Thematic Area Weight	Thematic Area Score	Output Indicator	Indicator Weight	Output Indicator Score
1. Nature Conservation	30		Wildlife habitat improved and secured	10	
			Knowledge on floral diversity enhanced	10	
			Knowledge on faunal diversity enhanced	10	
2. Forest Resource Management	20		Timber resources harvested sustainably	10	
			NWFP harvesting monitored	10	
3. Integrated Conservation and Development	25		HWC management enhanced	5	
			Waste management improved	5	
			Livelihood of PA/BC residents improved	5	
			Conservation awareness and education strengthened	5	
			Climate change and climate related activities initiated	5	
4. Forest Protection and Enforcement	15		Protection and Enforcement strengthened	5	
			Forest fire efficiently managed	5	
			Forest health and Hygiene improved	5	
5. Administration and Direction	10		Staff deployment and technical capacity improved	3.33	
			Equipment, mobility and infrastructure enhanced	3.33	
			Budget appropriately utilized	3.33	
Thematic Weight Total	100		Indicator Score Total	100	

Guidance for filling up the Part C

It is essential to assign weights to various outcome or thematic areas according to their importance, resources and time required for the related activities, including human and financial resources. The weight for each indicator within an outcome or thematic area is distributed, and overall scores for all themes, outputs, and activities are assigned accordingly. Below is a brief description of the different columns in Part C of the Evaluation Form.

1. **Thematic Area:** Broad programs defined in the Volume IV of the *Code*, to which the activities and the outputs are geared towards. The 5 thematic areas are: Nature conservation; Sustainable resource management; Integrated conservation and development; Forest protection and enforcement; & Administration and direction.
2. **Thematic Area Weight:** Scores assigned to each thematic area against which the score is assigned.
3. **Output Indicator:** Measurable variables that reflect the direct results or outputs of a program, project, or intervention providing quantitative or qualitative information about the products, services, or activities delivered as a result of implementing the program or project. A total of 16 indicators are identified.
4. **Output Indicator Weight:** Each output indicator has been assigned a weight. This is the weighted weight for all the activities assigned under a specific output indicator, against which the achievement scores are assigned.
5. **Scores:** There are three different scores; the progress score, indicator score and thematic area score assigned based on the progress at the time of M&E. Progress score for each activity are assigned as discussed in Part B of the evaluation Form.
 If the output indicator 1 (Wildlife habitat improved and secured) has three activities defined and each of the activity has a progress score 4, 0 and 3 respectively out of a total score of 12 (4+4+4) based on the achievement percent, the total score achieved for this indicator is estimated as follow:
 - Actual progress score achieved = 7 (4+0+3)
 - Total score as per the progress score scale of 4 = 12 (4+4+4); refer scoring scale in Part B
 - Output indicator score = (Actual Progress Score/ total score) * Indicator weight = (7/12) *10 = 5.83; 10 is the total weighted score allocated for this output indicator I.

Similarly, calculate the weighted output indicator scores for output indicators II and III under Nature Conservation. For instance, if the scores for the three output indicators are 5.83, 5, and 7.5 respectively, the thematic area score (18.33) is determined by summing these three scores. This same method is applied to other indicators and thematic areas. The table below illustrates the format for estimating the scores:

Table 2.5: Progress scoring example

Thematic Area	Thematic Area Score	Output Indicator	Output Indicator Score	Activity	Progress score
1.Nature Conservation	=5.83+5+7.5 =18.33	Wildlife habitat improved and secured	$(4+0+3) / (4+4+4)$ $= (7/12) * 10$ $=5.83$	Activity 1	4
				Activity 2	0
				Activity 3	3
		Knowledge on floral diversity enhanced	$= (2/4) * 10$ $=5$	Activity 1	2
		Knowledge on faunal diversity enhanced	$= (3+3) / (4+4)$ $= (6/8) * 10$ $=7.5$	Activity 1	3
				Activity 2	3

On completion of evaluation of PA activities, the Evaluation team shall determine the total achievement % score secured to assess the performance standard of the PA. PA shall fall under either one of the categories based on performance Percentage Index (Table 2.4) and accordingly, necessary intervention measures shall be initiated by the concerned PA and Functional Divisions.

2.6.2. Evaluation Report

The Evaluation team shall prepare the evaluation report and submit to FMID for further submission of a review and consolidated report to the Department including the concern PA office and NCD with observation and recommendation/interventions required as per the evaluation report.

The evaluation report shall be divided into following categories:

A. Introduction: Provide but not limited to a brief background on the Protected Area and the evaluation team.

B. Objective: List the objective of the evaluation

C. Methodology: Explain in detail the methodology

D. Achievement Score: This section shall discuss all the activities under the different themes; the update, issues and challenges (if any) and the recommendations/observations by the Evaluation team.

Explain the activities implemented for the achievement of this output indicator as per the CMP. The achievement shall be validated through the data/information provided by the PA and also through field visits to selected sites. Accordingly, the team shall highlight the (i) issues and (ii) recommendation for each output indicator.

Scoring for Mid-term and Final Evaluation

Outcome/Thematic Area	Thematic Area Weight	Thematic Area Weight Score	Output Indicator	Indicator Weight	Output Indicator Score	Activities Implement	Observation	Issues And Challenges	Recommendation	Responsible Agencies
1. Nature Conservation	30		Wildlife habitat improved and secured	10						
			Knowledge on floral diversity enhanced	10						
			Knowledge on faunal diversity enhanced	10						
2. Forest Resource Management	20		Timber resources harvested sustainably	10						

			NWFP harvesting monitored	10						
3. Integrated Conservation and Development	25		HWC management enhanced	5						
			Waste management improved	5						
			Livelihood of PA/BC residents improved	5						
			Conservation awareness and education strengthened	5						
			Climate change and climate related activities initiated	5						
4. Forest Protection and Enforcement	15		Protection and Enforcement strengthened	5						
			Forest fire efficiently managed	5						
			Forest health and Hygiene improved	5						
5. Administration and Direction	10		Staff deployment and technical capacity improved	3.33						
			Equipment, mobility and infrastructure enhanced	3.33						
			Budget appropriately utilized	3.33						
Thematic Weight Total	100		Indicator Score Total	100.0						

E. Other observation

The team may list any other observations which are not captured in the report above. These observations and recommendations shall help in improving the management of the Protected Area. The team may also provide feedback on the M&E form and comments/suggestions.

Other Observations	Recommendations	Responsible Agency
F. Annexure <ul style="list-style-type: none">• Minutes of meeting for evaluation• Dully filled Evaluation forms		

2.7. Annexures

2.7.1. Annexure 1: Annual Monitoring Form for Protected Area Network

A) Brief Summary of the Protected Area

Name of Protected Area (PA):		
Plan Period:		
Area of PA:		
Objective of PA:		
Key Flora Species:		
Key Faunal Species:		
Date of Monitoring:		
Name of Monitoring Team	Designation	Office

B) Annual Assessment of the Output Indicators for the Protected Area

Output Indicators	Activities (As Per Management Plan) ¹	Measurement Unit	Lead	Collaborators	Baseline	Target for Plan Period	Achievement %	Data/ Information Source	Reason for Non-Fulfillment of Target	Observation by Monitoring Team	Recommendations
Outcome /Thematic Area 1: Nature Conservation											

¹ The activities listed are comprehensive list added from existing CMP and COP. While there is no limit in the number of activities that can be added under this output indicator, all activities not relevant to the particular PA may be deleted.

Output Indicators	Activities (As Per Management Plan) ¹	Measurement Unit	Lead	Collaborators	Baseline	Target for Plan Period	Achievement %	Data/ Information Source	Reason for Non-Fulfillment of Target	Observation by Monitoring Team	Recommendations
Wildlife habitat improved and secured	Create waterholes (target as per plan)	No						1. Annual COP monitoring report 2. Report 3. Field visit			
	Effectively maintain waterholes	No						1. Annual COP 2. Report 3. Field visit			
	Maintain natural saltlicks	No						1. Annual COP monitoring report 2. Report 3. Field visit			
	Create grassland	Area (ha)						1. Annual COP 2. Report 3. Field visit			
	Maintain/restore grassland/ rangeland	Area (ha)						1. Annual COP monitoring report 2. Report 3. Field visit			
	Create habitat enrichment plantation	Area (ha)						1. Annual COP monitoring report 2. Report 3. Field visit			

Output Indicators	Activities (As Per Management Plan) ¹	Measurement Unit	Lead	Collaborators	Baseline	Target for Plan Period	Achievement %	Data/ Information Source	Reason for Non-Fulfillment of Target	Observation by Monitoring Team	Recommendations
	Maintain enrichment plantation	Area (ha)						1. Annual COP 2. Report (activity & monitoring report) 3. Field visit			
Knowledge on faunal diversity enhanced	Carry out survey to determine population status and density of felids	No						1. Annual COP 2. Survey report 3. BMG monitoring report			
	Carry out survey to determine and density of elephant	No						1. Annual COP 2. Survey report 3. BMG monitoring report			
	Carry out survey to determine diversity and distribution of other mammals	No						1. Annual COP 2. Survey report 3. BMG monitoring report			
	Carry out survey to determine diversity and distribution of Avifauna	No						1. Annual COP 2. Survey report 3. BMG monitoring report			
	Carry out survey to determine diversity and distribution of Butterflies	No						1. Annual COP 2. Survey report 3. BMG monitoring report			

Output Indicators	Activities (As Per Management Plan) ¹	Measurement Unit	Lead	Collaborators	Baseline	Target for Plan Period	Achievement %	Data/ Information Source	Reason for Non-Fulfillment of Target	Observation by Monitoring Team	Recommendations
	Carry out survey to determine diversity and distribution of Herpetofauna	No						1. Annual COP 2. Survey report 3. BMG monitoring report			
	Carry out survey to determine diversity and distribution of fishes	No						1. Annual COP 2. Survey report 3. BMG monitoring report			
	Carry out survey to determine diversity and distribution of amphibians	No						1. Annual COP 2. Survey report 3. BMG monitoring report			
	Carry out survey to determine diversity and distribution of micro-invertebrate	No						1. Annual COP 2. Survey report 3. BMG monitoring report			
Knowledge on floral diversity enhanced	Assess key NWFP species	No. of species						1. Annual COP 2. Survey report 3. BMG monitoring report			
	Conduct annual biodiversity monitoring (BMG) for flora	No of grid						1. Annual COP 2. Survey report 3. BMG monitoring report			

Output Indicators	Activities (As Per Management Plan) ¹	Measurement Unit	Lead	Collaborators	Baseline	Target for Plan Period	Achievement %	Data/ Information Source	Reason for Non-Fulfilment of Target	Observation by Monitoring Team	Recommendations
	Assess grassland ecosystem biodiversity	Area (ha)						1. Annual COP 2. Survey report 3. BMG monitoring report			
Outcome /Thematic Area 2: Forest Resource Management											
Timber resources managed sustainably	Harvest timber resources within AAC	m ³						1. FIRMS 2. OFS 3. Field visits			
	Fulfil timber resource needs/demand of the residents (application receipt, approved and rejected)	Demand-supply status (No)						1. FIRMS 2. OFS 3. Field visits			
NWFP harvesting monitored	Harvest key NWFP as per harvesting guidelines	Kg/ bundle/ no/ backload/ piece						1. FIRMS 2. OFS 3. Field visits			
Outcome /Thematic Area 3: Integrated Conservation and Development											
HWC management enhanced	Assess and map HWC hotspots	Timeline						1. Report 2. Annual monitoring report			
	Adopt effective HWC mitigation measures (fencing, QRT.....)	No/ length						1. Report 2. Annual monitoring report			

Output Indicators	Activities (As Per Management Plan) ¹	Measurement Unit	Lead	Collaborators	Baseline	Target for Plan Period	Achievement %	Data/ Information Source	Reason for Non-Fulfilment of Target	Observation by Monitoring Team	Recommendations
	Attend to crop damage, property and livestock depredation (ward-off, assessment)	No of incident attended						1. FIRMS 2. SMART 3. community feedback 3. Media			
	Respond to human casualty	No of incidences attended						1. FIRMS 2. SMART 3. community feedback			
Waste management improved	Quantity of waste in PA	Kg						1. Waste report 2. Annual monitoring report			
	Monitor waste disposal	No						1. Waste report 2. Annual monitoring report			
	Conduct waste management awareness and education program	No						1. Waste report 2. Annual monitoring report			
Livelihood of PA/BC residents improved	Develop ecotourism product	Timeline						1. Report 2. Field visits			
	Visitors/tourist using the ecotourism services	No						1. Visitor's registers 2. Entry fee record 3. Annual monitoring report OFS			

Output Indicators	Activities (As Per Management Plan) ¹	Measurement Unit	Lead	Collaborators	Baseline	Target for Plan Period	Achievement %	Data/ Information Source	Reason for Non-Fulfilment of Target	Observation by Monitoring Team	Recommendations
	Household benefited from conservation related interventions (ecotourism, NWFP, solar lighting, fencing, etc.)	No of household						1. Annual COP monitoring report			
Conservation awareness and education strengthened	Impart conservation awareness and education by gender	Households covered/ Institution						1. Report 2. Annual monitoring report			
Climate change and climate related activities initiated	Assess climate change vulnerability of the PA	Status						1. Annual COP 2. Monitoring report			
	Survival % of plantation (reforestation/afforestation/enrichment)	Survival %						1. Annual monitoring report 2. Field visit			
	Mitigation and adaptation measures (embankment wall,)	Number						1. Annual monitoring report 2. Field visit			
Outcome /Thematic Area 4: Forest Protection and Enforcement											

Output Indicators	Activities (As Per Management Plan) ¹	Measurement Unit	Lead	Collaborators	Baseline	Target for Plan Period	Achievement %	Data/ Information Source	Reason for Non-Fulfilment of Target	Observation by Monitoring Team	Recommendations
Protection and Enforcement strengthened	Conduct strategic/intelligence led SMART patrol	No						1. FIRMS 2. SMART 3. Annual monitoring report			
	Percentage of SMART application adopted by Park Staff	Percentage						1. Annual monitoring report 2. SMART report			
	Percent of offence compounded against nos. of case detected	Percentage						1. FIRMS 2. Annual monitoring report			
	Establish patrol trail	km						1. Annual monitoring report 2. Field visit			
	Maintain patrol trail	km						1. Annual monitoring report 2. Field visit			
	No. of staff trained on investigative and case handling	Number						1. Training report 2. Annual monitoring report			
Forest fire efficiently managed	Construct fire line	Km						1. Annual monitoring report 2. Field visit			
	Response to combat forest fire (mobilization)	Time						1. Annual monitoring report			

Output Indicators	Activities (As Per Management Plan) ¹	Measurement Unit	Lead	Collaborators	Baseline	Target for Plan Period	Achievement %	Data/ Information Source	Reason for Non-Fulfilment of Target	Observation by Monitoring Team	Recommendations
	Post fire management	Action taken									
Forest health and Hygiene improved	Monitor and report pest and disease occurrence	Occurrence						1. Annual monitoring report 2 Field visit			
	Intervention to pest and disease management	Action taken						1. Annual monitoring report 2. Field visit			
	Implement sanitation operation (post-harvest residual removal to reduce fire hazard and spread of infestation)	Area						1. Annual monitoring report 2. Field visit			
Outcome /Thematic Area 5: Administration and Direction											
Staff deployment and technical capacity improved	Deploy existing staff within PA in proportion to OD recommendation	Proportion						1. OD report 2. Physical verification			
	Develop technical capacity of staff (central and in-house)	Percent of staff						1.Training report 2. Annual monitoring report			

Output Indicators	Activities (As Per Management Plan) ¹	Measurement Unit	Lead	Collaborators	Baseline	Target for Plan Period	Achievement %	Data/ Information Source	Reason for Non-Fulfilment of Target	Observation by Monitoring Team	Recommendations
Equipment, mobility and infrastructure enhanced	Provide office equipment and furniture (laptop, survey equipment, dart gun.....) Critical ones for performing duty	Number						1. GIMS, 2. Stock register 3. Requisition form			
	deploy pool vehicles (during fire, surveys, other activities)	Percentage						1.Requisition form			
	Infrastructure (office building, check post,)	Infrastructure						1. GIMS, 2. Stock register, 3. Requisition form			
Budget appropriately utilized	Mobilize and utilize budget appropriately	Percent use						1. E-PEMS report			

C) Performance Assessment and Rating

Thematic Area	Output Indicators	Average Achievement (%)	Total Average Achievement (%)
1.Nature Conservation	Wildlife habitat improved and secured		
	Knowledge on faunal diversity enhanced		
	Knowledge on flora diversity enhanced		
2. Forest Resource Management	Timber resources harvested sustainably		
	NWFP harvesting monitored		

3. Integrated Conservation and Development	HWC management enhanced		
	Waste management improved		
	Livelihood of PA/BC residents improved		
	Conservation awareness and education strengthened		
	Climate change and climate related activities initiated		
4. Forest Protection and Enforcement	Protection and Enforcement strengthened		
	Forest fire efficiently managed		
	Forest health and Hygiene improved		
5. Administration and Direction	Staff deployment and technical capacity improved		
	Equipment, mobility and infrastructure enhanced		
	Budget appropriately utilized		
Total			

2.7.2. Annexure 2: Mid-term and Final Evaluation Form for Protected Area Network

A) Brief Summary of the PA

Name of Protected Area (PA):		
Plan Period:		
Area of PA:		
Objective of PA:		
Key Flora Species:		
Key Faunal Species:		
Date of Evaluation:		
Name of Evaluation Team	Designation	Office

B) Evaluation of the Output Indicators of the Protected Area

Output Indicators	Activities (As Per Management Plan)²	Measurement Unit	Baseline	Target	Achievement	Achievement Score	Progress Score	Data/Information Source	Reason For Non-Fulfillment of	Observation by Evaluation Team	Recommendations
Wildlife habitat improved and secured	Create waterholes (target as per plan)	No				0% = 0		1. Annual COP 2. Report (activity & monitoring report) 3. Field visit			
						1-25% = 1					
						25-50% = 2					
						50-75% = 3					
						75-100% = 4					
	No				0% = 0						

² The activities listed are comprehensive list added from existing CMP. While there is no limit in the number of activities that can be added under this output indicator, all activities not relevant to the particular PA may be deleted.

	Effectively maintain waterholes				1-25% = 1		1. Annual COP 2. Report (activity & monitoring report) 3. Field visit				
					25-50% = 2						
					50-75% = 3						
					75-100% = 4						
	Maintain saltlicks	No				0% = 0		1. Annual COP 2. Report (activity & monitoring report) 3. Field visit			
						1-25% = 1					
						25-50% = 2					
						50-75% = 3					
	Create grassland	Area (ha)				0% = 0		1. Annual COP 2. Report (activity & monitoring report) 3. Field visit			
						1-25% = 1					
						25-50% = 2					
						50-75% = 3					
	Maintain/restore grassland/rangeland (removal of invasive/non-palatable species)	Area (ha)				0% = 0		1. Annual COP 2. Report (activity & monitoring report) 3. Field visit			
						1-25% = 1					
						25-50% = 2					
						50-75% = 3					
	Create habitat enrichment plantation	Area (ha)				0% = 0		1. Annual COP 2. Report (activity & monitoring report) 3. Field visit			
						1-25% = 1					
						25-50% = 2					
						50-75% = 3					
Maintain enrichment plantation	Area (ha)				0% = 0		1. Annual COP 2. Report (activity & monitoring report) 3. Field visit				
					1-25% = 1						
					25-50% = 2						
					50-75% = 3						
					75-100% = 4						

Indicator Score					0					
Knowledge on faunal diversity enhanced	Carry out survey to determine population status and density of felids	Species			0% = 0		1. Annual COP			
					1-25% = 1					
					25-50% = 2					
					50-75% = 3					
					75-100% = 4					
	Carry out survey to determine and density of elephant	No				0% = 0		1. Annual COP		
						1-25% = 1				
						25-50% = 2				
						50-75% = 3				
						75-100% = 4				
	Carry out survey to determine diversity and distribution of other mammals	No				0% = 0		1. Annual COP		
						1-25% = 1				
						25-50% = 2				
						50-75% = 3				
						75-100% = 4				
	Carry out survey to determine diversity and distribution of Avifauna	No				0% = 0		1. Annual COP		
						1-25% = 1				
						25-50% = 2				
						50-75% = 3				
						75-100% = 4				
Carry out survey to determine diversity and distribution of Butterflies updated	No				0% = 0		1. Annual COP			
					1-25% = 1					
					25-50% = 2					
					50-75% = 3					
					75-100% = 4					
	No				0% = 0		1. Annual COP			

	Carry out survey to determine diversity and distribution of Herpetofauna				1-25% = 1		2. Report (Activity & monitoring report) 3. Survey report			
					25-50% = 2					
					50-75% = 3					
					75-100% = 4					
	Carry out survey to determine diversity and distribution of fishes	No			0% = 0		1. Annual COP 2. Report (Activity & monitoring report) 3. Survey report			
					1-25% = 1					
					25-50% = 2					
					50-75% = 3					
	Carry out survey to determine diversity and distribution of amphibians	No			0% = 0		1. Annual COP 2. Report (Activity & monitoring report) 3. Survey report			
					1-25% = 1					
					25-50% = 2					
					50-75% = 3					
	Carry out survey to determine diversity and distribution of micro-invertebrate	No			0% = 0		1. Annual COP 2. Report (Activity & monitoring report) 3. Survey report			
					1-25% = 1					
					25-50% = 2					
					50-75% = 3					
Indicator Score					0					
	Assess key NWFP species	No			0% = 0		1. Annual COP 2. Report (Activity & monitoring)			
					1-25% = 1					
					25-50% = 2					
					50-75% = 3					
				75-100% = 4						

							report) 3. Survey report			
	Conduct annual biodiversity monitoring (BMG)	No. of grid				0% = 0	1. Annual monitoring report (field and NCD) 2. BMG monitoring report			
						1-25% = 1				
						25-50% = 2				
						50-75% = 3				
						75-100% = 4				
	Assess grassland ecosystem biodiversity	Area (ha)				0% = 0	1. Annual COP 2. Report (Activity & monitoring report) 3. Survey report			
						1-25% = 1				
						25-50% = 2				
						50-75% = 3				
						75-100% = 4				
	Conduct monitoring in Annual Biodiversity Monitoring Grid (BMG)	No. of grid				0% = 0	1. Annual COP 2. Report (Activity & monitoring report) 3. Survey report			
						1-25% = 1				
						25-50% = 2				
						50-75% = 3				
						75-100% = 4				
Indicator Score						0				
Theme Total Score						0				
Timber resources harvested sustainably	Harvest timber resources within AAC	m3				0% = 0	1. FIRMS/OFS/G2C 2. Annual report			
						1-25% = 1				
						25-50% = 2				
						50-75% = 3				
						75-100% = 4				
	Fulfil timber resource needs/demand of the local residents	Demand-supply status				0% = 0	1. FIRMS/OFS			
						1-25% = 1				
						25-50% = 2				
						50-75% = 3				

	(application receipt, approved and rejected)					75-100% = 4					
Indicator Score						0					
NWFP harvesting monitored	Harvest key NWFP as per harvesting guidelines	Kg/bundle/nos/ backload/piece				0% = 0		1.NWFP group record 2.FIRMS 3.SMART			
						1-25% = 1					
						25-50% = 2					
						50-75% = 3					
						75-100% = 4					
Indicator Score						0					
Theme Score						0					
HWC management enhanced	Assess and map out HWC hotspots	No				0% = 0		1. FIRMS 2. SMART 3. Report			
						1-25% = 1					
						25-50% = 2					
						50-75% = 3					
						75-100% = 4					
	Adopt effective HWC mitigation measures (fencing, QRT.....)	No/Area					0% = 0		1. FIRMS 2. SMART 3. Report		
							1-25% = 1				
							25-50% = 2				
							50-75% = 3				
							75-100% = 4				
	Attend to crop damage and livestock depredation (ward-off, assessment)	Time taken to respond					0% = 0		1. FIRMS 2. SMART 3. community feedback 3. Media		
							1-25% = 1				
							25-50% = 2				
							50-75% = 3				
							75-100% = 4				
	Respond to human casualty	Time taken to respond					0% = 0		1. FIRMS 2. SMART 3. community feedback		
							1-25% = 1				
							25-50% = 2				
							50-75% = 3				
							75-100% = 4				

Indicator Score					0				
Waste management improved	Quantity of waste in PA	Kg			Decreasing = 2		1. Waste report		
					Constant = 1				
					increasing = - 2				
	Monitor waste disposal	Number			>12 times per year= 3		1. Waste report		
					6-11 times per year= 2				
					<6 time per year= 1				
					Not monitored = 0				
	Conduct waste management awareness and education program	No			0-25 % = 1		1. Waste report		
					25-50 % = 2				
					50-78 % = 3				
					75-100 % = 4				
	Theme Score					0			
Livelihood of PA/BC residents improved	Develop ecotourism product	Development Stage			0% = 0		1. Report (activity & monitoring report)		
					1-25% = 1				
					25-50% = 2				
					50-75% = 3				
					75-100% = 4				
	Operationalize ecotourism product	Development Stage			0% = 0		1. Report (activity & monitoring report)		
					1-25% = 1				
					25-50% = 2				
					50-75% = 3				
					75-100% = 4				
	Visitors/tourist using the ecotourism services	No			0% = 0		1. Visitors' registers		
					1-25% = 1				
					25-50% = 2				

					50-75% = 3		record			
					75-100% = 4		3. Annual monitoring report			
	Household benefited from conservation related interventions (ecotourism, NWFP, solar lighting, fencing, etc..)	No of hh			0% = 0		1. Annual COP monitoring report			
					1-25% = 1					
					25-50% = 2					
					50-75% = 3					
					75-100% = 4					
Theme Score					0					
Conservation awareness and education strengthened	Impart conservation awareness and education	Households covered			0% = 0		1. Annual COP			
					1-25% = 1		2. Report (activity & monitoring report)			
					25-50% = 2					
					50-75% = 3					
					75-100% = 4					
Theme Score					0					
Climate change and climate related activities initiated	Assess climate change vulnerability of the PA resident	Status			0% = 0		1. Annual COP			
					1-25% = 1		2. Report (activity & monitoring report)			
					25-50% = 2					
					50-75% = 3					
					75-100% = 4					
	Survival % of plantation (reforestation/afforestation)	Survival %			Excellent (90%) = 5		1. Annual COP			
					Very Good (76-90%) = 4		2. Report (activity & monitoring report)			
					Good (51-75%) = 3		3. Field visit			
					Satisfactory (26-50%) = 2					

					Poor/failure (<25%) = 1					
	Other Mitigation and adaptation measures (embankment wall,)				0% = 0		1. Annual COP 2. Report (activity & monitoring report) 3. Field visit			
					1-25% = 1					
					25-50% = 2					
					50-75% = 3					
					75-100% = 4					
Indicator Score					0					
Theme Score					0					
Protection and Enforcement strengthened	Conduct strategic/intelligence led SMART patrol	No			0% = 0		1. FIRMS 2. SMART 3. Report			
					1-25% = 1					
					25-50% = 2					
					50-75% = 3					
					75-100% = 4					
	Staff strength in conducting law enforcement/anti-poaching patrol	Percentage				0% = 0		1. OD report 2. Annual monitoring report as per plan target		
						1-25% = 1				
						25-50% = 2				
						50-75% = 3				
						75-100% = 4				
	Percent of offence compounded against nos. of case detected	Percentage				0% = 0		1. FIRMS 2. Annual monitoring report as per plan target		
						1-25% = 1				
						25-50% = 2				
						50-75% = 3				
						75-100% = 4				
	Establish patrol trail	km				0% = 0		1. Annual COP 2. Report (activity & monitoring report) 3. Field visit		
						1-25% = 1				
						25-50% = 2				
						50-75% = 3				
						75-100% = 4				
Maintain patrol trail	km				0% = 0					

					1-25% = 1		1. Annual COP 2. Report (activity & monitoring report) 3. Field visit				
					25-50% = 2						
					50-75% = 3						
					75-100% = 4						
	Develop investigative and case handling capacity of staff	Training				0% = 0		1. Annual COP 2. Training report			
						1-25% = 1					
						25-50% = 2					
						50-75% = 3					
	Availability of adequate patrolling tools/equipment and field gear	Availability				0% = 0		1. Report 2. Annual monitoring report as per plan target			
						1-25% = 1					
						25-50% = 2					
						50-75% = 3					
Indicator Score					0						
Forest fire efficiently managed	Fire line constructed	Km			0% = 0		1. Annual COP 2. Report (activity & monitoring report) 3. Field visit				
					1-25% = 1						
					25-50% = 2						
					50-75% = 3						
	Response to combat forest fire (mobilization)	Time				0% = 0		1. Report 2. Annual monitoring report as per plan target 3. Field visit			
						1-25% = 1					
						25-50% = 2					
						50-75% = 3					
	Post fire management	Action taken				0% = 0					
						1-25% = 1					
						25-50% = 2					
						50-75% = 3					

						75-100% = 4					
Indicator Score						0					
Forest health and Hygiene improved	Monitor and report pest and disease occurrence					0% = 0		1. Report	2. Annual monitoring report as per plan target	3. Field visit	
						1-25% = 1					
						25-50% = 2					
						50-75% = 3					
						75-100% = 4					
	Intervention to pest and disease management	Action taken					0% = 0		1. Report	2. Annual monitoring report as per plan target	3. Field visit
							1-25% = 1				
							25-50% = 2				
							50-75% = 3				
	Implement sanitation operation (post-harvest residual removal to reduce fire hazard and spread of infestation)	Area					0% = 0		1. Report	2. Annual monitoring report as per plan target	3. Field visit
							1-25% = 1				
							25-50% = 2				
						50-75% = 3					
						75-100% = 4					
Indicator Score						0					
Theme Score						0					
Staff deployment and technical capacity improved	Uniformity in staff deployment (as OD recommendation)	Deployment					0% = 0		1. OD report	2. Physical verification	
							1-25% = 1				
							25-50% = 2				
							50-75% = 3				
							75-100% = 4				
	Develop technical capacity of staff (central and in-house)	Percent of staff					0% = 0		1. Training report	2. Annual monitoring report	
							1-25% = 1				
							25-50% = 2				
							50-75% = 3				
						75-100% = 4					
		Distribution				0% = 0		1. GIMS			

Equipment, mobility and infrastructure enhanced	Office equipment and furniture (laptop, survey equipment, dart gun.....) Critical ones for performing duty				1-25% = 1		2. Stock register 3. Requisition form				
					25-50% = 2						
					50-75% = 3						
					75-100% = 4						
	Mobility (pool vehicle and bikes) (deployed during fire, surveys, other activities)	Mobility				0% = 0		1. GIMS 2. Stock register 3. Requisition form			
						1-25% = 1					
						25-50% = 2					
						50-75% = 3					
	Infrastructure (office building, check post,)	Infrastructure				0% = 0		1. GIMS 2. Stock register 3. Requisition form			
						1-25% = 1					
						25-50% = 2					
						50-75% = 3					
Budget appropriately utilized	Utilize budget utilization appropriately	Percent use			0% = 0		1. E-PEMS report				
					1-25% = 1						
					25-50% = 2						
					50-75% = 3						
					75-100% = 4						
Indicator Score					0						
Theme Score					0						

C) Summary Information on Progressive Score

Outcome/Thematic Area	Thematic Area Weight	Thematic Area Weight Score	Output Indicator	Indicator Weight	Output Indicator Score
1. Nature Conservation	30		Wildlife habitat improved and secured	10	
			Knowledge on floral diversity enhanced	10	
			Knowledge on faunal diversity enhanced	10	
2. Forest Resource Management	20		Timber resources harvested sustainably	10	
			NWFP harvesting monitored	10	
3. Integrated Conservation and Development	25		HWC management enhanced	5	
			Waste management improved	5	
			Livelihood of PA/BC residents improved	5	
			Conservation awareness and education strengthened	5	
			Climate change and climate related activities initiated	5	
4. Forest Protection and Enforcement	15		Protection and Enforcement strengthened	5	
			Forest fire efficiently managed	5	
			Forest health and Hygiene improved	5	
5. Administration and Direction	10		Staff deployment and technical capacity improved	3.33	
			Equipment, mobility and infrastructure enhanced	3.33	
			Budget appropriately utilized	3.33	
Total	100		Total	100.0	

Forest Management Unit (FMU)



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3. Monitoring and Evaluation of Forest Management Unit (FMU)

3.1. Introduction

Forest Management Unit (FMU) is one of the oldest planned scientific forest managements in Bhutan for sustained supply of timber resources both in urban and rural areas. It was born out of the need for scientific management of forests due to unregulated extraction of timber in 1950, large scale deforestation and forest degradation. As a result, the first working plan division was established in Samtse during the 1st five-year plan. Subsequently, scientific forest management evolved in Bhutan with the development of working schemes at Manas and Gelephu, enactment of Forest Act of Bhutan (1969), promulgation of National Forest Policy (1974), enactment of Forest and Nature Conservation Act 1995, development of Forest Management Code of Bhutan (2004), National Forest Policy 2011, enactment of Forest and Nature Conservation Act (2023) and Forest and Nature Conservation Rules and Regulations (2000, 2003, 2006, 2017, 2020 and 2023), each of them emphasizing the need for sustainable forest management and to bring all forest under management. Pursuant to the provisions of legislation and policies in place, Forest and Nature Conservation Code of Best Management Practices of Bhutan (2021) (hereinafter referred to as the “Code”) was developed to standardize the forest management planning and implementation process for all forests in Bhutan with varying management objectives.

FMU is managed with a common goal “*to manage the forest on a multiple use, sustained yield basis for the production of timber, fuel wood and other forest products and for watershed, wildlife and environmental protection*” with specific objectives based on the forest condition. FMU plan is a ten-year cycle, and plans prepared by Divisional Forest Office (DFO) in collaboration with Natural Resources Development Corporation Limited (NRDCL) and comprehensive stakeholder consultation including local government and communities in accordance with *Code*. Forest Monitoring and Information Division (FMID) and Forest Resources Planning and Management Division (FRPMD) provide technical support in plan preparation and the plan is endorsed by the Technical Advisory Committee (TAC) of Department and is formally approved by the Minister of the Ministry of Energy and Natural Resources (MoENR).

The approved management plan is implemented by the concerned DFO in collaboration with Natural Resources Development Corporation Limited (NRDCL) with an approved two year rolling Operational Plan (OP). The OP is developed by Unit Offices in consultation with stakeholders including NRDCL, aligning them with the approved Management Plan. The monitoring and evaluation of FMU is a standard practice to ensure that the forest resources are managed sustainably as well as there is no deviation from the plan prescriptions. The Chief Forestry Office (CFO) and Unit In-Charge (UIC) perform annual and self-monitoring on an annual basis to review the progress in each calendar year. Pursuant to the *Code*, management plan is subject to mid-term evaluation and final evaluation.

3.2. Monitoring and Evaluation

Monitoring and evaluation of the FMUs started in 2001 with development of monitoring and evaluation guidelines, which was institutionalized through development of the Forest Management Code of Bhutan (FMCB) 2004. However, there is need for more clarity and strengthening of the M&E programs to achieve the sustainable forest management goals and objectives. Therefore, it is important to understand what constitute monitoring and evaluation in the context of FMU. Monitoring is the examination of whether plan inputs, activities and outputs are successfully implemented according to the planned schedule, while evaluation is the examination of whether plan's objectives are being achieved which requires longer time to provide a realistic assessment of progress in fulfilling objectives. To ensure successful alignment of FMU plans to national policies and goals and implementation of prescriptions in the management plan, a two-stage verification process is recommended. The first stage shall involve monitoring of on-ground activities in the short term by the concerned offices, while the second stage shall involve evaluation the plan prescriptions with long-term objectives by a committee constituted as per the *Code* or any technical guidelines issued by the Department. Further, this Chapter shall discuss the objective of the FMU M&E and detailed explanation of the indicators for common understanding.

3.3. Objectives of Monitoring and Evaluation

The main objective of the M&E is to examine whether the goals/objectives of sustainable forest management are being achieved by making a realistic assessment of progress made in the FMU annually, end of the fifth year and ninth year and provide recommendations wherever necessary and appropriate for better implementation of planned activities in future and prescriptions during plan revision by planners. This shall be done through the following;

1. Verify the annual allowable cut (AAC) harvested and the volume that has reached the depots;
2. Ascertain the percentage of the wastage and removal of non-wood forest products (NWFP);
3. Verify whether the harvested areas are successfully regenerated and find out what actions were taken in an area where the regeneration is very poor or lacking;
4. Evaluate the status or health of regenerating species;
5. Assess the extent of community participation in the forest management and to what extent the community needs are met from the FMU;
6. Assess whether the species composition in any forest type(s) have been reduced or remain the same;
7. Examine whether the net area of the forest available for production is reduced or there is no reduction and assess increase in total net forest area through plantation;
8. Verify whether an area of the forest managed under protection, watershed, landslide and riparian functions has decreased/remained same compared with the available baseline

information (i.e., evaluate the degradation of forest through logging or removal of forest produces);

9. Assess if the list of the forest species, both flora and fauna has decreased or remained constant since the establishment of the FMU; and to
10. Assess the condition of the forest road by examining it in the field and the information in the monitoring forms of the past few years of the FMU.

3.4. Context of Monitoring and Evaluation, Criteria and Indicators

FMU monitoring is an iterative process which involves two types of monitoring and two evaluations. These categories are;

1. **Monitoring;** Self-monitoring and Annual Monitoring
2. **Evaluation;** Mid-term evaluation and Final evaluation

For the purpose of M&E, a set of criteria and indicators has been adopted from the Montreal Process Criteria and Indicator (C&I) for Sustainable Forest Management. There are seven criteria and 54 Indicators of SFM under the Montreal Process C&I (fourth edition, 2015).

1. Criterion 1: Conservation of biological diversity
2. Criterion 2: Maintenance of productive capacity of forest ecosystems
3. Criterion 3: Maintenance of forest ecosystem health and vitality
4. Criterion 4: Conservation and maintenance of soil and water resources
5. Criterion 5: Maintenance of forest contribution to global carbon cycles
6. Criterion 6: Maintenance and enhancement of long-term multiple socio-economic benefits to meet the needs of societies
7. Criterion 7: Legal, institutional and economic framework for forest conservation and sustainable management

Upon review of the C&I, a set of matching indicators has been developed for monitoring and evaluation of FMUs. The M&E for FMU is conducted using six criteria and 33 indicators. Criterion 5 of Montreal Process C&I is not included in FMU M&E, as the estimation of carbon fluxes and pools on an annual basis is not feasible unless new inventory data becomes available. Selected C&I are described in Table 3.1 and indicators shall be assessed annually or periodically based on objectives of M&E.

Table 3.1: Montreal Process Criteria and Indicator (C&I) for Sustainable Forest Management and Indicator for FMU Monitoring and Evaluation

Criteria	Indicator	Monitoring Indicator	Evaluation Indicator
1. Maintenance of productive capacity of forest ecosystems	1.1 Annual harvest of wood products by volume and as a percentage of net growth or sustained yield	1.1 Annual Commercial timber volume removed compared with AAC	1.1 Annual Commercial timber volume removed compared with AAC
		1.2 Annual Rural Timber Volume Removed Compared with AAC	1.2 Annual Rural Timber Volume Removed Compared with AAC
	1.2 Annual harvest of non-wood forest products	1.3 Annual demand and supply of NWFP	1.3 Annual demand and supply of NWFP
	1.3 Area, percent, and growing stock of plantations of native and exotic species	1.4 Percent of clear-cut area regenerated through plantation and survived/established	1.4 Percent of clear-cut area regenerated through plantation and survived/established
	1.4 Area and percent of forest land and net area of forest land available for wood production		
			1.6 Change in forest area inside FMU (Overall Forest Area)
2. Conservation of biological diversity	2.1 Area and percent of forest-by-forest ecosystem type, successional stage, age class, and forest ownership or tenure	2.1 Status of natural regeneration (NR)	2.1 Status of natural regeneration (NR)
	2.2 Number of native forest-associated species		2.2 List of forest dwelling key flora species. Indicators only
			2.3 List of forest dwelling key fauna species. Indicators only
2.3 Fragmentation of forests		2.4 Protection WC connects within FMU and external PA or other forest	
3. Maintenance of forest ecosystem health and vitality	3.1 Area and percent of forests affected by biotic processes and agents (e.g., disease, insects, invasive alien species) beyond reference conditions.	3.1 Forest Pest and disease and management	3.1 Forest Pest and disease and management

	3.2 Area and percent of forest affected by abiotic agents (e.g., fire, storm, land clearance) beyond reference conditions	3.2 Forest fire incident and response/damage assessment	3.2 Forest fire incident and response/damage assessment	
		3.3 Post-fire management	3.3 Post-fire management	
		3.4 Waste management	3.4 Waste management	
4. Conservation and maintenance of soil and water resources	4.1 Area and percent of forest whose designation or land management focus is the protection of soil or water resources		4.1 Change in forest area inside protection working circle	
	4.2 Area and percent of forest land with significant soil degradation	4.1 FMU area with significant soil erosion and threats to stream or spring	4.2 FMU area with significant soil erosion and threats to stream or spring	
5. Maintenance and enhancement of long-term multiple socio-economic benefits	5.1 Area and percent of forests managed primarily to protect the range of cultural, social, and spiritual needs and values	5.1 The forest area managed to protect cultural, social, spiritual values	5.1 The forest area managed to protect cultural, social, spiritual values	
	5.2 Employment in the forest sector	5.2 Extent of community participation in forest management	5.2 Extent of community participation in forest management	
	5.3 Resilience of forest-dependent communities	5.3 Human-wildlife incidents and its interventions in FMU	5.3 Human-wildlife incidents and its interventions in FMU	
	5.4 Value and volume of wood and wood products production, including primary and secondary processing	5.4 Disposal of the timber extracted from FMU	5.4 Disposal of the timber extracted from FMU	
	5.5 Revenue from forest-based ecosystem services		5.5 Revenue generated through sale of forest produce by commercial operation	
	5.6 Value of capital investment and annual expenditure in forest management, wood and non-wood forest product industries, forest-based environmental services, recreation, and tourism	5.5 FMU Sign and Signages		5.6 Forest Road Constructed as per forest management plan
				5.7 Forest Road maintained as per plan
5.6 Achievement on OP Target			5.8 FMU Sign and Signages	

6. Legal, institutional, and economic framework for forest conservation and sustainable management	6.1 Legislation and policies supporting the sustainable management of forests		6.1 Legislation and policies supporting the sustainable management of forests
	6.2 Cross sectoral policy and programmed coordination		6.2 Cross sectoral policy and programmed coordination
	6.3 Clarity and security of land and resource tenure and property rights		6.3 Clarity and security of land and resource tenure and property rights
	6.4 Enforcement of laws related to forests		6.4 Enforcement of laws related to forests
	6.5 Programs, services and other resources supporting the sustainable management of forests		6.5 Programs, services and other resources supporting the sustainable management of forests
	6.6 Development and application of research and technologies for the sustainable management of forests		6.6 Development and application of research and technologies for the sustainable management of forests
	6.7 Partnerships to promote the sustainable management of forests		6.7 Partnerships to promote the sustainable management of forests
	6.8 Public participation and conflict resolution in forest-related decision making		6.8 Public participation and conflict resolution in forest-related decision making
	6.9 Monitoring, assessment, and reporting on progress towards sustainable management of forests		6.9 Monitoring, assessment, and reporting on progress towards sustainable management of forests

While the criterion 5: ‘*Maintenance of forest contribution to global carbon cycles*’ of Montreal Process shall not be monitored and/or evaluated, Criterion 7 shall be evaluated but shall not be scored in the final assessment of performance as all FMUs are managed within same legal, institutional, and economic framework.

Based on the nature of C&I, some indicators shall be measured or monitored annually through self-monitoring and annual monitoring, while indicators that takes longer time to change shall be monitored or evaluated periodically in the form of mid-term and final evaluation of the FMUs. All the indicators used for the annual monitoring are also used in the mid-term and final evaluation while not all indicators of mid-term and final evaluation are used in annual

monitoring. In order to facilitate timely, effective and efficient conduct of M&E, a set of form has been developed for record keeping, monitoring and evaluation, which are interdependent and constitute main source of data for verification process. These forms are:

1. Record Keeping Form
2. Self-monitoring Form
3. Annual Monitoring Form
4. Mid-term Evaluation Form
5. Final Evaluation Form

3.5. Types of Monitoring and Evaluation

As described earlier, FMU M&E is divided into four categories as described based on the nature, objective and frequency which is explained briefly in Table 3.2.

Table 3.2: M & E Summary Information

Particular	Self-monitoring	Annual Monitoring	Mid-term Evaluation	Final Evaluation
1.Objectives	a. Verify implementation of planned activities in OP b. Collection of physical, financial and environmental information	a. Review implementation and achievement as per OP b. Review of new activities and new OP	a. Review achievement of objectives of plans b. Review implementation of annual monitoring report c. Recommend mitigation measures for second half of the management plan	a. Review achievement of objectives of plans b. Review implementation of mid-term evaluation report c. Recommend mitigation measures in final plan period and improvement in subsequent plan
2.Lead role	Unit In-Charge, Unit Manager (UM)	CFO	FMID	FMID
3.Collaborator	a. Concern CFO, b. Regional Manager, NRDCL	a. Unit In-Charge b. FMID c. NRDCL	a. Concern CFO b. Concern Regional Manager (RM), NRDCL. c. NRDCL HQ, FRPMD	a. Concern CFO b. Concern Regional Manager, NRDCL. c. NRDCL HQ, FRPMD
4.Timing	Annually (July to June)	Annually (November-December)	1 st quarter of 6 th year of plan period	1 st quarter of 10 th year of plan period
5.Forms	Self- monitoring Form 1-9	Monitoring Form	Evaluation Form	Evaluation Form
6.Data sources	Management Plan (MP), OP, monthly and annual record keeping forms, field visit and measurement,	MP, OP, monthly and annual recording keeping forms, self-monitoring report/forms and field verification	MP, OP, monthly and annual recording keeping forms, self-monitoring report/forms, annual monitoring report, and field verification	MP, OP, monthly and annual recording keeping forms, self-monitoring report/forms and field verification

3.6. Process of Monitoring and Evaluation

Effective M&E involves different steps from planning, data collection, data analysis, identification of issues and challenges, reporting, information archiving, and implementation of recommendations. These steps are briefly described in Table 3.3.

Table 3.3: Process of M & E

Steps	Self-monitoring	Annual Monitoring	Mid-term Evaluation	Final Evaluation
1.Planning	Plan in advance as far as possible as some monitoring activities can be integrated with other field FMU activities	Plan as soon as self-monitoring report/forms are received and immediately before approval of OP.	Plan at end of last quarter of 5 th year of MP and constitute evaluation team as per <i>Code</i> /this framework.	Plan at the end of 3 rd quarter of 9 ^h year of MP and constitute evaluation team as per <i>Code</i> /this framework
2.Data collection: Information gathering	Review the data collection forms and collect the data using the collection form Physical and Financial Forms 1-3, Environmental Forms 4-11.	Review Physical, Financial and Environmental forms 1-11 and summary form 1-8 submitted by Unit In-Charge.	Review the MP, 5 years OP, Self-monitoring reports, annual monitoring reports, FMU records, plantation monitoring and evaluation reports, plantation journals, etc.	Review the MP, 9 years OP, Self-monitoring reports, annual monitoring reports, FMU records, plantation monitoring and evaluation reports, plantation journals, etc.
3.Data collection: Verification & validation	Review duly filled Physical Financial and environment forms 1-11. Correct errors and recollect any missing information.	Seek any additional clarification and conduct field verification.		
4.Data Analysis: Summarize information	Summarize the information gathered and verified above in Summary Physical and Financial form 1-3 and Code of Best Practices/Environment form 4-8.	Compile the summary information in the annual monitoring form.	Compile the summary information in the evaluation form.	Compile the summary information in the evaluation form.
5.Data analysis: Assessment/	Based on the description in the form.	Based on the instruction	Based on the instruction	Based on the instruction

Scoring		provided in the annual monitoring form, objectively score the monitoring indicators.	provided in the evaluation form, objectively score the monitoring indicators.	provided in the evaluation form, objectively score the monitoring indicators.
6. Identify issues and challenges	Identify any existing and potential issues, where necessary seek technical assistance of the CFO	Review implementation of the recommendation of past annual monitoring reports	Review the implementation of annual monitoring reports	Review the implementation of annual monitoring reports and mid-term evaluation report
7. Report preparation and submission	Prepare detail report along with summary forms and submit to concern CFO	Prepare a detailed report and submit to FMID	Prepare a detailed report and submit to FMID	Prepare a detailed report and submit to FMID
8. Information archiving	Back up a copy of report submitted along with all forms Submit a copy of report and form to FMID	Maintain a back-up copy with Unit Office, DFO Office and submit copy to FMID	Maintain a back-up copy with Unit Office, DFO Office and submit copy to FMID	Maintain a back-up copy with Unit Office, DFO Office and submit copy to FMID
9. Responsibility	Unit-Charge	Concern CFO	Team leader, Evaluation team /FMID for data archiving	Team leader, Evaluation team /FMID for data archiving

3.7. Assessment Score of Monitoring and Evaluation

As described in section 3.4 of this Chapter, the Monitoring and Evaluation Indicator shall be scored based on the achievement against each of them. Accordingly, the performance of the FMU is categorized into one of the 6 categories defined in Table 3.4 and intervention recommended or prescribed to improve the performance of the FMU if it is not satisfactory.

Table 3.4: Performance Assessment and Rating

Performance Percentage	Category	Description
90-100%	Totally acceptable	Forest management practices are excellent and significantly exceed sustainability standards.
75-90	Acceptable	Forest management practices meet the basic requirements and standards for sustainability.
60-75	Slightly acceptable	Forest management practices are close to being satisfactory but still have some

		deficiencies.
45-60	Slightly unacceptable	Forest management practices are somewhat lacking and do not fully meet sustainability standards.
30-45	Unacceptable	Forest management practices are inadequate and fall well below acceptable standards.
<30	Totally unacceptable	Forest management practices are extremely poor and fail to meet basic sustainability criteria.

3.8. Monitoring and Evaluation Forms

Based on types of M&E, a different set of forms has been developed and it shall be mandatory to use all of the forms. The forms are grouped into five categories as described earlier. The following section provides description of forms and instruction/guidelines to complete each of these forms.

3.9. Record Keeping Forms

The main objective of the recording keeping forms is to produce accurate records for improving management and M&E within the FMUs. These forms are divided into monthly and annual record-keeping forms and are reproduced from the *Code*.

3.9.1. Monthly Record Keeping Form (MRK Form)

There are five MRK forms for monthly record keeping in the FMUs. These forms are:

- MRK Form 1: Monthly Commercial Timber supplied (Cable line)
- MRK Form 2: Monthly Commercial Timber supplied (adhoc)
- MRK Form 3: Monthly Rural Timber supplied (New Construction, Renovation, Extension)
- MRK Form 4: Monthly Rural Timber Supplied (Firewood, Fencing Poles, Flag poles, others)
- MRK Form 5: Monthly Commercial and Rural NWFP Supplied

3.9.1.1. MRK Form 1: Monthly Commercial Timber Supplied (Cable Line)

This form is used for keeping the records of the commercial timber supplied/extracted from each cable line, planned road, sanitation operation, etc., included in Operation Plan (OP) in the form of logs, poles, firewood and woodchips on a monthly basis. This is the production volume in logs, poles, firewood and woodchips extracted from individual cable lines and **NOT** standing volume.

Table 3.5: MRK Form 1 (Monthly Commercial Timber Supplied (Cable Line))

Monthly Commercial Timber Production Details from Cable Lines										
Name of the FMU:										
Month/ Year:										
Date	CO No.	Block/ Compartment	Cable line No.	Log (A)		Poles (B)		Firewood (C)	Woodchips (D)	Total (A+B+C+D)
				Volume (m3)	Species	Volume (m3)	Species	Volume (m3)	Volume (m3)	

3.9.1.2. MRK Form 2: Monthly Commercial Timber Supplied (Adhoc)

This form is used for keeping the records of the commercial timber supplied/ extracted from each adhoc areas in the form of Logs, Poles, Firewood and woodchips. The adhoc areas shall include extraction of timber from areas not planned as per the approved Management and Operational Plans. Some examples are timber extraction from transmission lines, farm roads, land lease etc., if not already included in annual OP.

Table 3.6: MRK Form 2 (Monthly Commercial Timber Supplied (Adhoc))

Monthly Commercial Timber Production Details from Ad-hoc Areas										
Name of the FMU:										
Month/ Year:										
Date	CO No.	Block/ Compartment	Adhoc Type (eg., Transmisison line)	Log (A)		Poles (B)		Firewood (C)	Woodchips (D)	Total (A+B+C+D)
				Volume (m ³)	Species	Volume (m ³)	Species	Volume (m ³)	Volume (m ³)	

3.9.1.3. MRK Form 3: Monthly Rural Timber Supplied (New Construction, Renovation, Extension)

This form is used for keeping the records of the rural timber supplied from the FMUs for new construction/ renovation and extension purposes. Note that both the standing volume as well as the corresponding log volumes need to be recorded

Table 3.7: MRK Form 3 (Monthly Rural Timber Supplied (New Construction, Renovation, Extension))

Monthly Rural Timber Allotment Details (New Construction/ Renovation/ Extension)													
Name of the FMU:													
Month/Year:													
Sl. No.	Block/ Compartment	Name of the Applicant	CID No.	Address	Thram No.	House No.	Permit No.	Date of Issue	Purpose (New Construction/ Renovation)	Sanction Letter No. and Date	Volume Marked		Volume extracted
											No of trees marked	Standing Volume (m3)	Log Volume (m3)

3.9.1.4. MRK Form 4: Monthly Rural Timber Supplied (Firewood, Fencing Poles, Flag Poles, Others)

This form is used for keeping the records of the rural timber supplied from FMUs for firewood, flag poles and others. Both the standing volume as actual production volume needs to be reflected here.

Table 3.8: MRK Form 4: Monthly Rural Timber Supplied (Firewood, Fencing Poles, Flag poles, others)

Monthly Rural Timber Allotment Details (Firewood, Flag Poles, Fencing Poles, Others)																			
Name of the FMU:																			
Month/Year:																			
Sl. No.	Block/Compartment no	Name of the Applicant	CID No.	Address	Thram No.	House No.	Date of Issue	Permit No.	Purpose	Sanction No. and Date	Type and Quantity of Forest Produce Supplied						Total Qty (m3)		
											Firewood (m3)		Fencing Post		Flag Poles			Others	
											Standing Vol. (m3)	Actual Prod.	Standing Vol. (m3)	Nos.	Standing Vol. (m3)	Nos.		Standing Vol. (m3)	Nos.
											A	B	C	D	A+B+C+D				

3.9.1.5. MRK Form 5: Monthly Commercial and Rural NWFP Supplied

This form is used for keeping the records of the supply of NWFPs from the FMU

Table 3.9: MRK Form 5: Monthly Commercial and Rural NWFP Supplied

FORM V: Monthly Commercial and Rural NWFP supplied

Monthly NWFP Supply Record															
Name of the FMU:											Gidakom				
Month/Year:											July (2020)				
Sl. No.	Block/Compartment no	Name of the Applicant	CID No.	Thram No.	House No.	Address	Permit No.	Date of Issue	Purpose	Sanction No. and Date	Description and Quantity of NWFP Supplied				
											Stone (m3)	Sand (m3)	Soil (m3)	Bamboo (nos.)	Gravel (m3)	Others
1	Jedekha / I	Sangay	10308001870	43	19	Khachadrupchu	78	01.07.2020	sale	786	1000				

3.9.1.6. MRK Form 6: Royalty Statement

This form is used for keeping the records of the royalty which the authorized agency is payable every month for timber extraction from FMUs. The royalty statement must be prepared every month and submitted to an authorized agency for payment. The information for this form can be derived from MRK Form 1 and 2.

Table 3.10: MRK Form 6: Royalty Statement

Royalty Statement													
Name of the FMU:													
Year	Month	Cable Line No./ Name of Ad-hoc Area	Type of Forest Produce Extracted							Total Amount (Nu.)	Dispatch No. and Date	Remarks	
			Logs		Firewood/ Lops & Tops		Poles		Sawn Timber				
			Volume (cft)	Amount (Nu.)	Volume (m3)	Amount (Nu.)	No./ Volume (cft)	Amount (Nu.)	Volume (cft)				Amount (Nu.)

3.9.2. Annual Record Keeping Form (ARK Form)

3.9.2.1. ARK Form 1: Annual Commercial Timber Supplied (Cable Line)

This form is used for keeping the record of the commercial timber supplied from the cable lines for an entire year. The information for Volume Extracted can be transferred from MRK Form 1. However, information on Cable Line (length of cable line, GPS-Coordinates, No. of groups/area(ha), and corridor area (ha)) needs to be derived from the approved annual Operational Plan of the FMU. The information for Standing Volume marked can be obtained from the tree marking book (TMB) maintained by the unit In-charge / site In-charge

Table 3.11: ARK Form 1: Annual Commercial Timber Supplied (Cable Line)

Annual Cable Line Operation Data												
Name of the FMU:												
Reporting Year:												
Block/ Compartment No.	Cable Line					Total clear felled area (ha)	Standing volume marked and felled (m3)	Volume Extracted (m3)				Total Extracted volume (m3)
	Year/No	Length (m)	GPS Coordinate (Top and Bottom Endmass)	No of Groups/ Area (ha)	Corridor Area (ha)			Log Volume (m3)	Poles(m3)	Firewood (m3)	Woodchips (m3)	
	A	B	C	D	A+B+C+D							
North I	eg. 2020/1	1000m	...N....E	62.5	0.4	6.5	1000	600	200	100	80	980

3.9.2.2. ARK Form 2: Annual Commercial Timber Supplied (Adhoc)

This form is used for keeping the record of the commercial timber supplied from adhoc areas for an entire year. The information for volume extracted can be transferred from MRK Form 2. The information for Standing Volume marked and felled can be obtained from the tree marking book (TMB) maintained by the unit In-charge/ site In-charge.

Table 3.12: ARK Form 2: Annual Commercial Timber Supplied (Adhoc)

Annual Commercial Timber Supply from adhoc								
Name of the FMU:								
Reporting Year:								
Block/ Compartment No.	Adhoc area		Standing volume marked and felled (m3)	Volume Extracted (m3)				Total volume extracted (m3)
	Type (eg.Land lease)	Clearfelled area (ha)		Log Volume (m3)	Poles(m3)	Firewood (m3)	Woodchips (m3)	
	A	B		C	D	A+B+C+D		

3.9.2.3. ARK Form 3: Annual Rural Timber Supplied

This form is used for keeping the record of the rural timber supplied from the FMU for an entire year. The information in this form can be transferred from MRK Form 3 and 4.

Table 3.13: ARK Form 3: Annual Rural Timber Supplied

Annual Rural Timber Supply											
Name of the FMU:											
Reporting Year:											
Rural House Building Timber		Poles		Fencing Post		Firewood		Others		Total Standing Volume Supplied (m ³)	Remarks
		No.	Standing Vol. (m3)	No.	Standing Vol. (m3)	No.	Standing Vol. (m3)	No.	Standing Vol. (m3)		
No.	Standing Vol. (m3)	Log Vol. (m3)	No.	Standing Vol. (m3)	No.	Standing Vol. (m3)	No.	Standing Vol. (m3)	No.	Standing Vol. (m3)	A+B+C+D+E
A		B		C		D		E			

3.9.2.4. ARK Form 4: Annual Commercial and Rural NWFP Supplied

This form is used for keeping the record of the NWFP supplied from the FMU for an entire year. The information in this form can be transferred from MRK Form 5.

Table 3.14: ARK Form 4: Annual Commercial and Rural NWFP Supplied

Annual NWFP Supply								
Name of the FMU:								
Reporting Year:								
Block/ Compartment no	Product Types							
	Bamboo (Nos.)	Sand (m3)	Top Soil (Tm3)	Stone/ Boulders (m3)	Gravel (m3)	Leaf Mould/ Litters (m3)	Mushroom (Kgs.)	Others (Unit)

3.10. Self-monitoring Forms

Self-monitoring shall be implemented by the Unit In-Charge and mainly involves data collection for verifying the physical, financial and environmental progress. There are 11 data collection and monitoring forms and three summary forms, which shall be completed once every year except for rapid rural appraisal which is conducted once every 4 to 5 years. The forms are adopted from the *Code* without any change.

1. Physical & Financial Forms

- Form 1: Commercial activities
- Form 2: Coupe harvested
- Form 3: Divisional activities

2. Code of Forest Practices

- Form 4: Road Drainage by Culverts
- Form 5: Road Drainage by Side Drains, Batter & Fill Slopes
- Form 6: Stream Crossing
- Form 7: Cable Lines
- Form 8: Interlines

3. Biodiversity

- Form 9: Monitoring of Animal Indicator Species

- Form 10: Monitoring of Plant Indicator Species and Regeneration
4. **Community Participation**
 - Form 11: Community Participation RRA Checklist
 5. **Physical, Financial and Environmental Monitoring Summary Forms**
 6. **Summary Form 1: Commercial Activities**
 7. **Summary Form 2: Divisional Activities**

The following section provide the forms and instruction to fill the forms:

3.10.1. Physical & Financial Form for Self-monitoring

3.10.1.1. Form 1: Commercial Activities

FMU Name:	Report Period:		Filled in by (Name, designation)	
	Planned	Implemented	Actual Cost	Remarks
1. ANNUAL ALLOWABLE CUT (AAC)				
1.1 Total standing volume harvested	m ³	m ³		
1.2 Area harvested	ha	ha		
2. PRODUCTION BY SILVICULTURAL SYSTEM				
A. Thinning				
2.1 Standing volume from marking list	m ³	m ³	Nu	
2.2 Total working area	ha	ha		
2.3 Method of thinning				
B. Single Tree Selection				
2.4 Standing volume from marking list	m ³	m ³	Nu	
2.5 Total working area	ha	ha		
C. Group Selection				
2.6 Standing volume from marking list	m ³	m ³	Nu	For Salvage operation, mention the Block and compartment in which the operation was carried out.
2.7 Total area harvested	ha	ha		
2.8 Total corridor area	ha	ha		
D. Seed Tree				
2.9 Standing volume from marking list	m ³	m ³	Nu	
2.10 Total area harvested	ha	ha		

2.11 Number of trees retained per ha	No	No		
E. Clear-cut				
2.12 Total area harvested	ha	ha		
2.13 Standing volume from marking list	m³	m³	Nu	

Form 1: Filling Instructions (COMMERCIAL ACTIVITIES)

1. **AAC.** The ‘Planned’ values are obtained from the current OP. If total volume and area AACs are given in the plan, fill in both boxes. Otherwise, only provide what is given in the Operational Plan. ‘Implemented’ comes from Form 2.
2. **Production by Silvicultural System.**
 - Five silvicultural treatments are listed. Only the treatments being applied for the current year in the FMU need to be filled in based on the OP. If there are more than one treatment, the Planned volume shall be the AAC determined for the different silvicultural treatments. If the same silvicultural treatment is applied in different working circles, the activities can be kept separate by adding an extra copy of Form 1.
 - **Total working area** (items 2.2, 2.5, 2.8), for silvicultural treatments with partial removal (thinning, single tree selection, group selection) means the area over which the operation is being carried out. Coupes are to be located and their dimensions measured by concerned FMU or DFO in association with NRDCL. All areas, in all the forms, must be corrected for slope and mapped using GIS or other applications.
 - **For thinning**, ‘method of thinning’ (item 2.3) requires a description of which trees are being taken and what proportion of removal. For example, ‘from below, 30% of basal area’, ‘from above, 50cm diameter limit’, ‘for flag poles, not larger than 15cm dbh’. If percentage removal is given, it is necessary to say whether it refers to number of trees or basal area.
 - **For group selection**, the individual groups must be measured to estimate their area and shall be mapped. The dimensions need to be measured with a tape, using slope correction. Measure diameter if the group is roughly circular, measure length ‘x’, width ‘y’ if it is rectangular. The best time to do this is when the trees are being marked.
 - **For seed tree**, number of trees retained per hectare means seed trees retained.
 - **‘Implemented’ volumes** (items 2.1, 2.4, 2.7, 2.11, 2.15) are to be calculated from the marking list, using the appropriate volume table or equations (see Form 2). All the marked trees are those to be harvested and checks are necessary to ensure that all the marked trees are actually harvested.

- **In the ‘Actual cost’ column**, only one box for each silvicultural treatment has to be filled, for each of the ‘Implemented’ volumes. The cost of producing the total volume should be entered (marking, felling and extraction). This should be obtained from the Unit Manager, NRDCL. If the cost is available as Nu/m³, multiply this cost by the ‘Implemented’ column and put this in the box. **Salvage Production.** Enter information about salvage production under the silvicultural system used to carry it out and put ‘Salvage operation’ in the Remarks column. If the same silvicultural system is used for normal operations, then add an extra Form 1 for the salvage production. **Note that if salvage operations are necessary, other operations should be postponed to ensure that the harvestings are within the AAC, if possible.**

3. Natural Regeneration (Stocking Assessment on Form 2)

Activities	Planned	Implemented	Actual Cost	Remarks
3.1 Site preparation	ha	ha		Cable line no: Year/no. Cable line no: Year/no. Cable line no: Year/no. Cable line no: Year/no.
3.2 Fencing	ha	ha		
3.3 Total regeneration cost			Nu	
3.4 Weeding	ha	ha	Nu	
3.5 Enrichment planting	No	No	Nu	

4. Plantation (Stocking Assessment on Form 2)

Activities	Planned	Implemented	Actual Cost	Remarks
4.1 Site preparation	ha	ha		Cable line no: Year/no.
4.2 Area planted	ha	ha		Cable line no: Year/no.
4.3 Fencing	ha	ha		Cable line no: Year/no.
4.4 Total Cost			Nu	

5. Roads

Activities	Planned	Implemented	Actual Cost	Remarks
5.1 Planning and survey	km	km		
5.2 Formation cutting	km	km		
5.3 Soling	km	km		
5.4 Stabilizing walls	No	No		
5.5 Drainage installed	km	km		
5.6 Bioengineering	m	m		
5.7 Road completed	km	km		
5.8 Total construction cost			Nu	
5.9 Bridges constructed	No	No	Nu	
5.10 Maintenance	km	km	Nu	

6. Recurrent Costs (FMU only)

Activities	Planned	Implemented	Actual Cost	Remarks
6.1 NRDCL staff salaries	Nu		Nu	Specify the number of staffs
6.2 NRDCL staff allowances	Nu		Nu	
7. TOTAL OPERATING COST		Nu		

Form 1: Filling Instructions (COMMERCIAL ACTIVITIES)

3. Natural and 4. Artificial Regeneration. When the report is filled in for the year of harvesting, only site preparation, fencing and the area treated shall be available (obtain from NRDCL).

- **Subsequent success or failure of the regeneration is part of the Environmental Monitoring process (Form 10).** Assessments of stocking must be **made three years** after harvesting of the stand and re-assess annually thereafter. The assessment results should be entered in Form 2 for the cable line or coupe concerned.
- **The ‘Total cost’ item** is for costs in year zero. When and if subsequent operations are carried out, put the extra costs against the activities.
- If treatments (e.g., site preparation) are not applied, a dash symbol (-) or NA (for not applicable) should be entered to indicate the treatment was not applied.

5. Roads. Details need to be filled in for the various steps in road construction. This information is to be obtained from NRDCL

- **‘Drainage installed’** (item 5.5) means the distance of road for which all drainage works (side drains, culverts, cross drains, causeways and culvert entry and exit protection) have been completed.
- **‘Maintenance’** (item 5.10) (including bioengineering) is the length of road in the FMU that has received maintenance during the year.
- **In the ‘Actual cost’ column,** enter the total cost for road construction, bridges (if any) and maintenance for the year, in the boxes.

6. Recurrent Costs. Enter the budget amount in the ‘Planned’ box and the actual payments in the ‘Actual cost’ box.

7. Total Operating Costs. Total all the boxes in the ‘Actual cost’ column.

3.10.1.2. Form 2: Commercial Activities (Timber Extraction, Plantation and Regeneration Survey)

FMU Name:														
Report Period:														
Name of Monitoring Officials			Designation					Office						
A. Extraction from Cable lines/Adhoc Activities														
Location			Cable lines		6.No of Groups/Patches	7.Total Area Harvested (ha)	Volume						Remarks	
1.Block name	2.Compartment/Sub-comp	3.Working Circle	4. Cable Line No (Yr./No)	5. Cable line Length (m)			8.Inventry Volume (m³/ha)	9. Standing from Marking List (m³)	10. Log Volume Extracted (m³)	11.Log Recovery (%)	12. Firewood Produced (m³)	13. Log + Firewood Recovery (%)		

B. Regeneration Stock Assessment							
1. Block Name	2. Compartment /Sub-compartment	3. Working Circle	4. Cable Line No (Yr./No)	5. Area (ha)	6. Species	7. Stocking %	8. Remarks

C. Plantation Stock Assessment							
1. Block Name	2.Compartment/Sub-compartment	3. Working Circle	4.Cable Line No (Yr./No)	5. Area (Ha)	6. Species	7. Survival %	8. Remarks

Form 2. Filling Instruction- Commercial Activities (Coupes Harvested for the Year)

A. Extraction from Cable Line/Adhoc Activities

Numbers given below refer to columns on the Form and the form can be used for any silvicultural treatment, if one line is used for each separate coupe. If other treatments are entered in the form, enter NA (for not applicable) in columns 4 and 5.

- 1. Block name (Col 1) and 2. Compartment/Sub-compartment (Col 2):** The Block and Compartment/Sub compartment where the coupe is located.
- 3. Working Circle (Col 3):** Working Circle in which the coupe is located.
- 4. Cable Line no (Col 4):** Cable line number (e.g., 2024/1).
- 5. Cable lines length (Col 5):** Total length of the cable line, adjusted for slope.
- 6. No of Groups or Patches (Col 6):** Give the number of individual groups or patches in the cable line.
- 7. Total area harvested (Col 7):** This means the total area of all the groups, patches or clear-felled areas in the cable line (including the cable corridor), adjusted for slope. It is the area for which harvesting operations have all been completed, i.e. marking, felling and extraction. Do not include, for example, areas that have only been marked and felled.
- 8. Inventory volume (Col 8):** is the volume estimated during the operational inventory.
- 9. Standing volume from marking list (Col 9):** when the group selection or patch systems are being applied, this is the marked volume from both cable corridor and groups or patches. The volume is to be calculated using local volume tables or general volume tables for all the trees marked, felled and extracted (including cable corridors) in that cable line.
- 10. Log volume extracted (Col 10):** It is the total volume of logs harvested from the cable line. The data is to be obtained from NRDCL.
- 11. Log recovery (Col 11):** is the value of 'Log volume extracted' as a percentage of 'Marking list volume cut'.
- 12. Firewood produced (Col 12):** is the volume of firewood extracted from the cable line.
- 13. Log + firewood recovery (Col 13):** is the sum of column 10 and column 12, expressed as a percentage of column 9.

B. Regeneration Stock Assessment

- 1: Block name (Col 1) and 2: Compartment/ Sub-compartment (Col 2).** The Block and Compartment/Sub-compartment where the regeneration assessment is carried out.
- 3: Working Circle (Col 3) and 4: Cable line no (Col 4).** The working circle and cable line number where the regeneration assessment is carried out.
- 5: Area (Ha):** Total area of regeneration survey carried out.
- 6: Species:** Species encountered during regeneration survey
- 7. Stocking (%) (Col 5):** The regeneration assessment results in stocking %. This can be derived from FORM 10.

C. Plantation Stock Assessment

- 1: Block name (Col 1) and 2: Compartment/Sub-compartment (Col 2).** The Block and Compartment/Sub-compartment where the plantation assessment is carried out
- 3: Working Circle (Col 3) and 4: Cable Line No (Col 4).** The working circle and cable line number where the plantation assessment is carried out.
- 5: Area (Ha):** Total area of plantation carried out.
- 6: Species:** Species planted
- 7: Survival % (Col 5):** The Plantation assessment results in terms of survival % of seedlings. This can be derived plantation assessment reports.

3.10.1.3. Form 3: Divisional Activities (Detailed)

Activities	OPERATIONAL PLAN			Comments
	Planned	Implemented	Actual Cost	
1. Forest fires				
1.1 Fire lines for prevention	m	m		
1.2 Fuel reduction burning	ha	ha		
1.3 Training (No of courses/trainees)	No	No		
1.4 Number of fires		No	Nu	Suppression costs
1.5 Area burnt		ha		
2. Diseases / Epidemics / Other Damages (e.g. Landslides, Floods etc.)				
2.1 Preventive measures				Specify: e.g., debarking, debris burning
2.2 Incidence				Specify type of outbreak or damage and area affected
2.3 Control measures				e.g. Traplocks, salvage logging
3. Social Issues				
3.1 FMU Level Committee meetings held	No	No		
3.2 Meetings with CFMU held?	No	No		
3.3 Meetings on (.....)	No	No		
3.4 Meetings on (.....)	No	No		
3.5 Meetings on (.....)	No	No		

Comments		
4. Research		Specify Type and Action:
4.1 Silviculture/ecology		
4.2 Social		
4.3 Work study		

Form 3: Filling Instruction (DIVISIONAL ACTIVITIES, (Detailed))

This form should be completed by FMU In-Charge and Chief Forestry Officer on annual basis.

1. Forest fires:

- ‘Fire lines for prevention’, item 1.1, are fire lines prepared to protect valuable stands or plantations.
- ‘Fuel reduction burning’, item 1.2, when it is carried out.
- ‘Training’, item 1.3, relates to fire prevention and control courses.
- ‘Number of fires’, item 1.4, is the count of wildfires that occurred and ‘area burnt’, item 1.5, is the area of all fires in the FMU for the year.
- The cost of these activities should be entered in the ‘*Actual cost*’ column.

2. Diseases / Epidemics / Other Damages: Provide information on diseases, epidemics and other damages in terms of types, area and number.

3. Social Issues: Provide information on any types of meeting and public consultations carried out in the FMU.

4. Research: Provide information on the type of research carried out if any.

Form 3: Divisional Activities (Detailed) (Continued)

Activities	OPERATIONAL PLAN			Comments
	Planned	Implemented	Actual Cost	
5. Equipment / Infrastructure (DoFPS only)				specify type and purpose:
5.1 Vehicles				
5.2 Machinery				
5.3 Field equipment				
5.4 Office equipment				
5.5 Constructions				
6. Human Resources				specify position and grade:
6.1 Increase/decrease staff	No	No		
6.2 Purchase of external services	No	No		
6.3 Training (No of courses / trainees)	No	No		
7. Costs (FMU Staff Only)				
7.1 Territorial staff salaries	Nu		Nu	specify position and grade
7.2 Territorial staff allowances	Nu		Nu	
7.3 Planning and inventory	Nu		Nu	
7.4 Other incidental expenses	Nu		Nu	
8. Total Expenses			Nu	

Form 3: Filling Instruction (DIVISIONAL ACTIVITIES, (Detailed) (Continued)

5. Equipment/Infrastructure

For vehicles, machinery and equipment, specify purchase or disposal and number of items and the cost involved. For ‘constructions’, specify what is being constructed and how many.

6. Human resources

‘Training’ Specify how many staff were trained and the type of training. ‘Purchase of external services’ includes such things as consultants, accountants, electricians, etc.

7. Recurrent costs

Enter the total amounts for staff salaries, allowances and other incidental costs, both budgeted and actual, in the boxes. For item 7.3, indicate what sort of activity in the remarks column.

8. Total expenses is the total of all the costs recorded on Form 3.

3.10.2. Code of Best Practice Form for Self-monitoring

3.10.2.1. Form 4: Road Drainage by Culverts

FMU	Filled in by	Date										
<p>Instructions: Drive along all the roads in the FMU. Select the worst 2 or 3 km for sampling. Then walk the road, pace distance between culverts and measure average road gradient. Also assess, for each culvert, the condition of inlet and outlet and whether they are clear. Use extra sheets as needed.</p>															
Distance From Last Culvert (M)	Road Gradient Between Culverts (%)	Inlet Protected Against Erosion? Y/N	Outlet Protected Against Erosion? Y/N	Culvert Blocked? Y/N	<div style="border: 1px solid black; padding: 5px;"> <p>STARTING SCORE = 130</p> <p>Scoring: Calculate average distance between culverts and average road gradient. Look up the prescribed distance in the table below. If the actual average is more than the prescribed distance: subtract 10 points.</p> <p>Inlets, outlets, blockages and size are <i>not</i> scored. The information is collected to show that you need to correct it.</p> </div> <table border="1" style="margin-top: 10px; width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #c8e6c9;">Road Gradient (%)</th> <th style="background-color: #c8e6c9;">Distance Between Culverts (m)</th> </tr> </thead> <tbody> <tr><td>4</td><td>110</td></tr> <tr><td>5-8</td><td>90</td></tr> <tr><td>9-10</td><td>80</td></tr> <tr><td>11-15</td><td>60</td></tr> </tbody> </table> <p>Progress Score=.....</p>	Road Gradient (%)	Distance Between Culverts (m)	4	110	5-8	90	9-10	80	11-15	60
Road Gradient (%)	Distance Between Culverts (m)														
4	110														
5-8	90														
9-10	80														
11-15	60														
Av=	Av=														

3.10.2.3. Form 6: Streaming Crossings

FMU	Filled in by	Date
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Instructions: When the road crosses a perennial stream, check that a culvert, bridge or concrete ford has been installed to carry the stream. Also, that there are culverts within 50m to prevent road drainage from entering the stream. The culvert cross-sectional area or space under a bridge needs to be about 1.5 times the cross-section of the stream channel*. Assess at least five streams.

For all running streams, as they are found, fill in below:

Stream No.	Culvert or Bridge to Carry Stream Under Road or Concrete Ford? Y/N	Culvert Pipes or Bridge Big Enough*? Y/N	Culverts Within 50m of Stream, Each Way? Y/N
1			
2			
3			
4			
5			
6			
7			
8			

Progress score from form 5=

Scoring.

- If there is no culvert, bridge or ford prepared for any of the streams, **subtract 10 points**
- If the culverts or bridges are not big enough for any of the streams, **subtract 5 points**
- If there are no diversion culverts for any of the stream, **subtract 5 points**

*Commonly use culvert pipes have the following cross-sectional areas. 30cm – 0.07m², 60cm – 0.28m², 90cm – 0.64m², 120cm – 1.13m²

*Stream cross sectional area in square metres = Width of channel (m) x Depth on channel (m) x 0.5

Progress Score=

3.10.2.4. Form 7: Cable Lines

FMU	Filled in by	.....	Date	.....
<p>Instructions: Walk along the centre of completed (i.e., utilized) cable lines and measure the following in sample sections of 100m. Assess at least half of the length harvested for the year (could be from several lines).</p>					
<p>Total length of strip examined _____(m)</p>					
Sample Section	Do All Streams in Cut Strip have Buffers? Y/N	Are all the Buffers Wider than 30m? Y/N	Are All the Buffers Free of Lops/Tops and Stumps? Y/N If N, Say Which.	Is the Maximum Slope in the Strip Less than 100%? * Y/N	Is The Strip Free of Channels Caused by Manual Extraction of Timber? Y/N
1					
2					
3					
4					
5					
6					
7					
<p>Progress score from form 6=</p>					
<p>Scoring:</p> <ul style="list-style-type: none"> • If any of the streams have no buffers (ANY N)- subtract 10 points • If any of the streams have buffers < 30m wide (ANY N) - subtract 6 points • If any of the buffers include stumps (ANY stumps - subtract 5 points • If any of the buffers have lops/tops (ANY lops/tops - subtract 4 points • If more than 20% of samples are steeper than 100% (>20% N) - subtract 10 points • If any of the buffers include channels from manual extraction - subtract 5 points 					
<p>* Check the Management Plan. In some localities with unstable terrain the slope limit shall have been set at 75%.</p>					
<p>Progress Score:</p>					

3.10.2.5. Form 8: Interlines

FMU	.....	Filled in by	.....	Date	.....
<p>Instructions: Walk along the centre of the interline space between cable lines and assess the following in sample sections of 100m (could be from several lines). Assess at least half of the length harvested for the year (could be from several lines).</p>					
<p>Total length of strip examined _____ (m)</p>					
Sample Section	During Felling on the Cable Line, Have Trees Been Felled into the Uncut Strip Causing Damage to Standing Trees, Saplings, Regeneration? (Y/N)	Has Felling/Pit Sawing of Large Trees (>35cm DBH) Occurred in the Uncut Strip Since Opening the Coupe? (Y/N)	Has Cutting/Removal Of Saplings Taken Place in the Uncut Strip, for Poles, Fencing Materials or Other Purposes Since Opening the Coupe? (Y/N)	Has Lopping for Fodder Occurred in the Uncut Strip Since Opening the Coupe? (Y/N)	Does the Uncut Strip Show Signs of Mineral Soil Disturbance and/or Channelling Caused by Manual Extraction of Timber, Poles and/or Fuelwood Since Opening the Coupe? (Y/N)
1					
2					
3					
4					
5					
6					
7					
8					
<p>Progress Score from form 7 =</p>					
<p>Scoring:</p> <ul style="list-style-type: none"> • If any Yes (Y) in column 1 subtract 5 points • If any Yes (Y) in column 2 or 3 subtract 10 points • If any Yes (Y) in column 4 subtract 4 points • If any Yes (Y) in column 5 subtract 6 points 					
<p>Final Score =</p>					

3.10.3. Biodiversity Form for Self-monitoring

3.10.3.1. Form 9: Wildlife Monitoring: Animal (Fauna) Indicator Species

FMU	Filled in by	Date:
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TRANSECT & NON-TRANSECT DATA SHEETS. (1)

1. Transect Data Sheet on **Animal (Faunal) Indicator Species** (check with original inventory).

Date:		Team members:	List of Indicator Species for this FMU:
Transect Route:		1.	1.
Elevational Range:		2.	2.
Start Time for Transect:		Local Guide:	3.
End Time for Transect:			4.

Species	Observation	Group Size	Call	Tracks	Scat	Hairs	Kills	Mud Marks	Bedding	Tree Marking

2. Non-transect Data Sheet on Animal (Faunal) Indicator Species (2)

Species	Location	Time	Observation	Group Size	Call	Remarks

3. Notes on Human Related Activities (Including Hunting) on Wildlife:

3.10.3.2. Form 10: Plant Indicator Species and Regeneration Stocking

FMU	.....	Filled in by	.....	Date	:.....
List of Plant (Flora) Indicator Species for this FMU (consult original Inventory for Main Canopy and important Understory Species):					
1.		6.		Team Members:	
2.		7.		1.	
3.		8.		2.	
4.		9.		3.	
5.		10.		Local Guide:	

1. Transect Data Sheet on Regeneration of Indicator Species in Cut-over Groups, Patches or Strips:

Date:	Transect Location & Route:	Transect Location & Route
--------------	-------	---------------------------------------	-------	--------------------------------------	----------------

Method: The total length of cable line harvested in the year should be examined. Divide this distance by 50. This is the distance between plots along the transect. Begin the transect along the cut over area(s) starting from a randomly located point, avoiding the cable line corridor. The transect need not be a straight line. At each plot location, consider only the genera/species listed above, both natural regeneration and planted trees combined. Look for established seedlings using a plot radius of 1.26 m. If one of the above species is found, write the species number in the ‘Stocked’ box for that plot. Ignore any of the same species after you have found the first one but continue to check for the others.

Plot No.	Stocked ?	Plot No.	Stocked ?	Plot No.	Stocked?	Plot No.	Stocked?	Plot No.	Stocked?
1		11		21		31		41	
2		12		22		32		42	
3		13		23		33		43	
4		14		24		34		44	
5		15		25		35		45	
6		16		26		36		46	
7		17		27		37		47	
8		18		28		38		48	
9		19		29		39		49	
10		20		30		40		50	

Percent Stocking for Indicator species
= No. of stocked boxes
x 2 = _____

1a. Note whether planted species include any that are not on the list of up to 10 local mature canopy species (indicator species) given above (e.g., *Cupressus* in a broadleaved forest area) (Y/N)

Comment: _____

1b. Note also whether planted trees are well mixed by species (i.e., they do not form even small blocks of the same species) (Y/N)

2. Transect Data Sheet on Regeneration of Indicator Species in the Interline (Uncut) Strips:

Date:	Transect Location & Route:	Transect Location & Route
--------------	-------	---------------------------------------	-------	--------------------------------------	-------

Method: (Begin a transect along the centre of the uncut strip, starting from a randomly located point inside the uncut forest. Stay at least half a tree height from any edges. Assess plots systematically, the same distance apart as the plots on page 1 of this form. The transect need not be a straight line. Consider only the genera/species listed on page 1. Count seedlings up to 5 m in height using a plot radius of 2.06 m. (it is intended those seedlings up to 10 years of age shall be included in this count). Put the species numbers in the ‘Stocked’ box when you find them, as for page 1.

Plot No.	Stocked?	Plot No.	Stocked?	Plot No.	Stocked?	Plot No.	Stocked?	Plot No.	Stocked?
1		11		21		31		41	
2		12		22		32		42	
3		13		23		33		43	
4		14		24		34		44	
5		15		25		35		45	
6		16		26		36		46	
7		17		27		37		47	
8		18		28		38		48	
9		19		29		39		49	
10		20		30		40		50	

Percent Stocking
= No. of stocked boxes x 2
= -----
%

2a. Note intrusion of any ‘exotic’ ‘weed’ species (e.g., clover, pasture grasses, shrubs or trees from outside the operational area) (Y/N)

Comments

3. Notes on Human-related activities including the incidence and intensity of grazing by domestic livestock, collection of medicinal plants and harvesting of other NWFPs:

Guidance on Completing Form 10

Introduction:

Regeneration stocking is measured to assess whether or not there are enough young trees to develop into a fully stocked mature stand. Different standards for acceptable stocking shall be nominated for plantations and natural stands. For stands that shall be regenerated naturally, a standard shall usually be nominated through observation of what seem to be well stocked stands of natural regrowth. For plantations, acceptable stocking is usually defined as the percentage survival of the planted trees, these having originally been planted at a density thought to be sufficient to develop into a fully stocked mature stand.

For broadleaf forests in Eastern Bhutan, even when a stand is regenerated by planting, natural regeneration may well occur in addition and it is desirable that the standard adopted can assess the total stocking, not just one component or the other.

Measuring Regeneration Stocking:

Regeneration stocking can be expressed either as seedling stocking per hectare, or as percentage stocking by quadrats of a nominated area.

Seedling stocking per hectare is estimated by establishing sample plots throughout the area of regeneration, counting the acceptable seedlings on each plot, deriving an average for the sampled area and converting it to per hectare terms. A detailed Guideline for assessing Regeneration in terms of stocking/ha in the Forest Management Units is prescribed in the “Guideline for Regeneration survey in the Forest Management Units” in the following section.

The stocked quadrat method involves the concept that, for acceptable stocking, a certain area of growing space needs to be occupied by at least one free-to-grow individual of a desirable species. To measure regeneration stocking, one would lay out a number of sample plots, each with an area equivalent to this growing space, and look to see if there is **at least one** free-to-grow individual present (i.e., if they are “stocked” or not). One then divides the number of stocked plots by the total number of plots measured to obtain the ‘percentage stocking’ of the site.

The stocked quadrat method is clearly much quicker to apply, since the plot only has to be searched until the **first** acceptable seedling is found. However, there are problems involved with interpreting the results in the context of number per hectare stocking. If it was decided that 1000 stems/ha were the minimum acceptable stocking, and a quadrat size of 0.001 ha were used, it is important to note that 100% stocking by .001 ha would **not** be equivalent to 1000 stems/ha, because at least some of the quadrats would have had more than one stem on them, and it is not known how many more, since they were not counted.

The actual density is therefore an unknown amount more than 1000 stems/ha. In practice, since it is the **minimum** stocking that is considered important, the disadvantage of not knowing the exact stocking is considered to be out-weighed by the ease of implementing the method. To allow for the fact that actual stocking is almost always going to be greater than the minimum, the acceptable standard used is usually reduced to around 70% for the nominated quadrat size. For example, 70% stocking by 0.001 ha plots is roughly equivalent to a stocking of 1000 stems/ha. The simplest way to lay out a sample plot (quadrat) is to cut a stick with length equal to the radius of a circle that has the area desired. Taking the example of a target density of 2,000 stems per hectare and, therefore, a growing space of 5 m² (10,000 m²/2,000), this leads to a plot radius (r) of 1.26 m ($5 = \pi r^2$; $r^2 = 5/\pi$; $r = \sqrt{5/\pi}$).

The standard proposed for broadleaf forest in Eastern Bhutan is 70% stocking by 5m² plots, i.e. approximately 2000 acceptable seedlings per hectare, one year after harvesting.

3.10.4. Community Participation Form for Self-Monitoring

3.10.4.1. Form 11: –Community Participation RRA Checklist

FMU	.....	Filled in by	.....	Date	.....
Which Community do the people come from?					
Team members					
How many MEN & WOMEN in a group are interviewed?					
MEN			WOMEN		
<p>Instructions: Interviews should be unstructured, using open ended questions (Not Yes/No questions) to obtain the following information. Use one sheet for each interview. These subjects/questions are only a start - ask more to get detail when the opportunity arises. Use the RRA techniques of ‘probing’ to learn more about discussion topics that seem important.</p>					
A. Local Community Participation (Indicator 1.7)					
1) How did they learn about the existence of the nearby FMU?					
2) What activities do they know about that go on in the FMU?					
3) How have the commercial activities in the FMU affected their traditional resource use?					
4) How and when were they consulted about their use of the FMU?					
5) Were there any village meetings about the activities in the FMU?					
<ul style="list-style-type: none"> • When? 					
<ul style="list-style-type: none"> • Who went to the meeting from the village? 					
<ul style="list-style-type: none"> • How were they involved in the meetings? 					
<ul style="list-style-type: none"> • What were the results of going to the meeting? 					
6) Is there a Management Committee (or similar forum) for the FMU on which communities are represented?					
<ul style="list-style-type: none"> • When was the Committee formed? 					
<ul style="list-style-type: none"> • Who is on the Committee from the village? 					
<ul style="list-style-type: none"> • What are the results of being on the 					

Committee?	
7) Other Observations or Comments on Participation:	

B. Extent to which Community needs are met from the FMU (Indicator 1.8)	
1) What products does the community get from the FMU?	
2) How often?	
3) Which products are needed annually, biennially, occasionally?	
4) Which products can be obtained from elsewhere? Where?	
5) If some or all products were not available from the FMU, what would you do?	
6) Which products can still be obtained from the FMU?	
7) Which products can't be obtained from the FMU now?	
8) Other Observations or Comments about the FMU Meeting Local Needs.	

3.10.5. Physical, Financial and Environmental Monitoring Summary Forms

3.10.5.1. Summary Form 1: Commercial Activities

PHYSICAL, FINANCIAL AND ENVIRONMENTAL MONITORING SUMMARY FORM (Page 1)					
FMU Name:					
Report Period:					
Name of Monitoring Official		Designation		Office	
Activity 1	Silviculture system			Working Circle	
Item	Plan Target	Implemented	Cost (Nu)	Revenue (Nu)	Comments
1. Area harvested (ha) (AAC)					
2. Standing volume harvested (m ³) (AAC)					
3. Log volume produced (m ³)					
4. Value of Log sold from FMU (Nu)					
5. Firewood volume produced (m ³)					
6. Value of firewood sold (Nu)					
7. Total royalty paid to DoFPS (Nu)					
8. Forest roads constructed (km)					
9. Area regenerated/planted (ha)					
Activity 2	Silviculture System			Working Circle	
Item	Plan Target	Implemented	Cost (Nu)	Revenue (Nu)	Comments
1. Area harvested (ha) (AAC)					
2. Standing volume harvested (m ³) (AAC)					
3. Log volume produced (m ³)					
4. Value of Log sold from FMU (Nu)					
5. Firewood volume produced (m ³)					
6. Value of firewood sold (Nu)					
7. Total royalty paid to					

DoFPS (Nu)					
8. Forest roads constructed (km)					
9. Area regenerated (ha)					
Activity 3	Silviculture System			Working Circle	
Item	Plan Target	Implemented	Cost (Nu)	Revenue (Nu)	Comments
1. Area harvested (ha) (AAC)					
2. Standing volume harvested (m ³) (AAC)					
3. Log volume produced (m ³)					
4. Value of Log sold from FMU (Nu)					
5. Firewood volume produced (m ³)					
6. Value of firewood sold (Nu)					
7. Total royalty paid to DoFPS (Nu)					
8. Forest roads constructed (km)					
9. Area regenerated (ha)					
ACTUAL REVENUE & EXPENDITURE					
1. NRDCCL Total Revenue for FMU					
2. Royalty paid by NRDCCL					
3. NRDCCL expenditure for FMU					
4. NRDCCL Net Revenue (1 - (2 + 3))					
5. Royalty paid to DoFPS					
6. DoFPS expenditure for FMU					
7. DoFPS Net Revenue (5 - 6)					
Total Revenue for FMU (4 + 7)					

PHYSICAL, FINANCIAL AND ENVIRONMENTAL MONITORING SUMMARY FORM

A. COMMERCIAL ACTIVITIES (Page 1)

- Tables are provided for three different harvesting activities in the FMU, corresponding to the silvicultural systems detailed on Form 1. Fill up the following details in each table:

1. Area harvested

- ‘AAC’ (area) is obtained from the ‘Planned’ column for the silvicultural system, from Form 1, items 2.2, 2.5, 2.7, 2.10, 2.12.
- ‘Implemented’ (ha) is transferred from Form 1. For thinning or single tree selection treatments, this is the area of forest over which the treatment is being applied – ‘total working area’ items 2.2, 2.5. For group selection, clear cut treatments and seed tree treatments, it is the ‘Total area harvested’ items 2.7,2.10,2.12.

2. Standing volume harvested

- ‘AAC’ (Plan Target) is obtained from Form 1, items 2.1, 2.4, 2.6, 2.9, 2.13, ‘Planned’ column. ‘Implemented’ comes from the same items, ‘Implemented’ column.

3. Log volume produced

- ‘Plan Target’ can be obtained from NRDCL.
- ‘Implemented’ comes from Form 2, the total of column 10, ‘Log volume extracted’. If more than one silviculture system is in use, separate totals for each shall be necessary.
- The cost of production for ‘Log volume produced’ (the total of marking, felling and extraction costs to the road head) should be entered in the ‘Cost’ column. Obtain this from NRDCL.

4. Value of log sold from FMU.

- This is the total of sales from the FMU during the year, obtained from NRDCL. It is not the value of the sawlog produced, because it may include some sale of previous stocks. The figure is entered in the ‘Revenue’ column.

5. Firewood volume produced.

- ‘Plan Target’ can be obtained from NRDCL.
- The ‘Implemented’ comes from Form 2, the total of column 12, ‘Firewood produced’
- The cost of production for firewood, obtained from NRDCL, is entered in the ‘Cost’ column.

6. **Value of firewood sold** is obtained from NRDCL and entered in the 'Revenue' column.
7. **Total royalty paid to DoFPS** is obtained from NRDCL and entered in the 'Revenue' column.
8. **Forest roads constructed.**
 - Obtain the 'Plan Target' from NRDCL.
 - 'Implemented' is obtained from Form 1, item 5.7, 'road completed' and 'Cost' from the same form, Roads, 'Total construction cost', item 5.8.

Activity 3. Silvicultural System

Sl. 9 Area regenerated/Planted:

- When natural regeneration is being applied, this area shall be the same as the sum of 'Total harvested area' from column 7 of Form 2. When plantations are carried out the area comes from, 'Area planted' on Form 1, item 4.2.
- 'Cost' comes from 'Total cost' on Form 1, under either Natural regeneration (item 3.3) or Plantation, (item 4.4).

B. ACTUAL REVENUE AND EXPENDITURE

NRDCL Total Revenue:

- It is the total of 'Value of Log sold from FMU' and 'Value of firewood sold', (only if sold through NRDCL) items 4 and 6 from the different 'Activities' on the Summary Form.

Royalty paid by NRDCL:

- It is the total of the 'Total royalty paid to DoFPS' items for each 'Activity' item 7, Summary Form.

NRDCL Net Revenue:

- It is Total Revenue minus the sum of Royalty and NRDCL expenditure from Form 1.

Royalty paid to DoFPS:

- It is 'Royalty paid by NRDCL' plus 'Total Royalty' from the 'TERRITORIAL/DIVISIONAL ACTIVITIES', FOREST PRODUCTION' table on the second page of the Summary Form (item 1.3).

DoFPS expenditure:

- It is the total of the 'Actual cost' column on Form 3 (item 8).

DoFPS Net Revenue:

- It is 'Total royalty paid to DoFPS' minus 'DoFPS expenditure'.

3.10.5.2. Summary Form 2: Divisional Activities

1. Forest production						
1.1 Wood Products	Disposal to					
	Rural			Commercial		
	Quantity (m ³)	Quantity	Royalty (Nu)	Quantity (m ³)	Quantity	Royalty (Nu)
Trees		No			No	
Chams		No			No	
Tsim		No			No	
Dangchung		No			No	
Fencing posts		No			No	
Flag posts		No			No	
Firewood		m ³			m ³	
Other products (royalty only)						
1.2. Non-wood Products	Rural			Commercial		
	Quantity (m ³)	Quantity	Royalty (Nu)	Quantity (m ³)	Quantity	Royalty (Nu)
Bamboo		No			No	
Extractive oils		Kg			Kg	
Resin		Kg			Kg	
Daphne bark		Kg			Kg	
Mushroom		Kg			Kg	
Other products (royalty only)						
Total						

Instruction for Summary Form 2: Physical, Financial and Environmental Monitoring

1. FOREST PRODUCTION

Add together the quantities and royalties for each item (eg., trees, chams etc) to obtain totals for the year. Enter individual values for the items listed individually in the ‘Wood Products’ table on the Summary Form.

Add together the totals for the items specified collectively and enter this in the ‘Other products (royalty only)’ box on the Summary Form.

Do the same for the Non-Wood Products, in this case entering the individual items listed and totaling for the remainder.

Summary Form 2: Divisional Activities (Continued)

2. Forest protection					
Offences	Number			Quantity	
Offences detected					
Damaging agents	Number			Hectares	
Forest fire					
Insect or disease epidemic					
Landslide					
Flood					
Other					
Total					
3. Research					
Type					
Achievement					
4. Social issues					
FMU Steering Comm. Meetings held (No)					
Meetings with CFMU held? (No)					
Meetings for other purposes? (No)					
Meetings for other purposes? (No)					
Comments					
5. Environmental monitoring (Scores from Env. Monitoring Forms)					
Purpose	Roads (culverts)	Roads (drains etc.,)	Streams	Cable lines	Interlines
Form Number	4	5	6	7	8
Progress score*					
*Starting score = 140					
6. Regeneration stocking for the area assessed this year (from Env Mon Form 10)					

Instruction for Summary Form 2: Physical, Financial and Environmental Monitoring

FOREST PROTECTION

- Offences detected: Add the number of all offences detected.
- Damaging agents: Transfer the total number and area from Form 3, for the different items, 'Forest fire' (items 1.4, 1.5), 'Insect or disease epidemic', 'Landslide', 'Flood' (all from item 2.2).

RESEARCH

- This table provides a summary of information on Research Activities in the FMU. Obtain from Form 3 (items 4.1 to 4.4).

SOCIAL ISSUES

- This table provides a summary of information on Social Issues in the FMU. Obtain from Form 3, items 3.1 to 3.5.

ENVIRONMENTAL MONITORING

- Transfer the progress scores from the Environmental Data Collection Forms 4-8. Regeneration stocking is transferred from the Environmental Data Collection Form 10 for the current year. Note that this area shall usually be the coupes harvested three **previous** years.

3.10.6. Self-Monitoring Reporting Format

1. General Information

- FMU Name:
- Reporting Period: (e.g., July 2023 - June 2024)
- Unit In-Charge:
- Location:
- Date of Report Submission:

2. Objectives

2.1 Primary Objective:

- Verification of implementation of planned activities as per Operational Plan (OP).
- Secondary Objectives:
- Collection of physical, financial, and environmental data.
- Assessment of the effectiveness of ongoing activities.
- Identification of issues and potential improvements.

3. Data Collection

3.1 Physical and Financial Data

- Forms Used: Physical and Financial Forms 1-3
- Data Collected:
- Summary of activities completed (include reference to specific forms and annexures).
- Financial expenditure vs. budget (provide breakdown by activity).

3.2 Environmental Data

- Forms Used: Environmental Forms 4-11
- Data Collected:
- Environmental impact assessments (e.g., erosion control, water quality monitoring).
- Summary of any environmental issues encountered, and measures taken.

3.3 Verification and Validation

- Review of data collection forms.
- Field verification activities (list areas visited, dates, and methods).
- Identification of any discrepancies or missing data.

4. Data Analysis

4.1 Summary Information

- Summary Forms Used: Summary Physical and Financial Form 1-3, Environmental Summary Form 4-8.
- Key Findings:
- Overall progress towards OP goals (qualitative summary).
- Major successes and challenges.

4.2 Assessment/Scoring

- Scoring of Indicators:
- Use the scoring scale provided in the relevant forms.
- Justification for scores assigned (e.g., based on field observations, comparison to baseline data).

5. Issues and Challenges

- Any ongoing or potential issues identified during monitoring.
- Suggested mitigation measures.
- Technical assistance required (if any).

6: Recommendations

- Short-term Recommendations: Actions to be taken before the next reporting period.
- Long-term Recommendations: Actions to be considered in future planning cycles.

7. Name of Monitoring Officials

- Name:
- Designation:
- Office:

3.11. Annual Monitoring

For the purpose of annual monitoring, 5 criteria and 16 indicators have been adapted from the MP C&I and forms have been developed for selected indicators. The criteria and indicators for the annual monitoring are:

- i. Annual Commercial timber volume removed compared with AAC
- ii. Annual Rural Timber Volume Removed Compared with AAC
- iii. Annual demand and supply of NWFP
- iv. Percent of clear-cut area regenerated through the plantation and survived/established
- v. Status of natural regeneration (NR)
- vi. Forest Pest and disease and management
- vii. Forest fire incident and response/damage assessment
- viii. Post-fire management
- ix. Waste management
- x. FMU area with significant soil erosion and threats to stream or spring
- xi. The forest area managed to protect cultural, social, and spiritual values
- xii. Extent of community participation in forest management
- xiii. Human-wildlife incidents and its interventions in FMU
- xiv. Disposal of the timber extracted from FMU
- xv. FMU Sign and Signages
- xvi. Achievement on OP Target

The indicator and forms shall be explained in detailed in the subsequent sections

3.11.1. Annual Monitoring Forms

3.11.1.1. Form 1: Annual Commercial Timber Volume Removed Compared with AAC

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems					
Indicator 1.1 Annual Commercial Timber Volume Removed Compared with AAC					
Standard: Annual removal can be ±10% in case of annual monitoring except of last OP during the management plan period (i.e. 10 th year)					
Sl. No	Month	AAC as per OP (m ³)	Achievement (m ³)	Achievement (%)	Recommendation/Remarks
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
Total					
Score					
Note: AAC is annual allowable cut, OP is operational plan					
Guidance					
This indicator shall be scored based on achievement of the planned approved AAC in the operational plan. The indicator shall be scored based on the percentage undercut or overcut which is determined by: $\% \text{ Achievement} = \text{Total Achievement} / \text{AAC (OP)} \times 100$ Determine Over cut or under cut as = $100 - \% \text{ Achievement (positive \& negative values are undercut \& overcut respectively)}$ For scoring use absolute values					
Data Source					
Monthly record keeping Form I and II, Record of illegal timber extraction, sanitation operations, Annual Monitoring report, Annual record keeping Form VI and VII, Approved OP, annual monitoring report, evaluation report.					
Scoring Scale					
Sl. No	Undercut%	Score	Overcut%	Score	
1	90-100	1	1-10	9	
2	80-90	2	> 10	0	
3	70-80	3			
4	60-70	4			
5	50-60	5			
6	40-50	6			
7	30-40	7			
8	20-30	8			
9	10-20	9			
11	0-10	10			

3.11.1.2. Form 2: Annual Rural Timber Volume Removed Compared with AAC

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems					
Indicator 1.2: Annual Rural Timber Volume Removed Compared with AAC					
Standard: Annual removal can be ±10% in case of annual monitoring except of last OP during the management plan period (i.e. 10 th year)					
Sl. No	Month	AAC as per OP (m ³)	Achievement (m ³)	Achievement (%)	Recommendation / Remarks
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
Total					
Score					
Note: AAC is annual allowable cut, OP is operational plan					
Guidance					
This indicator shall be scored based on achievement of the planned approved AAC in OP plan. The indicator shall be scored based on percentage under cut or overcut which is determined by: $\% \text{ Achievement} = \text{Total Achievement} / \text{AAC (OP)} \times 100$ Determine Overcut or Undercut as = $100 - \% \text{ Achievement (positive \& negative values are undercut \& overcut respectively)}$ For scoring use absolute values					
Data Source:					
Monthly and annual record keeping Form III, IV and VIII, Annual Monitoring reports, Annual record keeping Form VIII, Approved OP, removal of forest produce from registered land, monitoring and evaluation report					
Scoring Scale					
Sl. No	Undercut%	Score	Overcut%	Score	
1	90-100	1	1-10	9	
2	80-90	2	> 10	0	
3	70-80	3			
4	60-70	4			
5	50-60	5			
6	40-50	6			
7	30-40	7			
8	20-30	8			
9	10-20	9			
10	0-10	10			

3.11.1.3. Form 3: Annual Demand and Supply of NWFPs

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems							
Monitoring Indicator 3. Annual Demand and Supply of NWFP							
Standard 1: Cumulative annual removal $\pm 10\%$ of AAC (If AAC is prescribed)							
Standard 2: NWFP % based on demand and supply and resource availability (if AAC is not prescribed)							
NWFP Name							
Month	Year of Operation	Unit	AAC	Demand	Supply	Percent Achieved	Recommendation/ remarks
Total							
Score							
Note: AAC is annual allowable cut; OP is operational plan							
Guidance							
<p>This indicator shall be scored based on achievement of the planned and approved AAC in the operational plan if AAC is prescribed in management plan or NWFP management groups. The indicator shall be scored based on percentage under and over harvest determined by:</p> <p style="text-align: center;">$\% \text{ Achievement} = \text{Total achievement} / \text{AAC (OP)} \times 100$</p> <p>Determine Over harvest or underharvest = $100 - \% \text{ Achievement}$ (<i>positive & negative values are undercut & overcut respectively</i>)</p> <p>For scoring use absolute values</p> <p>If AAC is not prescribed, use % of demand for NWFP met from the FMU</p> <p style="text-align: center;">$\% \text{ demand} = \text{Supply} / \text{Demand} \times 100$</p>							
Data Source: Monthly and annual recording keeping form V and IX prescribed in the code, Annual monitoring report, Demand assessment reports, Annual OP, Monitoring and Evaluation reports							
Scoring Scale							
Sl. No	If AAC is Prescribed MP/OP or NWFP Management Group				If AAC is Not Prescribed		
	Under Harvest %	Score	Over Harvest %	Score	% of Demand Met	Score	
1	90-100	1	1-10	9	90-100	10	
2	80-90	2	> 10	0	80-90	9	
3	70-80	3			70-80	8	
4	60-70	4			60-70	7	
5	50-60	5			50-60	6	
6	40-50	6			40-50	5	
7	30-40	7			30-40	4	
8	20-30	8			20-30	3	
9	10-20	9			10-20	2	
10	1-10	10			1-10	1	
11	<1	0			<1	0	

3.11.1.4. Form 4: Percent of Clear-Cut Area Regenerated through Plantation, Survivability and Establishment

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems								
Indicator 1.4: Percent of Clear-Cut Area Regenerated Through Planation, survivability and Establishment								
Standard: More than 80% of clear-cut area excluding roads shall be replanted and plantation are successful								
Sl. No	Year	Cable Line No.	Survey Year	Corridor Area (ha)	Opening Area (ha)	Area Planted (ha)	Survival %	Recommendation/ Remarks
1								
2								
3								
4								
5								
6								
7								
8								
9								
Total/ Average								
Score								
<p>Note: Cable line wise clear-cut area, area replanted and average survival percent of plantations along each cable line shall be compiled using table below. The clear-cut area shall include all the areas under the current year of operation while plantation area shall be reported for all area operated in previous operation year. The area under plantation and survival percent shall be verified from the annual plantation monitoring report. Measure the cable width of 10% of operated cable lines and area of all 20% of group/patch openings.</p>								
Guidance								
<p>This indicator shall be scored based on the percentage of clear-cut areas reforested through plantation and average survival percent of the plantation sites at all sites. Both scoring is mandatory for all FMU for which plantation is prescribed in management plan and/ or recommended in annual monitoring or evaluation reports.</p>								
Data Source								
<p>Annual OP, AMR, Regeneration survey report, Site wise plantation monitoring/evaluation report, evaluation report if applicable, Plantation monitoring report, Plantation journal, evaluation report.</p>								
Scoring Scale								
Clear-cut Area Planted				Survival Percent				
Sl. No	% of Area Planted	Score		Sl. No	Survival Percent (%)	Score		
1	80-100	5		1	>=90	10		
2	60-80	4		2	80-90	9		
3	40-60	3		3	70-80	8		
4	20-40	2		4	60-70	7		
5	01 -20	1		5	50-60	6		
6	< 1	0		6	40-50	5		
				7	30-40	4		

3.11.1.5. Form 5: Status of Natural Regeneration

Criteria 2: Conservation of Biological Diversity				
Indicator 2.1: Status of Natural Regeneration (NR)				
Standard: Natural regeneration is adequate and where necessary assisted/promoted				
Summary of NR Survey Report				
Cable Line No.	Year of Operation	NR Survey Year	Average Seedling	Recommendation/Remarks
Average Score				
Facilitating natural regeneration (list of activities implemented to promote NR)				
Survey Year	Total Cable Lines Operated	Types of Intervention	Cable Line No.	Year of Operation of Cable Line
Total Activities Score				
Total Score				
Note: This indicator is applicable if natural regeneration is recommended in MP				
Guidance				
i) Review the annual natural regeneration survey reports and compile the information ii) Review and list any activities implemented in FMU to facilitate NR (if not adequate from survey report) iii) Compile the NR report of at least last three years iv) Score the indicator based on NR status and activities implemented to facilitate NR (soil disturbance/scarification, bush clearing, grazing management; NR survey/monitoring; seed broadcasting; etc.). v) NR status are; a) <i>Adequate</i> : if regeneration is more than 2000 per ha, b) <i>Doubtful</i> : If regeneration is 1000-2000 per ha and, c) <i>Poor</i> : If regeneration is below 1000 per ha				
Data Source				
Natural regeneration survey report, Annual Monitoring report, Evaluation reports, field work based on time availability				
Scoring scale				
Sl. No	Status of NR	Score	No. of activities promoting NR	Score
1	Adequate	5	> 3 activities	5
2	Doubtful	3	> 2 activities	3
3	Poor	1	> =1 activity	2
			< 1 activity	0
			NR adequate	5

3.11.1.6. Form 6: Forest Pest & Disease and Its Management

Criteria 3: Maintenance of Forest Ecosystem Health and Vitality								
Indicator 3.1: Forest Pest & Disease and Its Management								
Standard: Pest and disease infestation detected, reported and managed								
Month	Detection (Y/N)	Reporting (Y/N)	Damage Assessment (Y/N)	Area Affected (ha)	Affected Area Mapped (Y/N)	Sanitation Operation Start Month	Intervention List	Recommendation / Remarks
Score								
Note: Y- Yes, N- No.								
Guidance								
i) Determine the detection of pests and diseases and review the damage assessment report (map, volume, prescription) ii) Verify whether the sanitation operation is started or not? iii) Based on pest and disease incidence, damage assessment and sanitation operation, score the indicator using scoring scale below								
Data Source: Self-monitoring forms, observation, monitoring and evaluation report								
Scoring Scale								
Sl. No	Pest and Disease							Score
1	Detected, reported, damage assessment completed along with map and sanitation operation started							5
2	Detected, reported, damage assessment completed along with map but sanitation operation not started							4
3	Detected, reported, damage assessment ongoing							3
4	Detected, reported but damage assessment not started							2
5	Detected but not reported							1
6	Observed during monitoring-by-monitoring team. No detection or reporting record found							0

3.11.1.8. Form 8: Post-Fire Management

Criteria 3: Maintenance of Forest Ecosystem Health and Vitality					
Indicator 3.3: Post Fire Management					
Standard: Post fire management activities fully implemented					
Month	Area Affected by Fire (ha)	Estimated Volume of Timber (m ³)	Volume of Timber extracted (m ³)	Area Replanted (ha)	Recommendation / Remarks
Total					
Score					
Note: This indicator is relevant only if there is fire incidence in the FMU and forest fire management is recommended in fire damaged report					
Guidance					
i) Review the forest fire damage assessment report and list out the post fire management activities recommended and recommendation from annual monitoring reports, evaluation report ii) Review the status of implementation of post fire management activities (e.g removal of timber, plantation, etc.) iii) Compute the extent of completion of implementation of post fire management in terms of volume and area if timber removal is recommended and area brought under plantation if plantation is recommended iv) Score the indicator using the scoring scale below based on status of progress of implementation of post fire management activities					
Data Source					
Annual Monitoring report, mid-term evaluation report, activity implementation and completion report					
Scoring Scale					
Sl. No	Action Taken				Score
1	Extraction of timber and/or reforestation completed within 1 year				5
2	> 75 % of forest fire management activities completed				4
3	> 50 % of forest fire management activities completed				3
4	> 25 % of forest fire management activities completed				2
5	< 25 % of forest fire management activities completed				1
6	Post fire management not initiated				0

3.11.1.9. Form 9: Waste Management

Criteria 3: Maintenance of Forest Ecosystem Health and Vitality						
Indicator 3.4: Waste Management						
Standard: No waste observed in the sites and the number of waste management programs implemented						
Month	Waste Management Program Conducted (Yes/No)	No. of Local Community Engaged	Waste Collection Conducted (Yes/No)	Quantity Collected (Kg)	Evidence of Waste During Field Visit (Yes/No)	Recommendation/Remarks
Total						
Score						
Note: Yes = 1, No = 0. This indicator refers to the waste management in FMU						
Guidance						
i) Observe for any evidence of waste during the site visit in all sites and record the presence and absence of waste ii) Compute the percent of sites with waste and score using the scoring scale under 'Physical Observation' iii) List out the waste management awareness programs or any programs designed to advocate environmental education iv) Review the awareness programs report and score using scoring scale under 'number of awareness programs'.						
Data Source						
Annual Monitoring report, mid-term evaluation report, community awareness programs report, waste collection report site visit.						
Scoring Scale						
Sl. No	Physical observation at sites			Number of awareness programs		
	Site Observation	Score	Mid-term evaluation	Final evaluation	Score	
1	No evidence of waste observed in all sites	5	> = 60	> = 100	5	
2	No evidence of waste observed in > 75% sites	4	>50	>80	4	
3	No evidence of waste observed in > 50 % of sites	3	> 35	> 60	3	
4	No evidence of waste observed in > 25% of sites	2	>25	>40	2	
5	No evidence of waste observed in <25% of sites	1	>=5	>=10	1	
6	Waste observed in all sites	0	None	None	0	

3.11.1.10. Form 10: FMU Area with Significant Soil Erosion and Threats to Stream or Spring

Criteria 4: Conservation and Maintenance of Soil and Water Resources				
Indicator 4.1: FMU Area with Significant Soil Erosion and Threats to Stream or Spring				
Standard: Assess the condition of road, stream crossing, cable corridor and interlines.				
Assessment parameter	Condition	Summary from Self-Monitoring Form (4-8)	Physical observation/measurement (Yes/No)	Recommendation /Remarks
Road Culverts	All road culverts Not blocked (Yes/No)			
	Average Road Gradient less than 4% (Yes/No)			
Erosion protection	All culverts inlet & outlet protected against erosion (Yes/No)			
Road drains	Side drains for all road (Yes/ No)			
	All roadside drains Not blocked (Yes/ No)			
Road camber	Road surface cambered (Yes/No)			
Batter	Batter slopes stable (Yes/No)			
Fill	Fill slopes stable (Yes/No)			
Stream Crossings	All stream crossing with culvert or bridge or concrete ford? (Yes/No)			
Cable lines	All streams in cut strip have buffer? (Yes)			
	Are all the buffers free of lops/tops and stumps? (Yes/No)			
	Is the maximum slope in the strip less than 100%? (Yes/No)			
	Is the strip free of channels caused by manual extraction of timber? (Yes/No)			
Interlines	No felling damaged inside interlines (Yes/No)			
	No felling of trees inside interlines (Yes/No)			
	No lopping of fodders trees inside interlines (Yes/No)			
No. of 'Yes'				
No. of 'No'				
Score				
Note: The conditions and statement listed above can influence the soil erosion and pose risk to stream/springs				

in the FMU.				
Guidance				
<p>i) Refer and compile summary of self-monitoring from self-monitoring form 4-8 and other records</p> <p>ii) Conduct field visit and record observation and take measurement as follows:</p> <p>a) Road Culverts: Drive along all the roads in the FMU. Select the worst 2 or 3 km for sampling. Then walk the road, pace the distance between culverts and measure the average road gradient. Also assess, for each culvert, the condition of inlet and outlet and whether they are clear. Use extra sheets as needed.</p> <p>b) Erosion protection</p> <p>c) Road drains/Camber/Batter/Fill: Every 50 meters along the road, assess side drain depths, blockages, road camber, and stability of batter and fill slopes over the whole 50 metre distance. Cover the distance assessed on Form 1</p> <p>d) Stream crossings: When the road crosses a perennial stream, check that a culvert, bridge or concrete ford has been installed to carry the stream. Also, that there are culverts within 50m to prevent road drainage from entering the stream. The culvert cross-sectional area or space under a bridge needs to be about 1.5 times the cross-section of the stream channel*. Assess at least five streams</p> <p>e) Cable lines: Walk along the centre of completed (i.e., utilized) cable lines and measure the following in sample sections of 100m. Assess at least half of the length harvested for the year (could be from several lines)</p> <p>f) Interlines: Walk along the centre of the interline space between cable lines and assess the following in sample sections of 100m (could be from several lines). Assess at least half of the length harvested for the year (could be from several lines)</p> <p>iii) Based on yes or no answers in the table, score the indicator using the scoring scale below</p>				
Data Source				
Self-monitoring form (4-8), Annual Monitoring Report, Evaluation Report, field visit for observation and measurement				
Scoring Scale				
Sl. No	Risk to Soil Erosion and Stream/Spring	Percent of 'Yes'	Score	
1	Very low	> 80 %	5	
2	Low	>60 %	4	
3	Moderate	>40	3	
4	Severe	>20	2	
5	Very severe	<20	1	
6	Extremely severe	None	0	

3.11.1.11. Form 11: The Forest Area Managed to Protect Cultural, Social and Spiritual Values

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits							
Criteria 5.1: The Forest Area Managed to Protect Cultural, Social, Spiritual Values							
Standard: The cultural, social, spiritual values/site inside FMU protected and conserved							
Sl. No	Name of Cultural, Social or Spiritual Site	Buffer (m)	Mapping? (Yes/No)	Disturbance Inside Buffer			Recommendation /Remarks
				Felling (Yes/No)	Road (Yes/No)	Soil erosion	
Score							
Note: This indicator refers to the conservation of cultural, social and spiritual values or sites							
Guidance							
i) Refer management plan and check the list of cultural, social and spiritual sites ii) Consult the local stakeholders/local government about any potential cultural, social or spiritual sites iii) Verify whether these sites are mapped, and appropriate buffers are maintained in accordance with laws, policies and code. iv) Felling and developmental activities are not expected within buffer area. However, if there are any felling as part of silvicultural treatment (e.g. Thinning, sanitation) and construction of forest roads, it should be reported v) Score the indicator based on the status of these sites (mapping, conservation, buffer, etc.) using scoring table below							
Data source							
Management plan, annual monitoring report, operational plan, field visits, etc.							
Scoring Scale							
Sl. No	Conservation/Protection of Cultural, Social, and Spiritual Values/Sites					Score	
1	All cultural, social and spiritual sites/values identified, mapped, buffer maintained, and conservation ensured					5	
2	All cultural, social and spiritual sites/values identified, mapped, buffers maintained with significant disturbance (felling, roads, etc.,)					4	
3	All cultural, social and spiritual sites/values identified, mapped with no buffer					3	
4	All cultural, social and spiritual sites/values identified but not mapped					2	
5	Some of cultural, social and spiritual sites/values identified and mapped					1	
6	Neither identified nor mapped					0	

3.11.1.12. Form 12: Extent of Community Participation in Forest Management

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits

Indicator 5.2: Extent of Local Community Participation in Forest Management

Standard: Involve local communities and other stakeholders in FMU management, planning, and implementation of plan activities

a) Meetings. Consultations, workshops

Month	Type of Meeting	Date of Meeting	No. of Participant				Total	Remarks
			Stakeholders		NRDCL & DoFPS			
			Male	Female	Male	Female		
No. of meetings		Total						
Score								

b) Employment

Sl. No	Name of Activity	Year	No. of People Engaged			Remarks
			Male	Female	Total	
Total						
Score						

Total Score

Note: This indicator refers to the involvement of the communities in the FMU management activities such as road construction, logging, plantation and management planning and other operations. Includes all the activities that involved community participation, and any form of employment provided to them

Guidance

- i) Assess this indicator on two parameters (community meeting/consultation and employment)
- ii) Determine total no of meetings conducted during the period, number of participants, purpose of meeting, etc.
- iii) Determine total number of people, apart from regular staff of NRDCL and DoFPS, employed during the period in the FMU.
- iv) Based on the number of meetings and number of people employed, score the indicator using scoring scale below

Data Source						
Annual Monitoring report, Operational Plan, Annual Budget Allocation, Minutes of meeting, list of participants, record of payment, ledger, plantation journal, mid-term evaluation report						
a) Meeting/ Consultation, Workshops			b) Employment			
Sl. No	Meeting/ Consultation	Score	Sl. No	Annual Monitoring		Score
	Annual Monitoring			Employment with Plantation	Employment without Plantation	
1	2	2	1	>=30	>=15	3
2	1	1	2	>=20	>=10	2
3	None	0	3	>=10	>=5	1
			4	None	None	0

Score					
Total Score					
Note: Include all types of HWC.					
Guidance					
i) Verify detection and reporting of any HWC cases in the FMU from FIRMS, SMART and other sources ii) Ask local communities and their representative about HWC incidences iii) List out the HWC interventions. iv) This indicator is scored on two reporting of HWC and intervention/mitigation measures implemented. Use scoring scale below to score this indicator					
Data Source					
FMU management plan, Annual monitoring report, HWC report – SMART, FIRMS data, consultation with stakeholders					
Scoring Scale					
Detection and Reporting			Intervention/Mitigation		
Sl. No	Reporting of HWC	Score	Sl. No	Interventions	Score
1	HWC recorded and reported	2	1	Interventions for all types of HWC	3
2	HWC recorded but not reported	1	2	More than 50%	2
			3	Less than 50%	1
			4	None	0

3.11.1.15. Form 15: FMU Sign and Signages

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits									
Indicator 5.5: FMU Sign and Signage									
Standard: All operated cable lines and plantation sites shall have standard sign boards									
Month	No. of Cable Lines Operated Since First Management	No. of Cable Lines with Signage	% of Cable Lines with Signage	No. of Plantation Sites	No. of Plantation Sites with Signage	% of Plantation Sites with Signage	Signages As Per Standard (Yes/No)	Recommendation/ Remarks	
Total									
Score									
Note: All cable lines and plantation sites shall be included									
Guidance									
i) Check the number of operated cable lines all plans and number of cable lines with signages ii) Check the plantation all plantation sites and number of plantation sites with signages iii) Verify whether all signages are as per the prescribed standard or contains minimum required information iv) Determine the % of cable line and plantation sites with signage and score using the table below									
Data Source									
Management plan, operational plan, annual monitoring report, mid-term evaluation report, etc.									
Scoring Scale									
Sl. No	% of Signage		Score						
1	80-100		5						
2	60-80		4						
3	40-60		3						
4	20-40		2						
5	01-20		1						
6	0		0						

3.11.1.16. Form 16: Achievement on OP Target

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits					
Indicator 5.6. Achievement on OP Target					
Standard: At least 90% of OP or planned target/ annual activities in the FMU achieved					
Sl. No	Activity	Unit	Target	Progress/ Status	Percent Achievement
1	Commercial AAC	M ³			
2	Rural AAC	M ³			
3	Plantation survival assessment	Cable lines (No +Area)			
4	Creation of plantation	ha			
5	Plantation maintenance	ha			
6	Operational Inventory	ha			
7	Cable line survey	No			
	a) Sanitation operation	M ³			
	b) Sanitation operation	ha			
8	Annual FMU monitoring	No			
9	Road construction	Km			
10	Road maintenance	Km			
11	Nursery creation (seedling productions)	No			
12	Seed collection	Kg			
13	Nursery Maintenance (management of old seedling stock)	No			
14	Annual FMU level Committee meeting	No			
15	Supply of NWFPs (specify name of NWFPs)	Kg			
		No			
		Truckload			
		Headload			
16	Development of sign boards	No			
17	Depot maintenance	No + Area			
18	Maintenance of vehicle and machineries	No			
19	Maintenance of infrastructure	No			
20	Maintenance of nature/ birding trail if relevant	Meter			
21	Road survey	Km			
22	Natural regeneration survey	No			
23	Plantation monitoring *	No			
24	Self-Monitoring	Yes/No			
25	Flora survey/Monitoring	Yes/No			

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26	Fauna survey / Monitoring	Yes/No			
Score					
Note: List of the of the activities is not exhaustive. Additional activities implemented should be added					
Guidance					
i) Review the achievement against each planned activities in the OP ii) Review and synthesize the progress iii) Compute the progress percentage for each activity separately iv) Average the achievement percent and score the indicator using the scoring scale below					
Data Source					
Monthly progress report, self-monitoring forms,					
Scoring Scale					
Sl. No	% Achieved	Score	Sl. No	% Achieved	Score
1	>90	10	7	>30	4
2	> 80	9	8	>20	3
3	.>70	8	9	>=10	2
4	>60	7	10	<10	1
5	>50	6	11	<1	0
6	>40	5	5		

3.11.1.17. Form 17: Summary Form

Annual Monitoring Summary Form 17				
Instructions: Outcome and the scores of the annual monitoring indicator should be summarized in the FMU annual monitoring summary form. All applicable and relevant indicators should be assessed and scored. The none-relevant indicator shall be recorded as ‘NA’. The assignment of NA shall be described in the monitoring report.				
Criteria	Annual Monitoring	Total Score	Monitoring Score	Performance Percent
1. Maintenance of productive capacity of forest ecosystems	1.1 Annual Commercial timber volume removed compared with AAC	10		
	1.2 Annual Rural Timber Volume Removed Compared with AAC	10		
	1.3 Annual demand and supply of NWFP	10		
	1.4 Percent of clear-cut area regenerated through plantation and survived/established	15		
2. Conservation of biological diversity	2.1 Status of natural regeneration (NR)	10		

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3. Maintenance of forest ecosystem health and vitality	3.1 Forest Pest and disease and management	5		
	3.2 Forest fire incident and response/damage assessment	5		
	3.3 Post fire management	5		
	3.4 Waste management	10		
4. Conservation and maintenance of soil and water resources	4.1 FMU area with significant soil erosion and threats to stream or spring	5		
5. Maintenance and enhancement of long-term multiple socio-economic benefits	5.1 The forest area managed to protect cultural, social, spiritual values	5		
	5.2 Extent of community participation in forest management	10		
	5.3 Human-wildlife incidents and its interventions in FMU	5		
	5.4 Disposal of the timber extracted from FMU	10		
6. Maintenance and enhancement of long-term multiple socio-economic benefits	5.5 FMU Sign and Signages	5		
	5.6 Achievement on OP Target	10		

3.11.2. FMU Annual Monitoring Report Format

1. Executive Summary: Summary of the monitoring findings & Overview of key observations and trends.

2. Introduction: Purpose of the monitoring exercise & Scope of the monitoring period and activities covered.

3. Monitoring Objectives: Specific objectives set for the monitoring period. & Expected outcomes from the monitoring activities.

4. Methodology: Description of the monitoring tools and methods used., Data collection techniques and sources, Frequency and timeline of monitoring activities, Field visits

5. Detailed Analysis by Criteria and Indicators, issues and recommendation, responsible agencies

5.1 Maintenance of Productive Capacity

- Assessment of each indicator and findings, issues, recommendations, responsible agencies

5.2 Conservation of Biological Diversity

- Assessment of each indicator and findings, issues, recommendations, responsible agencies

5.3 Ecosystem Health and Vitality

- Assessment of each indicator and findings, issues, recommendations, responsible agencies

5.4 Soil and Water Resources

- Assessment of each indicator and findings, issues, recommendations, responsible agencies

5.5 Socio-Economic Benefits

- Assessment of each indicator and findings, issues, recommendations, responsible agencies

Table 3.15: Performance Assessment and Rating

Sl. No	Criteria	Indicator	Total Score	Score	Score %
1					
2					
3					
4					
5					
6					
7					
8					

6. Other issues and challenges not covered by above indicators

- Identification of any challenges encountered during monitoring.
- Impact of challenges on the monitoring process.

7. Annexes

- Monitoring forms

3.12. Evaluation

For the purpose of mid-term and final evaluation, 6 criteria and 33 indicators have been adapted from the MP C&I and 25 forms have been developed for selected indicators. The criteria and indicators are the same as in case with the annual monitoring indicators with a few additional indicators. However, indicator from xxv – xxxiii shall not be evaluated but presence and absence shall be recorded.

1. Annual Commercial timber volume removed compared with AAC
2. Annual Rural Timber Volume Removed Compared with AAC
3. Annual demand and supply of NWFP
4. Percent of clear-cut area regenerated through plantation and survived/established
5. Change in forest area inside production working circle
6. Change in forest area inside FMU (Overall Forest Area)
7. Status of natural regeneration (NR)
8. List of forest dwelling key flora species. Indicators only
9. List of forest dwelling key fauna species. Indicators only
10. Protection WC connects within FMU and external PA or other forest
11. Forest Pest and disease and management
12. Forest fire incident and response/damage assessment
13. Post fire management
14. Waste management
15. Change in forest area inside protection working circle
16. FMU area with significant soil erosion and threats to stream or spring
17. The forest area managed to protect cultural, social, spiritual values
18. Extent of community participation in forest management
19. Human-wildlife incidents and its interventions in FMU
20. Disposal of the timber extracted from FMU
21. Revenue generated through sale of forest produce by commercial operation
22. Forest Road Constructed as per forest management plan
23. Forest Road maintained as per plan
24. FMU Sign and Signages
25. Legislation and policies supporting the sustainable management of forests
26. Cross sectoral policy and programmed coordination
27. Clarity and security of land and resource tenure and property rights
28. Enforcement of laws related to forests

29. Programmes, services and other resources supporting the sustainable management of forests
30. Development and application of research and technologies for the sustainable management of forests
31. Partnerships to promote the sustainable management of forests
32. Public participation and conflict resolution in forest- related decision making
33. Monitoring, assessment, and reporting on progress towards sustainable management of forests

3.12.1. Evaluation Forms

3.12.1.1. Form 1: Annual Commercial Timber Volume Removed Compared with AAC

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems					
Indicator 1.1. Annual Commercial Timber Volume Removed Compared with AAC					
Standard: Cumulative commercial timber removal ($\pm 10\%$) based on MP					
Sl.No	Year	AAC as per MP (m ³)	Achievement (m ³)	Achievement (%)	Recommendation/Remarks
1					
2					
3					
4					
5					
6					
7					
8					
Total					
Score					
Note: AAC is annual allowable cut and OP is operational plan					
Guidance					
This indicator shall be scored based on achievement of the planned approved AAC in the management plan. The indicator shall be scored based on percentage under cut or overcut which is determined by: $\% \text{ Achievement} = \text{Total Achievement} / \text{AAC (MP)} \times 100$ Determine Over cut or under cut as = $100 - \% \text{ Achievement (positive \& negative values are undercut \& overcut respectively)}$ For scoring use absolute values					
Data Source: Monthly and annual record keeping Form I, II, VI and VII, Record of illegal timber extraction, sanitation operation, Annual Monitoring reports, Annual record keeping Form VI and VII, Approved OP, Mid-term evaluation report is applicable					
Scoring scale					
Sl. No	Undercut%	Score	Overcut%	Score	
1	90-100	1	1-10	9	
2	80-90	2	> 10	0	
3	70-80	3			
4	60-70	4			
5	50-60	5			
6	40-50	6			
7	30-40	7			
8	20-30	8			
9	10-20	9			
11	0-10	10			

3.12.1.2. Form 2: Annual Rural Timber Volume Removed Compared with AAC

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems					
Indicator 1.2: Annual Rural Timber Volume Removed Compared with AAC					
<i>Standard:</i> Cumulative rural timber removal ($\pm 10\%$) based on MP					
Sl. No	Year	AAC as per MP (m ³)	Achievement (m ³)	Achievement (%)	Recommendation / remarks
1					
2					
3					
4					
5					
6					
7					
8					
9					
	Total				
	Score				
Note: AAC is annual allowable cut OP is operational plan					
Guidance					
This indicator shall be scored based on achievement of the planned approved AAC in management plan. The indicator shall be scored based on percentage under cut or overcut which is determined by: $\% \text{ Achievement} = \text{Total Achievement} / \text{AAC (MP)} \times 100$ Determine Over cut or under cut as = $100 - \% \text{ Achievement (positive \& negative values are undercut \& overcut respectively)}$ For scoring use absolute values					
Data Source: Monthly and annual record keeping Form III, IV and VIII, Record of illegal timber extraction, sanitation operations, Annual Monitoring reports, Annual record keeping Form VIII, Approved OP, Record of illegal timber extraction, sanitation operations-evaluation report if applicable					
Scoring scale					
Sl. No	Undercut%	Score	Overcut%	Score	
1	90-100	1	1-10	9	
2	80-90	2	> 10	0	
3	70-80	3			
4	60-70	4			
5	50-60	5			
6	40-50	6			
7	30-40	7			
8	20-30	8			
9	10-20	9			
10	0-10	10			

3.12.1.3. Form 3: Annual Demand and Supply of NWFP

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems							
Indicator 1. 3. Annual Demand and Supply of NWFP							
Standard 1: Cumulative annual removal ±10% of AAC (If AAC is prescribed)							
Standard 2: NWFP % based on demand and supply and resource availability (AAC is not prescribed)							
NWFP Name							
Year	Year of Operation	Unit	AAC	Demand	Supply	Percent Achieved	Recommendation/ Remarks
Total							
Score							
Note: AAC is annual allowable cut; OP is operational plan							
Guidance							
<p>This indicator shall be scored based on achievement of the planned and approved AAC in the operational plan if AAC is prescribed in management plan or NWFP management groups. The indicator shall be scored based on percentage under and over harvest determined by:</p> <p style="text-align: center;">% Achievement = Total achievement / AAC (MP) x 100</p> <p>Determine Over harvest or underharvest = 100 - % Achievement (<i>positive & negative values are undercut & overcut respectively</i>)</p> <p>For scoring use absolute values</p> <p>If AAC is not prescribed, use % of demand for NWFP met from the FMU</p> <p style="text-align: center;">% demand = Supply / Demand x 100</p>							
Data Source:							
Monthly and annual recording keeping form V and IX prescribed in the code., Annual monitoring reports, Demand assessment reports, Annual OP, Evaluation report							
Scoring Scale							
Sl. No	If AAC is Prescribed MP or NWFP Management Group				If AAC is Not Prescribed		
	Under Harvest %	Score	Over Harvest %	Score	% of Demand Met	Score	
1	90-100	1	1-10	9	90-100	10	
2	80-90	2	> 10	0	80-90	9	
3	70-80	3			70-80	8	
4	60-70	4			60-70	7	
5	50-60	5			50-60	6	
6	40-50	6			40-50	5	
7	30-40	7			30-40	4	
8	20-30	8			20-30	3	
9	10-20	9			10-20	2	
10	1-10	10			1-10	1	
11	<1	0			<1	0	

3.12.1.4. Form 4: Percent of Clear-Cut Area Regenerated through Plantation, Survivability and Establishment

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems							
Indicator 1.4 Percent of Clear-Cut Area Regenerated Through Plantation, Survivability and Establishment							
Standard: More than 80% of clear-cut area excluding roads shall be replanted and plantation are successful							
Year	Cable Line No.	Survey Year	Corridor or Area (ha)	Opening Area (ha)	Area Planted (ha)	Survival %	Recommendation/ Remarks
Total / Average							
Score							
Note: Cable line wise clear-cut area, area replanted and average survival percent of plantations along each cable lines shall be compiled using table below. The clear-cut area shall include all the areas under current year of operation while plantation area shall be reported for all area operated in previous operation year. The area under plantation and survival percent shall be verified from the annual plantation monitoring report. Measure the cable width of 10% of operated cable lines and area of all 20% of group/patch openings.							
Guidance This indicator shall be scored based on the percentage of clear-cut area reforested through plantation and average survival percent of the plantation sites at all sites. Both the scoring is mandatory for all FMU for which plantation is prescribed in management plan and/ or recommended in annual monitoring or evaluation reports.							
Data Source Annual Operational Plan (OP), Annual monitoring report (AMR), Regeneration survey report, Site wise plantation monitoring/evaluation report, evaluation report if applicable, Plantation monitoring report, Plantation journal, evaluation report							
Scoring Scale							
Clear Cut Area Planted			Survival Percent				
Sl. No	% of Area Planted	Score	Sl. No	Survival Percent (%)	Score		
1	80-100	5	1	>=90	10		
2	60-80	4	2	80-90	9		
3	40-60	3	3	70-80	8		
4	20-40	2	4	60-70	7		
5	01-20	1	5	50-60	6		
6	< 1	0	6	40-50	5		
			7	30-40	4		
			8	20-30	3		

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	9	10-20	2
	10	0-10	1

3.12.1.6. Form 6: Change in Forest Area Inside FMU (Overall Forest Area)

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems								
Indicator 1.6: Change in Forest Area Inside FMU (Overall Forest Area)								
Change in forest area Inside FMU (Overall Forest Area)								
Standard: No decrease in forest area since the establishment of FMU								
Year	FMU Area (A)	Forest Area In MP (B)	Forest Area Loss (GIS) (C)	Afforestation Area (D)	Forest Area Loss to Forestry Clearance (SRFL) (E)	Fc For Private Land (F)	Change (I) (B-C)	Change (II) [(B+D)-(E+F)]
Total								
Score								
Note: This indicator refers to change in the forest area inside FMU								
Guidance								
i) Record the forest area from management plan (A) ii) Layout FMU boundary map in QGIS, ArcGIS iii) Overlay the shapefiles of updated map and estimate the forest area inside FMU (B) iv) Compute the change in forest area (B-C) and score using scoring scale below. if there is increase in area, the default score is 10 and describe in the report								
Data source: Land cover map/forest type map used for management plan preparation, Management plan and function maps, updated land cover/forest type map, Record forestry clearance issued by concerned CFO or Unit In-charge, Record of removal of forest produce from private land, FIRMS and OFS report, Forest clearances								
Scoring Scale								
Sl. No	Change in Forest Area (ha)	Score	Sl. No	Change in Forest Area (ha)	Score			
1	0-10	10	7	60-70	4			
2	10-20	9	8	70-80	3			
3	20-30	8	9	80-90	2			
4	30-40	7	10	90-100	1			
5	40-50	6	11	>=100	0			
6	50-60	5						

3.12.1.7. Form 7: Status of Natural Regeneration (NR)

Criteria 2: Conservation of Biological Diversity				
Indicator 2.1: Status of Natural Regeneration (NR)				
Standard: Natural regeneration is adequate and where necessary assisted/promoted				
Summary of NR Survey Report				
Cable Line No.	Year of Operation	NR Survey Year	Average Seedling	Recommendation/Remarks
Average Score				
Facilitating Natural Regeneration (List of Activities Implemented to Promote NR)				
Survey Year	Total Cable Lines Operated	Types of Intervention	Cable Line No.	Year of Operation of Cable Line
Total Activities Score				
Total Score				
Note: This indicator is applicable if natural regeneration is recommended in MP				
Guidance				
i) Review the annual natural regeneration survey reports and compile the information ii) Review and list any activities implemented in FMU to facilitate NR (if not adequate from survey report iii) Compile the NR report of at least last three years iv) Score the indicator based on NR status and activities implemented to facilitate NR (soil disturbance/scarification, bush clearing, grazing management; NR survey/monitoring; seed broadcasting; etc). v) Define of NR status area a) Adequate: if regeneration is more than 2,000 per ha, b) Doubtful: If regeneration is 1,000-2,000 per ha and, c) Poor: If regeneration is below 1,000 per ha				
Data Source				
Natural regeneration survey report, Annual Monitoring report. Evaluation reports, field work based on time availability				
Scoring scale				
Sl. No	Status of NR	Score	No. of Activities Promoting NR	Score
1	Adequate	5	> 3 activities	5
2	Doubtful	3	> 2 activities	3
3	Poor	1	> =1 activity	2
			< 1activity	0
			NR adequate	5

3.12.1.8. Form 8: List of Forest Dwelling Key Flora Species. Indicators Only

Criteria 2: Conservation of Biological Diversity										
Indicator 2.2: List of Forest Dwelling Key Flora Species. Indicators Only										
Standard: No significant decrease in key flora species from FMU start										
List of Flora for each Year										
MP	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Total										
Percentage Change										
Score										
Note: This indicator refers to the change (decrease) in species richness or alpha diversity of flora. List main canopy species and important understorey species										
Guidance										
i) Prepare the list of flora species from management plan (A) ii) Obtain the flora survey report for each year and prepare the list iii) Estimate the alpha diversity or species richness i.e. number of unique species recorded in each survey (B) iv) Compare the number of unique species from the latest survey with list in the management plan. v) Compute the percent decrease as $((A - B)/A \times 100)$ and score the indicator using scoring scale below. vi) If there is an increase in diversity, confirm that the species added is not invasive in nature or imported but a new discovery. Then the default score is 5 and describe in the report										
Data Source										
Flora survey report, self-monitoring form, annual monitoring report, evaluation report, physical observation										
Scoring Scale										
Sl. No	% Change	Score								
1	0-20	5								
2	20-40	4								
3	40-60	3								
4	60-80	2								
5	80-100	1								

3.12.1.10. Form 10: Protection WC Connects Within FMU and External PA or Other Forest

Criteria 2: Conservation of Biological Diversity			
Indicator 2.4. Protection WC Connects Within FMU and External PA or Other Forest			
Standard: Protection working shall connect with other protected areas or FMU shall not result in forest fragmentation.			
Sl. No	Particulars	Observation (Yes/No)	Recommendation
1	Is there protected area sharing border with FMU? (Yes/No)		
2	Is the protected area connected with protection working circle of FMU? (Yes/No)		
3	Protection working circle is not disturbed. (Yes/No)		
4	FMU shares boundary with adjoining forest?		
5	FMU did not contribute to forest fragmentation? Yes/No		
Score			
Note: This indicator refers to the connectivity of the protection working circle			
Guidance			
i) Overlay the protection function map of the FMU with Protected area maps of Bhutan or forest map of Bhutan ii) Observe and record if there is any connection between protection working circle with PA iii) Observe if there is any disturbance in the protection WC of FMU (extraction, road construction, etc.) iv) Observe whether FMU is connected with adjoining forest area and any potential forest fragmentation v) Compare the situation at the time of evaluation and FMU establishment and score the indicator using scoring scale below			
Data Source			
Management plan, function maps, old and new forest type map, protected area map, etc.			
Scoring Scale			
Sl. No	Indicators	Score	
1	No change in connectivity of protection WC within FMU, with external PAN/Forest and no forest fragmentation	3	
2	Disturbed the connectivity within FMU	2	
3	Connectivity disturbed both within and with external PAN and forest	1	

3.12.1.11. Form 11: Forest Pest & Disease and Its Management

Criteria 3: Maintenance of Forest Ecosystem Health and Vitality							
Indicator 3.1: Forest Pest & Disease and Its Management							
Standard: Pest and disease infestation detected, reported, and managed and no increase in area affected by pest and diseases							
Pest and Disease Incidence (Yes/No)		If yes, complete the table below. Refer self-monitoring form 3 and conduct physical observation during monitoring (observe for any dead and dying forest in patches)					
Year	Detection (Yes/No)	Damage Assessment (Yes/No)	Area Affected (A) (ha)	Mapping (Yes/No)	Current Area (B)	% Change in area ((B-A)/Ax100)	Recommendation/ Remarks
Total							
Score							
Note: This indicator refers to detection, report and management of pest and diseases in the FMU area which negatively impact biodiversity, productivity, etc.							
Guidance							
i) Determine the detection of pests and diseases and review the damage assessment report (map, volume, prescription) ii) Determine initial area of forest affected by pest and disease (at the time of detection) and area at the time of monitoring/evaluation iii) Compare the initial reported area with most recent area affected by pest and disease and score the indicator based on reporting and percentage increase in area affected by pest and diseases since first detection using scoring scale below							
Data Source							
Annual Monitoring report, evaluation report, self-monitoring form -3, physical observation, maps, etc.							
Scoring Scale							
Detection and Reporting			Spread of Pest and Disease				
Sl. No	Incident's report	Score	Sl. No	Percentage Increase in Area Affected by Pest and Disease	Score		
1	Incidents monitored and reported timely	2	1	1-20%	8		
			2	20-40%	6		
2	Incidents reported late	1	3	40-60%	4		
			4	60-80%	2		
3	Incidents not reported	0	5	80-100%	1		
			6	>100%	0		

3.12.1.12. Form 12: Forest Fire Incidence, Response and Damage Assessment

Criteria 3. Maintenance of Forest Ecosystem Health and Vitality								
Indicator 3.2: Forest Fire Incidence, Response and Damage Assessment								
Standard: Damage assessment of all forest fire incidences conducted and recommend site specific interventions.								
Year	Fire Incidence (Y/N)	Reporting (Y/N)	Damage Assessment (Y/N)	Area Affected (ha)	Mapping (Y/N)	Post Fire Management Required (Y/N)	Post Fire Management Activities Recommended	Recommendation / Remarks
Total								
Score								
Note: This indicator is relevant only if there is fire incidence in the FMU area								
Guidance								
i) Review, observe and inquire about any fire incidence in the FMU and check whether all incidences are documented and reported ii) If the fire occurred in the FMU, check the forest damage assessment report iii) Check the status of the forest damaged assessment report iv) Based on status of incidence, reporting and damage assessment, score the indicator using the scoring table below.								
Data Source								
Annual Monitoring report, mid-term evaluation report, site visit, FIRMS data, SMART data, etc.								
Scoring scale								
Sl. No	Forest Fire Incidence, Reporting and Damage Assessment					Score		
1	Damaged assessment for all forest fire incidences conducted and reported					5		
2	Damaged assessment for > 75% forest fire incidences conducted and reported.					4		
3	Damaged assessment for > 50 % forest fire incidences conducted and reported.					3		
4	Damaged assessment for > 25 % forest fire incidences conducted and reported.					2		
5	Damaged assessment for <25% forest fire incidences conducted and reported.					1		
6	Forest fire incidence reported but no damage assessment carried					0		

3.12.1.13. Form 13: Post Fire Management

Criteria 3: Maintenance of Forest Ecosystem Health and Vitality					
Indicator 3.3: Post Fire Management					
Standard: Post fire management activities fully implemented					
Year	Area Affected by Fire (ha)	Estimated Volume of Timber (m ³)	Volume of Timber Extracted (m ³)	Area Replanted (ha)	Recommendation / Remarks
Total					
Score					
Note: This indicator is relevant only if there is fire incidence in the FMU and forest fire management is recommended in fire damaged report					
Guidance					
i) Review the forest fire damage assessment report and list out the post fire management activities recommended and recommendation from annual monitoring reports and evaluation report ii) Review the status of implementation of post fire management activities (e.g., removal of timber, plantation, etc.) iii) Compute the extent of completion of implementation of post fire management in terms of volume and area if timber removal is recommended and area brought under plantation if plantation is recommended iv) Score the indicator using the scoring scale below based on status of progress of implementation of post fire management activities					
Data Source					
Annual Monitoring report, mid-term evaluation report, activity implementation and completion report					
Scoring Scale					
Sl. No	Action Taken				Score
1	Extraction of timber and/or reforestation completed within 1 year				5
2	> 75 % of forest fire management activities completed				4
3	> 50 % of forest fire management activities completed				3
4	> 25 % of forest fire management activities completed				2
5	< 25 % of forest fire management activities completed				1
6	Post fire management not initiated				0

3.12.1.14. Form 14: Waste Management

Criteria 3: Maintenance of Forest Ecosystem Health and Vitality						
Indicator 3.4: Waste Management						
Standard: No waste observed in the sites and number of waste management programs implemented						
Year	Waste Management Program Conducted (Yes/No)	No. of Local Community Engaged	Waste Collection Conducted (Yes/No)	Amount Collected (Kg)	Evidence of Waste During Field Visit (Yes/No)	Recommendation/Remarks
Total						
Score						
Note: Yes = 1, No = 0. This indicator refers to the waste management in FMU						
Guidance						
i) Observe for any evidence of waste during the site visit in all sites and record the presence and absence of waste ii) Compute the percent of sites with waste and score using the scoring scale under 'Physical Observation' iii) List out the waste management awareness programs or any programs designed to advocate environmental education iv) Review the awareness programs report and score using scoring scale under 'number of awareness programs'						
Data Source						
Annual Monitoring report, mid-term evaluation report, community awareness programs report, waste collection report, site visit						
Scoring Scale						
Sl. No	Physical Observation at Sites			Number of Awareness Programs		
	Site Observation	Score	Mid-term Evaluation	Final Evaluation	Score	
1	No evidence of waste observed in all sites	5	> = 60	> = 100	5	
2	No evidence of waste observed in > 75% sites	4	>50	>80	4	
3	No evidence of waste observed in > 50 % of sites	3	> 35	> 60	3	
4	No evidence of waste observed in > 25% of sites	2	>25	>40	2	
5	No evidence of waste observed in <25% of sites	1	>=5	>=10	1	
6	Waste observed in all sites	0	None	None	0	

3.12.1.15. Form 15: Change in Forest Area Inside Protection Working Circle

Criteria 4: Conservation and Maintenance of Soil and Water Resources							
Indicator 4.1: Change in Forest Area Inside Protection Working Circle							
Standard: No decrease in forest area mapped for protection since the establishment of FMU inside the protection working circle							
Year	Forest Area Under Protection WC as Per Plan (A)	Forest Area Lost (GIS Map) (B)	Protection Forest Loss to Cable Lines (C)	Protection Forest Loss to Road (D)	Protection Forest Loss to Other Development Activities (E)	Forest Area Loss (I)= A-B	Forest Area Loss (II) = A-(C+D+E)
Total							
Percent Change							
Score							
Note: This indicator refers to change in the protection area inside FMU							
Guidance							
i) Record the protection area from management plan (A) ii) Layout a protection working circle on any GIS platform such as QGIS, ArcGIS iii) Overlay the shapefiles of roads and any other developmental activities including areas allotted through FC including Forest Road iv) Verify if there is any overlap in the area. If there is any overlap, estimate the area of overlapping polygon (B) v) Overlapping area (B) is the protection area lost and score the indicator using the scoring scale below							
Data source:							
Land cover map/forest type map used for management plan preparation, Management plan and function maps, updated land cover/forest type map, Record forestry clearance issued by concerned CFO or Unit In-charge, Record of removal of forest produce from private land, FIRMS and OFS report, Forest clearances							
Scoring Scale							
Sl. No	Forest Area Loss Inside Protection WC (ha)	Score					
1	0-10	5					
2	10-20	4					
3	30-60	3					
4	60-90	2					
5	>90	1					

3.12.1.16. Form 16: FMU Area with Significant Soil Erosion and Threats to Stream or Spring

Criteria 4: Conservation and Maintenance of Soil and Water Resources				
Indicator 4.2: FMU Area with Significant Soil Erosion and Threats to Stream or Spring				
Standard: Assess the condition of the road, stream crossing, cable corridor and interlines.				
Assessment Parameter	Condition	Summary From Self-monitoring Form (4-8)	Physical Observation/Measurement (Yes/No)	Recommendation /Remarks
Road Culverts	All road culverts not blocked (Yes/No)			
	Average Road Gradient less than 4% (Yes/No)			
Erosion protection	All culverts inlet & outlet protected against erosion (Yes/No)			
Road drains	Side drains for all road (Yes/No)			
	All roadside drains Not blocked (Yes/ No)			
Road camber	Road surface cambered (Yes/No)			
Batter	Batter slopes stable (Yes/No)			
Fill	Fill slopes stable (Yes/No)			
Stream Crossings	All stream crossing with culvert or bridge or concrete ford? (Yes/No)			
Cable lines	All streams in cut strip have buffer? (Yes)			
	Are all the buffers free of lops/tops and stumps? (Yes/No)			
	Is the maximum slope in the strip less than 100%? (Yes/No)			
	Is the strip free of channels caused by manual extraction of timber? (Yes/No)			
Interlines	No felling damaged inside interlines (Yes/No)			
	No felling of trees inside interlines (Yes/No)			
	No lopping of fodders trees inside interlines (Yes/No)			
No. of 'Yes'				
No. of 'No'				
Score				
Note: The conditions and statement listed above can influence the soil erosion and pose risk to stream/springs in the FMU.				

Guidance

- i) Refer and compile summary of self-monitoring from self-monitoring form 4-8 and other records
- ii) Conduct field visit and record observation and take measurement as follows
 - a) Road Culverts: Drive along all the roads in the FMU. Select the worst 2 or 3 km for sampling. Then walk the road, pace the distance between culverts and measure average road gradient. Also assess, for each culvert, the condition of inlet and outlet and whether they are clear. Use extra sheets as needed.
 - b) Erosion protection
 - c) Road drains/Camber/Batter/Fill: Every 50 meters along the road, assess side drain depths, blockages, road camber, and stability of batter and fill slopes over the whole 50 meters distance. Cover the distance assessed on Form 1
 - d) Stream crossings: When the road crosses a perennial stream, check that a culvert, bridge or concrete ford has been installed to carry the stream. Also, there are culverts within 50m to prevent road drainage from entering the stream. The culvert cross-sectional area or space under a bridge needs to be about 1.5 times the cross-section of the stream channel*. Assess at least five streams
 - e) Cable lines: Walk along the center of completed (i.e., utilized) cable lines and measure the following in sample sections of 100m. Assess at least half of the length harvested for the year (could be from several lines)
 - f) Interlines: Walk along the center of the interline space between cable lines and assess the following in sample sections of 100m (could be from several lines). Assess at least half of the length harvested for the year (could be from several lines)
- iii) Based on Yes or No answers in the table, score the indicator using scoring scale below:

Data Source

Self-monitoring form (4-8), Annual Monitoring Report, Evaluation Report, field visit for observation and measurement

Scoring Scale

Sl. No	Risk to Soil Erosion and Stream/Spring	Percent of 'Yes'	Score
1	Very low	> 80 %	5
2	Low	>60 %	4
3	Moderate	>40	3
4	Severe	>20	2
5	Very severe	<20	1
6	Extremely severe	None	0

3.12.1.17. Form 17: The Forest Area Managed to Protect Cultural, Social, and Spiritual Values

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits`							
Indicator 5.1: The Forest Area Managed to Protect Cultural, Social, and Spiritual Values							
Standard: The cultural, social, spiritual values/site inside FMU are protected and conserved							
Sl. No	Name of Cultural, Social or Spiritual Site	Buffer (M)	Mapping? (Yes/No)	Disturbance Inside Buffer			Recommendation /Remarks
				Felling (Yes/No)	Road (Yes/No)	Soil Erosion	
Score							
Note: This indicator refers to the conservation of cultural, social and spiritual values or sites							
Guidance							
i) Refer management plan and check the list of cultural, social and spiritual sites ii) Consult the local stakeholders/local government about any potential cultural, social or spiritual sites iii) Verify whether these sites are mapped, and appropriate buffers are maintained in accordance with laws, policies and code. iv) Felling and developmental activities are not expected within buffer area. However, the felling of trees is carried out as part of silvicultural treatment (e.g. Thinning, sanitation) and construction of roads if any should be reported v) Score the indicator based on the status of these sites (mapping, conservation, buffer, etc) using scoring table below:							
Data source							
Management plan, annual monitoring report, operational plan, field visits, etc.							
Scoring Scale							
Sl. No	Conservation/Protection of Cultural, Social and Spiritual Values/Sites			Score			
1	All cultural, social and spiritual sites/values identified, mapped, buffer maintained, and conservation ensured			5			
2	All cultural, social and spiritual sites/values identified, mapped, buffers maintained with significant disturbance (felling, roads, etc.,)			4			
3	All cultural, social and spiritual sites/values identified, mapped with no buffer			3			
4	All cultural, social and spiritual sites/values identified but not mapped			2			
5	Some of cultural, social and spiritual sites/values identified and mapped			1			

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6	Neither identified nor mapped	0	
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3.12.1.18. Form 18: Extent of Local Community Participation in Forest Management

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits								
Indicator 5.2: Extent of Local Community Participation in Forest Management								
Standard: Involve local communities and other stakeholders in FMU management, planning, and implementation of plan activities								
a) Meetings, Consultations, Workshops								
Year	Type of Meeting	Date of Meeting	No. of Participant				Remarks	
			Stakeholders		NRDCL & DoFPS			Total
			Male	Female	Male	Female		
No. of meetings		Total						
Score 1								
b) Employment								
Year	Name of Activity	Year	No. of People Engaged			Remarks		
			Male	Female	Total			
Total								
Score								
Total Score								
Note: This indicator refers to the involvement of the communities in the FMU management activities such as road construction, logging, plantation and management planning and other operations. Include all the activities that involved community participation, and any form of employment provided to them								
Guidance								
i) Assess this indicator on two parameters (community meeting/consultation and employment)								
ii) Determine total number of meetings conducted during the period, number of participants, purpose of meeting, etc.								
iii) Determine total number of people, apart from regular staff of NRDCL and DoFPS, employed during the period in the FMU								
iv) Based on the number of meetings and number of people employed, score the indicator using scoring scale below								
Data Source								
Annual Monitoring report, Operational Plan, Annual Budget Allocation, Minutes of meeting, list of participants, record of payment, ledger, plantation journal, mid-term evaluation report.								

a) Meeting/ Consultation, Workshops				b) Employment					
Sl. No	Meeting/consultation		Score	Sl. No	Mid-term Evaluation		Final Evaluation		Score
	Mid-term Evaluation	Final Evaluation			Employment With Plantation	Employment Without Plantation	Employment With Plantation	Employment Without Plantation	
1	>=5	>=10	5	1	>150	>100	>270	>180	7
2	>=4	>=8	4	2	>125	>75	>225	>135	6
3	>=3	>=6	3	3	>100	>50	>180	>90	5
4	>=2	>=4	2	4	>75	>40	>135	>70	4
5	>=1	>=2	1	5	>50	>30	>90	>55	3
6	None	<2	0	6	>25	>20	>45	>40	2
				7	< 25	<20	<45	<40	1
				8	None	None	None	None	0

3.12.1.19. Form 19: Human-Wildlife Conflict Incidence and Its Interventions in FMU

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits															
Indicator 5.3: Human-Wildlife Conflict Incidence and Its Interventions in FMU															
Standard: Detection and Reporting of the HWCs in the FMUs															
Detection and Reporting															
Year	Livestock Depredation (Nos)			Crop Damage (Qty/Area)			Property Damage			Human Injury/Loss of Life (Nos)		Others			Remarks
	No. Cases	No. of Livestock Killed	Wildlife Involved	No. Cases	Name of the Crop Damaged	Wildlife Involved	No. Cases	Property Type	Wildlife Involved	No. Cases	Wildlife Involved	No. Cases	Type of HWC	Wildlife Involved	

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Total															
Score															
HWC Mitigation and intervention															
Year	HWC type			Type of Interventions (list)				Remarks (Describe)							
	Livestock depredation														
	Crop damage														
	Property damage														
	Human injury/loss of life														
	Others														
Score															
Total Score															
Note: Include all type of HWC															
Scoring Scale															
Detection and Reporting															
Sl. No	Reporting of HWC				Score	Sl. No	Interventions				Score				
1	HWC recorded and reported				2	1	Interventions for all types of HWC				3				
2	HWC recorded but not reported				1	2	More than 50%				2				
						3	Less than 50%				1				
						4	None				0				

Data Source

Management plan, operational plan, annual monitoring report, mid-term evaluation report, notifications or other guidelines, NRPC and firewood price, etc.

Scoring Scale

Sl. No	Actual Revenue as a Percent of Estimated Revenue	Score
1	>90	10
2	80-90	9
3	70-80	8
4	60-70	7
5	50-60	6
6	40-50	5
7	30-40	4
8	20-30	3
9	10-20	2
10	1-10	1
11	0	0

3.12.1.22. Form 22: Forest Road Construction

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits					
Indicator 5.6: Forest Road Construction					
Standard: At least of 80% of road proposed in MP constructed					
Year	Road Prescribed in Management Plan (Km)	Length of Road Planned in OP (Km)	Length of Road Constructed (Km)	% Achievement	Recommendation/Remarks
Total					
Score					
Note: Include all forest road inside FMU					
Guidance					
i) Check the planned forest road construction in management plan ii) Verify the length of the road constructed iii) Compare the length of road constructed and planned road iv) For mid-term evaluation, at least 50% of prescribed road shall be used for evaluation v) Score the indicator based on scoring scale below					
Data Source					
Annual monitoring report, Operational plan, Mid-term evaluation report, physical observation					
Scoring Scale					
Sl. No	% of Road Constructed	Score			
1	80-100	5			
2	60-80	4			
3	40-60	3			
4	20-40	2			
5	01-20	1			
6	0	0			

3.12.1.23. Form 23: Forest Road Maintenance

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits						
Indicator 5.7: Forest Road Maintenance						
Standard: Road condition is very good, and all types of vehicles are pliable						
Year	Length of Road Constructed in Previous Plans (Km)	Length of Road Constructed in Current Plan (Km)	Length of Road Planned for Maintenance (Km)	Length of Road Maintained (Km)	Condition of Road (Refer Guidance Below)	Recommendation/Remarks
Total						
Road Condition						
Score						
Note: Assess all old and new road inside FMU						
Guidance						
Condition of road: The condition of road should be described as Very Good, Good, Acceptable, Poor and Very Poor based on the following definitions:						
a) Very good: Road is pliable, drainage constructed for entire length of existing and new road, granular subbase constructed for entire length of the road, no visible damage or water logging. Average speed on road is up 30 km per hours						
b) Good: Road is pliable, drainage constructed for more than 50% of existing and new road, granular sub base constructed for entire length of the road and evidence of some damages, 20 km per hours						
c) Acceptable: Road is pliable, drainage constructed for more than 50% of existing and new road, granular sub base constructed for entire length of the road and evidence of some 10 km per hours damages						
d) Poor: Very difficult for pliable for most vehicles, drainage of road not maintained or blocked and GSB generally damaged with average speed if less than 10 km.						
e) Very poor: Very poor, difficult to ply, water logging observed in several areas, culverts damaged, GSB damaged in most part of the road, potholes along the road.						
Data Source						
Annual Monitoring report, Operational Plan, physical observation						
Scoring Scale						
Sl. No	Road Condition	Score				
1	Very good	5				
2	Good	4				
3	Acceptable	3				
4	Poor	2				
5	Very poor	1				

3.12.1.24. Form 24: FMU Sign and Signage

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits								
Indicator 5.8: FMU Sign and Signage								
Standard: All operated cable lines and plantation sites shall have standard sign boards								
Year	No. of Cable Lines Operated Since First Management	No. of Cable Lines with Signage	% of Cable Lines with Signage	No. of Plantation Sites	No. of Plantation Sites with Signage	% of Plantation Sites with Signage	Signages as Per Standard (Yes/No)	Recommendation / Remarks
Total								
Score								
Note: All cable lines and plantation sites shall be included								
Guidance								
i) Check the number of operated cable lines in all plans and number of cable lines with signage ii) Check all the plantation sites and number of plantation sites with signage iii) Verify whether all signages are as per the prescribed standard or contains minimum required information iv) Determine the % of cable line and plantation sites with signage and score using the table below								
Data Source								
Management plan, operational plan, annual monitoring report, mid-term evaluation report, etc.								
Scoring Scale								
Sl. No	% of Signage	Score						
1	80-100	5						
2	60-80	4						
3	40-60	3						
4	20-40	2						
5	01-20	1						
6	0	0						

3.12.1.25. Form 25: Legal, Institutional, and Economic Framework for Forests Conservation and Sustainable Management

Criteria 6: Legal, Institutional, and Economic Framework for Forests Conservation and Sustainable Management			
Extent to which the legal, institutional, and economic framework for forest conservation and sustainable management exist, including capacity to:			
Indicator	Standard	Observation (Yes/No)	Recommendation/Remarks
6.1 Legislation and policies supporting the sustainable management of forests	Yes		
6.2 Cross sectoral policy and programmed coordination	Yes		
6.3 Clarity and security of land and resource tenure and property rights	Yes		
6.4 Enforcement of laws related to forests	Yes		
6.5 Programmes, services and other resources supporting the sustainable management of forests	Yes		
6.6 Development and application of research and technologies for the sustainable management of forests	Yes		
6.7 Partnerships to promote the sustainable management of forests	Yes		
6.8 Public participation and conflict resolution in forest- related decision making	Yes		
6.9 Monitoring, assessment, and reporting on progress towards sustainable management of forests	Yes		
Instruction			
The Evaluation Team should study the documents relating to policy, legislation, institutional procedures and Departmental guidelines that apply to forest management and form an opinion as to whether each indicator from 6.1 to 6.9 is covered. However, this indicator shall not be scored as policies, legislation, institutional procedures and guidelines applied are uniform across all FMUs which are based on FNCA 2023 and code 2021. Evaluation team may indicate "Yes" or "No" in the observation and provide recommendation if any.			

3.12.1.26. Form 26: Evaluation Summary Form

Evaluation Summary Form				
Instructions: Outcome and the scores of the mid-term or final evaluation annual monitoring indicators should be summarized in the FMU Evaluation form. All applicable and relevant indicators should be assessed and scored. The non-relevant indicator shall be recorded as 'NA'. The assignment of NA shall be described in the monitoring report.				
Criteria	Evaluation	Total Score	Evaluation Score	Performance Percent
1. Maintenance of productive capacity of forest	1.1 Annual Commercial timber volume removed compared with AAC	10		

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ecosystems	1.2 Annual Rural Timber Volume Removed Compared with AAC	10		
	1.3 Annual demand and supply of NWFP	10		
	1.4 Percent of clear-cut area regenerated through plantation and survived/established	15		
	1.5 Change in forest area inside production working circle	5		
	1.6 Change in forest area inside FMU (Overall Forest Area)	10		
2. Conservation of biological diversity	2.1 Status of natural regeneration (NR)	10		
	2.2 List of forest dwelling key flora species. Indicators only	5		
	2.3 List of forest dwelling key fauna species. Indicators only	5		
	2.4 Protection WC connects within FMU and external PA or other forest	3		
3. Maintenance of forest ecosystem health and vitality	3.1 Forest Pest and disease and management	10		
	3.2 Forest fire incident and response/damage assessment	5		
	3.3 Post fire management	5		
	3.4 Waste management	10		
4. Conservation and maintenance of soil and water resources	4.1 Change in forest area inside protection working circle	5		
	4.2 FMU area with significant soil erosion and threats to stream or spring	5		
5. Maintenance and enhancement of long-term multiple socio-economic benefits	5.1 The forest area managed to protect cultural, social, spiritual values	5		
	5.2 Extent of community participation in forest management	10		
	5.3 Human-wildlife incidents and its interventions in FMU	5		
	5.4 Disposal of the timber extracted from FMU	10		
	5.5 Revenue generated through sale of forest produce by commercial operation	10		
	5.6 Forest Road Constructed as per forest management plan	5		
	5.7 Forest Road maintained as per plan	5		
	5.8 FMU Sign and Signages	5		
6. Legal,	6.1 Legislation and policies	Yes/No		

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institutional, and economic framework for forest conservation and sustainable management	supporting the sustainable management of forests			
	6.2 Cross sectoral policy and programmed coordination	Yes/No		
	6.3 Clarity and security of land and resource tenure and property rights	Yes/No		
	6.4 Enforcement of laws related to forests	Yes/No		
	6.5 Programs, services and other resources supporting the sustainable management of forests	Yes/No		
	6.6 Development and application of research and technologies for the sustainable management of forests	Yes/No		
	6.7 Partnerships to promote the sustainable management of forests	Yes/No		
	6.8 Public participation and conflict resolution in forest- related decision making	Yes/No		
	6.9 Monitoring, assessment, and reporting on progress towards sustainable management of forests	Yes/No		

3.12.2. FMU Evaluation Report Format

Evaluation Type: Mid-term / Final Evaluation

1. Executive Summary

- Summary of the evaluation findings.
- Overview of key observations and trends.

2. Introduction

- Purpose of the evaluation exercise.
- Scope of the Scope period and activities covered.

3. Evaluation Objectives

- Specific objectives set for the monitoring period.
- Expected outcomes from the monitoring activities.

4. Methodology

- Description of the monitoring tools and methods used.
- Data collection techniques and sources.
- Frequency and timeline of monitoring activities.
- Field visits

5. Detailed Analysis by Criteria and Indicators

5.1 Maintenance of Productive Capacity

- Assessment of each indicator and findings

5.2 Conservation of Biological Diversity

- Assessment of each indicator and findings

5.3 Ecosystem Health and Vitality

- Assessment of each indicator and findings

5.4 Soil and Water Resources

- Assessment of each indicator and findings

5.5 Socio-Economic Benefits

- Assessment of each indicator and findings

5.6 Legal and Institutional frameworks

- Assessment of each indicator and findings (this indicator shall be not scored)

6. Performance Assessment and Rating

Table 3.16: Performance Assessment and Rating for Mid-term/Final M & E

Sl. No	Criteria	Indicator	Total Score	Score	Score %
1					
2					
3					
4					
5					
6					
7					

7. Issues and Challenges

- Identification of any challenges encountered during monitoring.

8. Annexures

- Evaluation forms

3.13. Annexures

Annexure 1: Physical & Financial Form for Self-Monitoring in Forest Management Unit

Form 1: Commercial Activities

FMU name:	Report period:		Filled in by (Name, Designation)	
	Planned	Implemented	Actual cost	REMARKS
1. ANNUAL ALLOWABLE CUT (AAC)				
1.1 Total standing volume harvested	m ³	m ³		
1.2 Area harvested	ha	ha		
2. PRODUCTION BY SILVICULTURAL SYSTEM				
A. Thinning				
2.1 Standing Volume from marking list	m ³	m ³	Nu	
2.2 Total working area	ha	ha		
2.3 Method of thinning				describe
B. Single Tree Selection				
2.4 Standing Volume from marking list	m ³	m ³	Nu	
2.5 Total working area	ha	ha		
C. Group Selection				
2.6 Standing Volume from marking list	m ³	m ³	Nu	For Salvage operation, mention the Block and compartment in which the operation was carried out.
2.7 Total area harvested	ha	ha		
2.8 Total corridor area	ha	ha		
D. Seed Tree				
2.9 Standing Volume from marking list	m ³	m ³	Nu	
2.10 Total area harvested	ha	ha		
2.11 Number of trees retained per ha	No	No		
E. Clear-cut				
2.12 Total area harvested	ha	ha		
2.13 Standing Volume from marking list	m ³	m ³	Nu	

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3. Natural Regeneration (Stocking Assessment on Form 2)

Activities	Planned	Implemented	Actual cost	Remarks
3.1 Site preparation	ha	ha		Cable line no: Year/no. Cable line no: Year/no. Cable line no: Year/no. Cable line no: Year/no.
3.2 Fencing	ha	ha		
3.3 Total regeneration cost			Nu	
3.4 Weeding	ha	ha	Nu	
3.5 Enrichment planting	No	No	Nu	

4. Plantation (Stocking Assessment on Form 2)

Activities	Planned	Implemented	Actual cost	Remarks
4.1 Site preparation	ha	ha		Cable line no: Year/no.
4.2 Area planted	ha	ha		Cable line no: Year/no.
4.3 Fencing	ha	ha		Cable line no: Year/no.
4.4 Total Cost			Nu	

5. Roads

Activities	Planned	Implemented	Actual Cost	Remarks
5.1 Planning and survey	km	km		
5.2 Formation cutting	km	km		
5.3 Soling	km	km		
5.4 Stabilizing walls	No	No		
5.5 Drainage installed	km	km		
5.6 Bioengineering	m	m		
5.7 Road completed	km	km		
5.8 Total construction cost			Nu	
5.9 Bridges constructed	No	No	Nu	
5.10 Maintenance	km	km	Nu	

6. Recurrent Costs (FMU only)

Activities	Planned	Implemented	Actual Cost	Remarks
6.1 NRDC staff salaries	Nu		Nu	specify the number of staff
6.2 NRDC staff allowances	Nu		Nu	
7. Total Operating Cost		Nu		

Form 2: Commercial Activities (timber extraction, plantation and regeneration survey)

FMU Name:		
Report Period:		
Name of Official	Designation	Office

D. Extraction from Cable lines/Adhoc activities

Location			Cable lines		6.No of Groups/Patches	7.Total Area Harvested (ha)	Volume						Remarks
1.Block Name	2.Compartment/Sub-comp	3.Working Circle	4. Cable Line No (Yr./No)	5. Cable Line Length (m)			8.Inventory Volume (m ³ /ha)	9. Standing from Marking List (m ³)	10. Log Volume Extracted (m ³)	11.Log Recovery (%)	12. Firewood Produced (m ³)	13. Log + Firewood Recovery (%)	

E. Regeneration Stock Assessment

1. Block Name	2. Compartment /Sub-Compartment	3. Working Circle	4. Cable Line No (Yr./No)	5. Area (ha)	6. Species	7. Stocking %	8. Remarks

F. Plantation Stock Assessment

1. Block Name	2.Compartment/Sub-compartment	3. Working Circle	4.Cableline No (Yr./No)	5. Area (ha)	6. Species	7. Survival %	8. Remarks

Form 3: Divisional Activities (detailed)

Activities	OPERATIONAL PLAN			Comments
	Planned	Implemented	Actual Cost	
1. Forest fires				
1.1 Fire lines for prevention	m	m		
1.2 Fuel reduction burning	ha	ha		
1.3 Training (No of courses/trainees)	No	No		
1.4 Number of fires		No	Nu	suppression costs
1.5 Area burnt		ha		
2. Diseases / epidemics / other damages (e.g. Landslides, floods etc.)				
2.1 Preventive measures				Specify: e.g., debarking, debris burning
2.2 Incidence				Specify type of outbreak or damage and area affected
2.3 Control measures				e.g. traplocks, salvage logging
3. Social issues				
3.1 FMU Level Committee meetings held	No	No		
3.2 Meetings with CFMU held?	No	No		
3.3 Meetings on (.....)	No	No		
3.4 Meetings on (.....)	No	No		
3.5 Meetings on (.....)	No	No		
COMMENTS				
4. Research				Specify Type and Action:
4.1 Silviculture/ecology				
4.2 Social				
4.3 Work study				

Form 3: Divisional Activities (detailed) (continued)

Activities	OPERATIONAL PLAN			Comments
	Planned	Implemented	Actual cost	
5. Equipment / infrastructure (DoFPS only)				specify type and purpose:
5.1 Vehicles				
5.2 Machinery				
5.3 Field equipment				
5.4 Office equipment				
5.5 Constructions				
6. Human Resources				specify position and grade:
6.1 Increase/decrease staff	No	No		
6.2 Purchase of external services	No	No		
6.3 Training (No of courses / trainees)	No	No		
7. Costs (FMU staff only)				
7.1 Territorial staff salaries	Nu		Nu	specify position and grade
7.2 Territorial staff allowances	Nu		Nu	
7.3 Planning and inventory	Nu		Nu	
7.4 Other incidental expenses	Nu		Nu	
8. Total Expenses			Nu	

Form 5: Road Drainage by Side Drains, Batter and Fill Slopes

FMU	Filled in by	Date.....
-----	-------	--------------	-------	-----------

Instructions: Every 50 meter along the road, assess side drain depths, blockages, road camber, and stability of batter and fill slopes over the whole 50-meter distance. Cover the distance assessed on Form

Side Drains Depth (Cm)	Side Drains Free of Blockages? Y/N	Road Surface Cambered* to get Drainage? Y/N	Batter Slopes Stable? Y/N	Fill Slopes Stable? Y/N				

Progress Score from form 4=.....

Scoring. Calculate average side drain depth.

- If it is less than 30 cm: - **subtract 10 points**
- If side drains are blocked in more than 20% of the samples (>20% N): **subtract 10 points**
- If the road surface is not cambered* in more than 20% of the samples (>20% N): **subtract 10 points**
- If batter and fill slopes are not stable in more than 20% of the samples (>20% N): **subtract 5 points**

* "Cambered" allows water to drain off the road, rather than collecting in puddles.^θ Pacing is accurate enough. Lay out a 50m tape and count how many paces, walking normally, you use to cover 50m

Progress score

Form 6: Streaming Crossings

FMU	Filled in by	Date
-----	-------	--------------	-------	------	-------

Instructions: When the road crosses a perennial stream, check that a culvert, bridge or concrete ford has been installed to carry the stream. Also, that there are culverts within 50m to prevent road drainage from entering the stream. The culvert cross-sectional area or space under a bridge needs to be about 1.5 times the cross-section of the stream channel*. Assess at least five streams.

For all running streams, as they are found, fill in below:

Stream No.	Culvert or Bridge to Carry Stream Under Road or Concrete Ford? Y/N	Culvert Pipes or Bridge Big Enough*? Y/N	Culverts within 50m of Stream, Each Way? Y/N
1			
2			
3			
4			
5			
6			
7			
8			

Progress score from form 5=

Scoring.

- If there is no culvert, bridge or ford prepared for any of the streams, **subtract 10 points**
- If the culverts or bridges are not big enough for any of the streams, **subtract 5 points**
- If there are no diversion culverts for any of the stream, **subtract 5 points**

*Commonly use culvert pipes have the following cross-sectional areas. 30cm – 0.07m², 60cm – 0.28m², 90cm – 0.64m², 120cm – 1.13m²

*Stream cross sectional area in square metres = Width of channel (m) x Depth on channel (m) x 0.5

Progress Score=

Form 7: Cable Lines

FMU	Filled in by	Date
------------	----------------	-------------------------	----------------	-------------	----------------

Instructions: Walk along the centre of completed (i.e., utilized) cable lines and measure the following in sample sections of 100m. Assess at least half of the length harvested for the year (could be from several lines).

Total length of strip examined _____ (m)

Sample Section	Do All Streams in Cut Strip have Buffers? Y/N	Are all the Buffers Wider than 30m? Y/N	Are All the Buffers Free of Lops/Tops and Stumps? Y/N — If N, Say Which.	Is The Maximum Slope in the Strip Less Than 100%? * Y/N	Is the Strip Free of Channels Caused by Manual Extraction of Timber? Y/N
1					
2					
3					
4					
5					
6					
7					

Progress score from form 6=

Scoring:

- If any of the streams have no buffers (ANY N)- **subtract 10 points**
- If any of the streams have buffers < 30m wide (ANY N) - **subtract 6 points**
- If any of the buffers include stumps (ANY stumps - **subtract 5 points**
- If any of the buffers have lops/tops (ANY lops/tops - **subtract 4 points**
- If more than 20% of samples are steeper than 100% (>20% N) - **subtract 10 points**
- If any of the buffers include channels from manual extraction - **subtract 5 points**

* Check the Management Plan. In some localities with unstable terrain the slope limit shall have been set at 75%.

Progress Score:

Form 8: Interlines

FMU	Filled in by	.....	Date	.....
<p>Instructions: Walk along the centre of the interline space between cable lines and assess the following in sample sections of 100m (could be from several lines). Assess at least half of the length harvested for the year (could be from several lines).</p>					
<p>Total Length of Strip Examined (m)</p>					
Sample Section	During Felling on the Cable Line, Have Trees Been Felled into the Uncut Strip Causing Damage to Standing Trees, Saplings, Regeneration? (Y/N)	Has Felling/Pit Sawing of Large Trees (>35cm DBH) Occurred in the Uncut Strip Since Opening the Coupe? (Y/N)	Has Cutting/Removal of Saplings taken Place in the Uncut Strip, for Poles, Fencing Materials or Other Purposes Since Opening the Coupe? (Y/N)	Has Lopping for Fodder Occurred in the Uncut Strip Since Opening the Coupe? (Y/N)	Does the Uncut Strip Show Signs of Mineral Soil Disturbance and/or Channelling Caused by Manual Extraction of Timber, Poles and/or Fuelwood Since Opening the Coupe? (Y/N)
1					
2					
3					
4					
5					
6					
7					
8					
<p>Progress Score from form 7 =</p>					
<p>Scoring:</p> <ul style="list-style-type: none"> • If any Yes (Y) in column 1 subtract 5 points • If any Yes (Y) in column 2 or 3 subtract 10 points • If any Yes (Y) in column 4 subtract 4 points • If any Yes (Y) in column 5 subtract 6 points 					
<p>Final Score =</p>					

Annexure 3: Biodiversity Form for Self-Monitoring

Form 9: Wildlife Monitoring: Animal (Fauna) Indicator Species

FMU	Filled in by	Date:
------------	-------	-------------------------	-------	-----------------------

TRANSECT & NON-TRANSECT DATA SHEETS. (1)

1. Transect Data Sheet on **Animal (Faunal) Indicator Species** (check with original Inventory).

Date:		Team Members:	List of Indicator Species for this FMU:
Transect Route:		1.	1.
Elevational Range:		2.	2.
Start Time for Transect:		Local Guide:	3.
End Time for Transect:			4.

Species	Observation	Group Size	Call	Tracks	Scat	Hairs	Kills	Mud Marks	Bedding	Tree Marking

2. Non-transect Data Sheet on Animal (Faunal) Indicator Species (2)

Species	Location	Time	Observation	Group Size	Call	Remarks

3. Notes on Human Related Activities (including hunting) on Wildlife:

Form 10: Plant Indicator Species and Regeneration Stocking

FMU	.....	Filled in by	.....	Date	.....
List of Plant (Flora) Indicator Species for this FMU (consult original Inventory for Main Canopy and important Understory Species):					
7.		6.		Team Members:	
8.		7.		1.	
9.		8.		2.	
10.		9.		3.	
11.		10.		Local Guide:	

1. Transect Data Sheet on Regeneration of Indicator Species in Cut-over Groups, Patches or Strips:

Date:	Transect Location & Route:	Transect Location & Route
--------------	-------	---------------------------------------	-------	--------------------------------------	-------

Method: The total length of cable line harvested in the year should be examined. Divide this distance by 50. This is the distance between plots along the transect. Begin the transect along the cut over area(s) starting from a randomly located point, avoiding the cable line corridor. The transect need not be a straight line. At each plot location, consider only the genera/species listed above, both natural regeneration and planted trees combined. Look for established seedlings using a plot radius of 1.26 m. If one of the above species is found, write the species number in the ‘Stocked’ box for that plot. Ignore any of the same species after you have found the first one but continue to check for the others.

Plot No.	Stocked ?	Plot No.	Stocked ?	Plot No.	Stocked?	Plot No.	Stocked?	Plot No.	Stocked?
1		11		21		31		41	
2		12		22		32		42	
3		13		23		33		43	
4		14		24		34		44	
5		15		25		35		45	
6		16		26		36		46	
7		17		27		37		47	
8		18		28		38		48	
9		19		29		39		49	
10		20		30		40		50	

Percent Stocking for Indicator species
= No. of stocked boxes x 2 = _____

1a. Note whether planted species include any that are not on the list of up to 10 local mature canopy species (indicator species) given above (e.g., *Cupressus* in a broadleaved forest area) (Y/N)

Comment: _____

1b. Note also whether planted trees are well mixed by species (i.e., they do not form even small blocks of the same species) (Y/N)

2. Transect Data Sheet on Regeneration of Indicator Species in the Interline (Uncut) Strips:

Date:	Transect Location & Route:	Transect Location & Route
--------------	-------	---------------------------------------	-------	--------------------------------------	-------

Method: (Begin a transect along the centre of the uncut strip, starting from a randomly located point inside the uncut forest. Stay at least half a tree height from any edges. Assess plots systematically, the same distance apart as the plots on page 1 of this form. The transect need not be a straight line. Consider only the genera/species listed on page 1. Count seedlings up to 5 m in height using a plot radius of 2.06 m. (it is intended those seedlings up to 10 years of age shall be included in this count). Put the species numbers in the ‘Stocked’ box when you find them, as for page 1.

Plot No.	Stocked?	Plot No.	Stocked?	Plot No.	Stocked?	Plot No.	Stocked?	Plot No.	Stocked?	Percent Stocking = No. of stocked boxes x 2 = ----- -- %
1		11		21		31		41		
2		12		22		32		42		
3		13		23		33		43		
4		14		24		34		44		
5		15		25		35		45		
6		16		26		36		46		
7		17		27		37		47		
8		18		28		38		48		
9		19		29		39		49		
10		20		30		40		50		

2a. Note intrusion of any ‘exotic’ ‘weed’ species (e.g., clover, pasture grasses, shrubs or trees from outside the operational area) (Y/N)

Comments

3. Notes on Human-related activities including the incidence and intensity of grazing by domestic livestock, collection of medicinal plants and harvesting of other NWFPs:

Annexure 4: Community Participation Form for Self-Monitoring

Form 11: Community Participation RRA Checklist

FMU	Filled in by	.....	Date	.....
Which Community do the People Come From?					
Team Members					
How many MEN & WOMEN in a group are interviewed?					
MEN.....			WOMEN.....		
A. Local Community Participation (Indicator 1.7)					
1) How did they learn about the existence of the nearby FMU?					
2) What activities do they know about that go on in the FMU?					
3) How have the commercial activities in the FMU affected their traditional resource use?					
4) How and when were they consulted about their use of the FMU?					
5) Were there any village meetings about the activities in the FMU?					
<ul style="list-style-type: none"> • When? 					
<ul style="list-style-type: none"> • Who went to the meeting from the village? 					
<ul style="list-style-type: none"> • How were they involved in the meetings? 					
<ul style="list-style-type: none"> • What were the results of going to the meeting? 					
6) Is there a Management Committee (or similar forum) for the FMU on which communities are represented?					
<ul style="list-style-type: none"> • When was the Committee formed? 					
<ul style="list-style-type: none"> • Who is on the Committee from the village? 					
<ul style="list-style-type: none"> • What are the results of being on the Committee? 					
7) Other Observations or Comments on Participation:					

B. Extent to Which Community Needs are Met from the FMU (Indicator 1.8)	
1) What products does the community get from the FMU?	
2) How often?	
3) Which products are needed annually, biennially, occasionally?	
4) Which products can be obtained from elsewhere? Where?	
5) If some or all products were not available from the FMU, what would you do?	
6) Which products can still be obtained from the FMU?	
7) Which products can't be obtained from the FMU now?	
8) Other Observations or Comments about the FMU Meeting Local Needs.	

Annexure 5: Physical, Financial and Environmental Monitoring Summary Forms

Summary Form 1: Commercial Activities

PHYSICAL, FINANCIAL AND ENVIRONMENTAL MONITORING SUMMARY FORM					
(Page 1)					
FMU Name:					
Report Period:					
Name of Official		Designation		Office	
Activity 1	Silviculture System			Working Circle	Comments
Item	Plan Target	Implemented	Cost (Nu)	Revenue (Nu)	
1. Area harvested (ha) (AAC)					
2. Standing volume harvested (m ³) (AAC)					
3. Log volume produced (m ³)					
4. Value of Log sold from FMU (Nu)					
5. Firewood volume produced (m ³)					
6. Value of firewood sold (Nu)					
7. Total royalty paid to DoFPS (Nu)					
8. Forest roads constructed (km)					
9. Area regenerated/planted (ha)					
Activity 2	Silviculture System			Working Circle	Comments
Item	Plan Target	Implemented	Cost (Nu)	Revenue (Nu)	
Area harvested (ha) (AAC)					
2. Standing volume harvested (m ³) (AAC)					
3. Log volume produced (m ³)					
4. Value of Log sold from FMU (Nu)					
5. Firewood volume produced (m ³)					
6. Value of firewood sold (Nu)					

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7. Total royalty paid to DoFPS (Nu)					
8. Forest roads constructed (km)					
9. Area regenerated (ha)					
Activity 3	Silviculture System			Working Circle	Comments
Item	Plan Target	Implemented	Cost (Nu)	Revenue (Nu)	
1. Area harvested (ha) (AAC)					
2. Standing volume harvested (m ³) (AAC)					
3. Log volume produced (m ³)					
4. Value of Log sold from FMU (Nu)					
5. Firewood volume produced (m ³)					
6. Value of firewood sold (Nu)					
7. Total royalty paid to DoFPS (Nu)					
8. Forest roads constructed (km)					
9. Area regenerated (ha)					
ACTUAL REVENUE & EXPENDITURE					
1. NRDCCL Total Revenue for FMU					
2. Royalty paid by NRDCCL					
3. NRDCCL expenditure for FMU					
4. NRDCCL Net Revenue (1 - (2 + 3))					
5. Royalty paid to DoFPS					
6. DoFPS expenditure for FMU					
7. DoFPS Net Revenue (5 - 6)					
Total Revenue for FMU (4 + 7)					

Summary Form 2: Divisional Activities

1. Forest production							
1.1 Wood Products		Disposal					
		Rural			Commercial		
		Quantity (m³)	Quantity	Royalty (Nu)	Quantity (m³)	Quantity	Royalty (Nu)
Trees			No			No	
Chams			No			No	
Tsim			No			No	
Dangchung			No			No	
Fencing posts			No			No	
Flag posts			No			No	
Firewood			m ³			m ³	
Other products (royalty only)							
1.2. Non-wood Products		Rural			Commercial		
		Quantity (m³)	Quantity	Royalty (Nu)	Quantity (m³)	Quantity	Royalty (Nu)
Bamboo			No			No	
Extractive oils			Kg			Kg	
Resin			Kg			Kg	
Daphne bark			Kg			Kg	
Mushroom			Kg			Kg	
Other products (royalty only)							
Total Royalty							

Summary Form 2: Divisional Activities (Continued)

2. Forest protection					
Offences		Number		Quantity	
Offences detected					
Damaging Agents		Number		Hectares	
Forest fire					
Insect or disease epidemic					
Landslide					
Flood					
Other					
Total					
3. Research					
Type					
Achievement					
4. Social Issues					
FMU Steering Comm. Meetings held (No)					
Meetings with CFMU held? (No)					
Meetings for other purposes? (No)					
Meetings for other purposes? (No)					
Comments					
5. Environmental Monitoring (Scores from Env Mon Forms)					
Purpose	Roads (Culverts)	Roads (Drains etc.,)	Streams	Cable Lines	Interlines
Form Number	4	5	6	7	8
Progress score*					
*Starting score = 140					
12. Regeneration stocking for the area assessed this year (from Env Mon Form 10)					

Annexure 6: Annual Monitoring Form

Form 1: Annual Commercial Timber Volume Removed ACC

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems					
Indicator 1.1 Annual Commercial Timber Volume Removed Compared with AAC					
Standard: Annual removal can be $\pm 10\%$ in case of annual monitoring except of last OP during the management plan period (i.e. 10th year)					
Sl. No	Month	AAC as per OP (m ³)	Achievement (m ³)	Achievement (%)	Recommendation/Remarks
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
Total					
Score					
Note: AAC is annual allowable cut, OP is operational plan					
Scoring scale					
Sl. No	Undercut%	Score	Overcut%	Score	
1	90-100	1	1-10	9	
2	80-90	2	> 10	0	
3	70-80	3			
4	60-70	4			
5	50-60	5			
6	40-50	6			
7	30-40	7			
8	20-30	8			
9	10-20	9			
11	0-10	10			

Form 2: Annual Rural Timber Volume Removed Compared with AAC

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems					
Indicator 1.2: Annual Rural Timber Volume Removed Compared with AAC					
Standard: Annual removal can be $\pm 10\%$ in case of annual monitoring except of last OP during the management plan period (i.e. 10th year)					
Sl. No	Month	AAC as per OP (m ³)	Achievement (m ³)	Achievement (%)	Recommendation / Remarks
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
Total Score					
Note: AAC is annual allowable cut, OP is operational plan					
Scoring scale					
Sl. No	Undercut%	Score	Overcut%	Score	
1	90-100	1	1-10	9	
2	80-90	2	> 10	0	
3	70-80	3			
4	60-70	4			
5	50-60	5			
6	40-50	6			
7	30-40	7			
8	20-30	8			
9	10-20	9			
11	0-10	10			

Form 3: Annual Demand and Supply of NWFPs

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems							
Monitoring Indicator 3. Annual Demand and Supply of NWFP							
Standard 1: Cumulative annual removal $\pm 10\%$ of AAC (If AAC is prescribed)							
Standard 2: NWFP % based on demand and supply and resource availability (if AAC is not prescribed)							
NWFP Name							
Month	Year of Operation	Unit	AAC	Demand	Supply	Percent Achieved	Recommendation/ remarks
Total							
Score							
Scoring Scale							
Sl. No	If AAC is Prescribed MP/OP or NWFP Management Group				If AAC is Not Prescribed		
	Under Harvest %	Score	Over Harvest %	Score	% of Demand Met	Score	
1	90-100	1	1-10	9	90-100	10	
2	80-90	2	> 10	0	80-90	9	
3	70-80	3			70-80	8	
4	60-70	4			60-70	7	
5	50-60	5			50-60	6	
6	40-50	6			40-50	5	
7	30-40	7			30-40	4	
8	20-30	8			20-30	3	
9	10-20	9			10-20	2	
10	1-10	10			1-10	1	
11	<1	0			<1	0	

Form 4: Percent of Clear-Cut Area Regenerated Through Plantation, Survivability and Establishment

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems								
Indicator 1.4: Percent of Clear-Cut Area Regenerated Through Planation, survivability and Establishment								
Standard: More than 80% of clear-cut area excluding roads shall be replanted and plantation are successful								
Sl. No	Year	Cable Line No.	Survey Year	Corridor Area (ha)	Opening Area (ha)	Area Planted (ha)	Survival %	Recommendation/ Remarks
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
Total/ Average								
Score								
Scoring Scale								
Clear Cut Area Planted				Survival Percent				
Sl. No	% of Area Planted	Score		Sl. No	Survival Percent (%)	Score		
1	80-100	5		1	>=90	10		
2	60-80	4		2	80-90	9		
3	40-60	3		3	70-80	8		
4	20-40	2		4	60-70	7		
5	01 -20	1		5	50-60	6		
6	< 1	0		6	40-50	5		
				7	30-40	4		

Form 5: Status of Natural Regeneration

Criteria 2: Conservation of Biological Diversity				
Indicator 2.1: Status of Natural Regeneration (NR)				
Standard: Natural regeneration is adequate and where necessary assisted/promoted				
Summary of NR Survey Report				
Cable Line No.	Year of Operation	NR Survey Year	Average Seedling	Recommendation/Remarks
Average Score				
Facilitating natural regeneration (list of activities implemented to promote NR)				
Survey Year	Total Cable Lines Operated	Types of Intervention	Cable Line No.	Year of Operation of Cable Line
Total Activities Score				
Total Score				
Note: This indicator is applicable if natural regeneration is recommended in MP				
Scoring scale				
Sl. No	Status of NR	Score	No. of Activities Promoting NR	Score
1	Adequate	5	> 3 activities	5
2	Doubtful	3	> 2 activities	3
3	Poor	1	> =1 activity	2
			< 1 activity	0
			NR adequate	5

Form 6: Forest Pest & Disease and Its Management

Criteria 3: Maintenance of Forest Ecosystem Health and Vitality								
Indicator 3.1: Forest Pest & Disease and Its Management								
Standard: Pest and disease infestation detected, reported and managed								
Month	Detection (Y/N)	Reporting (Y/N)	Damage Assessment (Y/N)	Area Affected (ha)	Affected Area Mapped (Y/N)	Sanitation Operation Start Month	Intervention List	Recommendation / Remarks
Score								
Note: Y- Yes, N- No.								
Scoring Scale								
Sl. No	Pest and Disease							Score
1	Detected, reported, damage assessment completed along with map and sanitation operation started							5
2	Detected, reported, damage assessment completed along with map but sanitation operation not started							4
3	Detected, reported, damage assessment ongoing							3
4	Detected, reported but damage assessment not started							2
5	Detected but not reported							1
6	Observed during monitoring-by-monitoring team. No detection or reporting record found							0

Form 8: Post-fire Management

Criteria 3: Maintenance of Forest Ecosystem Health and Vitality

Indicator 3.3: Post Fire Management

Standard: Post fire management activities fully implemented

Month	Area Affected by Fire (ha)	Estimated Volume of Timber (m ³)	Volume of Timber Extracted (m ³)	Area Replanted (ha)	Recommendation / Remarks
Total					
Score					

Note: This indicator is relevant only if there is fire incidence in the FMU and forest fire management is recommended in fire damaged report

Scoring Scale

Sl. No	Action Taken	Score
1	Extraction of timber and/or reforestation completed within 1 year	5
2	> 75 % of forest fire management activities completed	4
3	> 50 % of forest fire management activities completed	3
4	> 25 % of forest fire management activities completed	2
5	< 25 % of forest fire management activities completed	1
6	Post fire management not initiated	0

Form 9: Waste Management

Criteria 3: Maintenance of Forest Ecosystem Health and Vitality

Indicator 3.4: Waste Management

Standard: No waste observed in the sites and number of waste management programs implemented

Month	Waste Management Program Conducted (Yes/No)	No. of Local Community Engaged	Waste Collection Conducted (Yes/No)	Quantity Collected (Kg)	Evidence of Waste during Field Visit (Yes/No)	Recommendation/Remarks
Total						
Score						

Note: Yes = 1, No = 0. This indicator refers to the waste management in FMU

Scoring Scale

Sl. No	Physical Observation at Sites		Number of Awareness Programs		
	Site Observation	Score	Mid-term Evaluation	Final Evaluation	Score
1	No evidence of waste observed in all sites	5	>= 60	>= 100	5
2	No evidence of waste observed in > 75% sites	4	>50	>80	4
3	No evidence of waste observed in > 50 % of sites	3	> 35	> 60	3
4	No evidence of waste observed in > 25% of sites	2	>25	>40	2
5	No evidence of waste observed in <25% of sites	1	>=5	>=10	1
6	Waste observed in all sites	0	None	None	0

Form 10: FMU Area with Significant Soil Erosion and Threats to Stream or Spring

Criteria 4: Conservation and Maintenance of Soil and Water Resources

Indicator 4.1: FMU Area with Significant Soil Erosion and Threats to Stream or Spring

Standard: Assess the condition of roads, stream crossing, cable corridor and interlines.

Assessment Parameter	Condition	Summary from Self-Monitoring Form (4-8)	Physical Observation/ Measurement (Yes/No)	Recommendation /Remarks
Road Culverts	All road culverts Not blocked (Yes/No)			
	Average Road Gradient less than 4% (Yes/No)			
Erosion protection	All culverts inlet & outlet protected against erosion (Yes/No)			
Road drains	Side drains for all road (Yes/ No.)			
	All roadside drains Not blocked (Yes/ No)			
Road camber	Road surface cambered (Yes/No)			
Batter	Batter slopes stable (Yes/No)			
Fill	Fill slopes stable (Yes/No)			
Stream Crossings	All stream crossing with culvert or bridge or concrete ford? (Yes/No)			
Cable lines	All streams in cut strip have buffer? (Yes)			
	Are all the buffers free of lops/tops and stumps? (Yes/No)			
	Is the maximum slope in the strip less than 100%? (Yes/No)			
	Is the strip free of channels caused by manual extraction of timber? (Yes/No)			
Interlines	No felling damaged inside interlines (Yes/No)			
	No felling of trees inside interlines (Yes/No)			
	No lopping of fidders trees inside interlines (Yes/No)			
No. of 'Yes'				
No. of 'No'				
Score				

Note: The conditions and statement listed above can influence the soil erosion and pose risk to stream/springs in the FMU.

Scoring Scale				
Sl. No	Risk to Soil Erosion and Stream/Spring	Percent of 'Yes'	Score	
1	Very low	> 80 %	5	
2	Low	>60 %	4	
3	Moderate	>40	3	
4	Severe	>20	2	
5	Very severe	<20	1	
6	Extremely severe	None	0	

Form 11: The Forest Area Managed to Protect Cultural, Social and Spiritual Values

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits							
Criteria 5.1: The Forest Area Managed to Protect Cultural, Social, Spiritual Values							
Standard: The cultural, social, spiritual values/site inside FMU protected and conserved							
Sl. No	Name of Cultural, Social or Spiritual Site	Buffer (m)	Mapping? (Yes/No)	Disturbance Inside Buffer			Recommendation /Remarks
				Felling (Yes/No)	Road (Yes/No)	Soil Erosion	
Score							
Note: This indicator refers to conservation of cultural, social and spiritual values or sites							
Scoring Scale							
Sl. No	Conservation/Protection of Cultural, Social and Spiritual Values/Sites	Score					
1	All cultural, social and spiritual sites/values identified, mapped, buffer maintained, and conservation ensured	5					
2	All cultural, social and spiritual sites/values identified, mapped, buffers maintained with significant disturbance (felling, roads, etc.,)	4					
3	All cultural, social and spiritual sites/values identified, mapped with no buffer	3					
4	All cultural, social and spiritual sites/values identified but not mapped	2					
5	Some of cultural, social and spiritual sites/values identified and mapped	1					
6	Neither identified nor mapped	0					

Form 12: Extent of Community Participation in Forest Management

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits
Indicator 5.2: Extent of Community Participation in Forest Management
Standard: Involve local communities and other stakeholders in FMU management, planning, and implementation of plan activities
a) Meetings. Consultations, Workshops

Month	Type of Meeting	Date of Meeting	No. of Participant				Total	Remarks
			Stakeholders		NRDCL & DoFPS			
			Male	Female	Male	Female		
No. of meetings		Total						
Score								
b) Employment								
Sl. No	Name of Activity	Year	No. of People Engaged			Remarks		
			Male	Female	Total			
Total								
Score								
Total Score								
a) Meeting/ Consultation, Workshops			b) Employment					
Sl. No	Meeting/ Consultation	Score	Sl. No	Annual Monitoring		Score		
	Annual Monitoring			Employment with Plantation	Employment without Plantation			
1	2	2	1	>=30	>=15	3		
2	1	1	2	>=20	>=10	2		
3	None	0	3	>=10	>=5	1		
			4	None	None	0		

Form 13: Human-Wildlife Conflict Incidence and its Interventions in FMU

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits															
Indicator 5.3 Human-Wildlife Conflict Incidence and Its Interventions in FMU															
Standard: Detection and reporting of the HWCs in the FMUs															
Detection and reporting															
Month	Livestock Depredation (Nos)			Crop Damage (Qty/Area)			Property Damage			Human Injury/Loss of Life (Nos)		Others			Remarks
	No. Cases	No. of Livestock Killed	Wildlife Involved	No. Cases	Name of The Crop Damaged	Wildlife Involved	No. Cases	Property Type	Wildlife Involved	No. Cases	Wildlife Involved	No. Cases	Type of HWC	Wildlife Involved	
Total															
Score															
HWC Mitigation and Interventions															
Year	HWC Type		Type of Interventions (list)						Remarks (Describe)						
	Livestock depredation														
	Crop damage														
	Property damage														
	Human injury/loss of life														
	Others														

Score					
Total Score					
Note: Include all types of HWC.					
Guidance					
i) Verify detection and reporting of any HWC cases in the FMU from FIRMS, SMART and other sources ii) Ask local communities and their representative about HWC incidences iii) List out the HWC interventions. iv) This indicator is scored on two reporting of HWC and intervention/mitigation measures implemented. Use scoring scale below to score this indicator					
Data Source					
FMU management plan, Annual monitoring report, HWC report – SMART, FIRMS data, consultation with stakeholders					
Scoring Scale					
Detection and Reporting			Intervention/Mitigation		
Sl. No	Reporting of HWC	Score	Sl. No	Interventions	Score
1	HWC recorded and reported	2	1	Interventions for all types of HWC	3
2	HWC recorded but not reported	1	2	More than 50%	2
			3	Less than 50%	1
			4	None	0

FMU Annual Monitoring Form 15: FMU Sign and Signage

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits

Indicator 5.5: FMU Sign and Signage

Standard: All operated cable lines and plantation sites shall have standard sign boards

Month	No. of Cable Lines Operated Since First Management	No. of Cable Lines with Signage	% of Cable Lines with Signage	No. of Plantation Sites	No. of Plantation Sites with Signage	% of Plantation Sites with Signage	Signages as per Standard (Yes/No)	Recommendation/Remarks
Total								
Score								

Note: All cable lines and plantation sites shall be included

Scoring Scale

Sl. No	% of Signage	Score
1	80-100	5
2	60-80	4
3	40-60	3
4	20-40	2
5	01-20	1
6	0	0

Form 16: Achievement on OP Target

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits					
Indicator 5.6. Achievement on OP Target					
Standard: At least 90% of OP or planned target/ annual activities in the FMU achieved					
Sl. No	Activity	Unit	Target	Progress/ Status	Percent Achievement
1	Commercial AAC	m ³			
2	Rural AAC	m ³			
3	Plantation survival assessment	Cable lines (No +Area)			
4	Creation of plantation	ha			
5	Plantation maintenance	ha			
6	Operational Inventory	ha			
7	Cable line survey	No			
	a) Sanitation operation	m ³			
	b) Sanitation operation	ha			
8	Annual FMU monitoring	No			
9	Road construction	Km			
10	Road maintenance	Km			
11	Nursery creation (seedling productions)	No			
12	Seed collection	Kg			
13	Nursery Maintenance (management of old seedling stock)	No			
14	Annual FMU level Committee meeting	No			
15	Supply of NWFPs (specify name of NWFPs)	Kg			
		No			
		Truckload			
		Headload			
16	Development of sign boards	No			
17	Depot maintenance	No + Area			
18	Maintenance of vehicle and machineries	No			
19	Maintenance of infrastructure	No			
20	Maintenance of nature/ birding trail if relevant	Meter			
21	Road survey	Km			
22	Natural regeneration survey	No			
23	Plantation monitoring *	No			
24	Self-Monitoring	Yes/No			
25	Flora survey/Monitoring	Yes/No			

26	Fauna survey / Monitoring	Yes/No			
Score					
Note: List of the of the activities is not exhaustive. Additional activities implemented should be added					
Scoring Scale					
Sl. No	% Achieved	Score	Sl. No	% Achieved	Score
1	>90	10	7	>30	4
2	> 80	9	8	>20	3
3	.>70	8	9	>=10	2
4	>60	7	10	<10	1
5	>50	6	11	<1	0
6	>40	5	5		

Annexure 7: Form 17: Summary Form

Annual Monitoring Summary Form 17				
Instructions: Outcome and the scores of the annual monitoring indicator should be summarized in the FMU annual monitoring summary form. All applicable and relevant indicators should be assessed and scored. The none-relevant indicator shall be recorded as ‘NA’. The assignment of NA shall be described in the monitoring report.				
Criteria	Annual Monitoring	Total Score	Monitoring Score	Performance Percent
1. Maintenance of productive capacity of forest ecosystems	1.1 Annual Commercial timber volume removed compared with AAC	10		
	1.2 Annual Rural Timber Volume Removed Compared with AAC	10		
	1.3 Annual demand and supply of NWFP	10		
	1.4 Percent of clear-cut area regenerated through plantation and survived/established	15		
2. Conservation of biological diversity	2.1 Status of natural regeneration (NR)	10		
3. Maintenance of forest ecosystem health and vitality	3.1 Forest Pest and disease and management	5		
	3.2 Forest fire incident and response/damage assessment	5		
	3.3 Post fire management	5		
	3.4 Waste management	10		
4. Conservation and maintenance of soil and water resources	4.1 FMU area with significant soil erosion and threats to stream or spring	5		
5. Maintenance	5.1 The forest area managed	5		

and enhancement of long-term multiple socio-economic benefits	to protect cultural, social, spiritual values			
	5.2 Extent of community participation in forest management	10		
	5.3 Human-wildlife incidents and its interventions in FMU	5		
	5.4 Disposal of the timber extracted from FMU	10		
6. Maintenance and enhancement of long-term multiple socio-economic benefits	5.5 FMU Sign and Signages	5		
	5.6 Achievement on OP Target	10		

Annexure 8: Evaluation Forms

Form 1: Annual Commercial Timber Volume Removed Compared with AAC

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems					
Indicator 1.1. Annual Commercial Timber Volume Removed Compared with AAC					
Standard: Cumulative commercial timber removal ($\pm 10\%$) based on MP					
Sl.No	Year	AAC as per MP (m ³)	Achievement (m ³)	Achievement (%)	Recommendation/Remarks
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
Total					
Score					
Note: AAC is annual allowable cut and OP is operational plan					
Scoring scale					
Sl. No	Undercut%	Score	Overcut%	Score	
1	90-100	1	1-10	9	
2	80-90	2	> 10	0	
3	70-80	3			
4	60-70	4			
5	50-60	5			
6	40-50	6			
7	30-40	7			
8	20-30	8			
9	10-20	9			
11	0-10	10			

Form 2: Annual Rural Timber Volume Removed Compared with AAC

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems					
Indicator 1.2: Annual Rural Timber Volume Removed Compared with AAC					
<i>Standard:</i> Cumulative rural timber removal ($\pm 10\%$) based on MP					
Sl. No	Year	AAC as per MP (m ³)	Achievement (m ³)	Achievement (%)	Recommendation / Remarks
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
Total					
Score					
<p>Note: AAC is annual allowable cut OP is operational plan</p>					
Scoring scale					
Sl. No	Undercut%	Score	Overcut%	Score	
1	90-100	1	1-10	9	
2	80-90	2	> 10	0	
3	70-80	3			
4	60-70	4			
5	50-60	5			
6	40-50	6			
7	30-40	7			
8	20-30	8			
9	10-20	9			
10	0-10	10			

Form 3: Annual Demand and Supply of NWFP

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems							
Indicator 1.3. Annual Demand and Supply of NWFP							
Standard 1: Cumulative annual removal $\pm 10\%$ of AAC (If AAC is prescribed)							
Standard 2: NWFP % based on demand and supply and resource availability (AAC is not prescribed)							
NWFP Name							
Year	Year of Operation	Unit	AAC	Demand	Supply	Percent Achieved	Recommendation/ Remarks
Total							
Score							
Note: AAC is annual allowable cut; OP is operational plan							
Scoring Scale							
Sl. No	If AAC is Prescribed MP or NWFP Management Group				If AAC is Not Prescribed		
	Under Harvest %		Score	Over Harvest %	Score	% of Demand Met	Score
1	90-100		1	1-10	9	90-100	10
2	80-90		2	> 10	0	80-90	9
3	70-80		3			70-80	8
4	60-70		4			60-70	7
5	50-60		5			50-60	6
6	40-50		6			40-50	5
7	30-40		7			30-40	4
8	20-30		8			20-30	3
9	10-20		9			10-20	2
10	1-10		10			1-10	1
11	<1		0			<1	0

Form 4: Percent of Clear-Cut Area Regenerated Through Plantation, Survivability and Establishment

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems							
Indicator 1.4 Percent of Clear-Cut Area Regenerated through Plantation, Survivability and Establishment							
Standard: More than 80% of clear-cut area excluding roads shall be replanted and plantation are successful							
Year	Cable Line No.	Survey Year	Corridor Area (ha)	Opening Area (ha)	Area Planted (ha)	Survival % (ha)	Recommendation/ Remarks
Total / Average							
Score							
Note: Cable line wise clear-cut area, area replanted and average survival percent of plantations along each cable lines shall be compiled using table below. The clear-cut area shall include all the areas under the current year of operation while plantation area shall be reported for all area operated in previous operation year. The area under plantation and survival percent shall be verified from the annual plantation monitoring report. Measure the cable width of 10% of operated cable lines and area of all 20% of group/patch openings.							
Scoring Scale							
Clear Cut Area Planted			Survival Percent				
Sl. No	% of Area Planted	Score	Sl. No	Survival Percent (%)	Score		
1	80-100	5	1	>=90	10		
2	60-80	4	2	80-90	9		
3	40-60	3	3	70-80	8		
4	20-40	2	4	60-70	7		
5	01-20	1	5	50-60			
6	< 1	0	6	40-50	5		
			7	30-40	4		

Form 5: Change in Forest Area Inside Production Working Circle

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems						
Indicator 1.5: Change in Forest Area Inside Production Working Circle						
Standard: No reduction in production management circle area from baseline at FMU start except for changes needed to maintain conservation values.						
Year	Production Forest Area (ha)		Production Forest Loss (ha)		Cumulative Loss	
	Management Plan (A)	Forest Loss (Function Map) (B)	Road (C)	Other Development Activities (D)	Case I= A-B	Case II = A-(C+D)
Total						
Percentage Change						
Score						
Note: This indicator refers to a change in the production area inside FMU. Updated maps are available use case I and otherwise case II						
Scoring Scale						
Sl. No	Production Area Loss Inside Production WC (ha)			Score		
1	0-10			5		
2	10-20			4		
3	30-60			3		
4	60-90			2		
5	>90			1		

Form 6: Change in Forest Area Inside FMU (Overall Forest Area)

Criteria 1: Maintenance of Productive Capacity of Forest Ecosystems

Indicator 1.6: Change in Forest Area Inside FMU (Overall Forest Area)

6. Change in Forest Area Inside FMU (Overall Forest Area)

Standard: No decrease in forest area since the establishment of FMU

Year	FMU Area (A)	Forest Area In MP (B)	Forest Area Loss (GIS) (C)	Afforestation Area (D)	Forest Area Loss to Forestry Clearance (SRFL) (E)	FC for Private Land (F)	Change (I) (B-C)	Change (II) [(B+D)-(E+F)]
Total								
Score								

Note: This indicator refers change in the forest area inside FMU

Scoring Scale

Sl.No	Change in Forest Area (ha)	Score	Sl. No	Change in Forest Area (ha)	Score
1	0-10	10	7	60-70	4
2	10-20	9	8	70-80	3
3	20-30	8	9	80-90	2
4	30-40	7	10	90-100	1
5	40-50	6	11	>=10	0
6	50-60	5			

Form 7: Status of Natural Regeneration (NR)

Criteria 2: Conservation of Biological Diversity				
Indicator 2.1: Status of Natural Regeneration (NR)				
Standard: Natural regeneration is adequate and where necessary assisted/promoted				
Summary of NR Survey Report				
Cable Line No.	Year of Operation	NR Survey Year	Average Seedling	Recommendation/Remarks
Average				
Score				
Facilitating natural regeneration (list of activities implemented to promote NR)				
Survey Year	Total Cable Lines Operated	Types of Intervention	Cable Line No.	Year of Operation of Cable Line
Total Activities				
Score				
Total Score				
Note: This indicator is applicable if natural regeneration is recommended in MP				
Scoring Scale				
Sl. No	Status of NR	Score	No. of Activities Promoting NR	Score
1	Adequate	5	> 3 activities	5
2	Doubtful	3	> 2 activities	3
3	Poor	1	> =1 activity	2
			< 1activity	0
			NR adequate	5

Form 8: List of Forest Dwelling Key Flora Species. Indicators Only

Criteria 2: Conservation of Biological Diversity										
Indicator 2.2: List of Forest Dwelling Key Flora Species. Indicators Only										
Standard: No significant decrease in key flora species from FMU start										
List of Flora for Each Year										
MP	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Total										
Percentage Change										
Score										
Note: This indicator refers to the change (decrease) in species richness or alpha diversity of fauna. List main canopy species and important understorey species										
Scoring Scale										
Sl. No	% Change	Score								
1	0-20	5								
2	20-40	4								
3	40-60	3								
4	60-80	2								
5	80-100	1								

Form 10: Protection WC Connects Within FMU and External PA or Other Forest

Criteria 2: Conservation of Biological Diversity			
Indicator 2.4. Protection WC Connects Within FMU and External PA or Other Forest			
Standard: Protection working shall connect with other protected areas or FMU shall not result in forest fragmentation.			
Sl.No	Particulars	Observation (Yes/No)	Recommendation
1	Is there protected area sharing border with FMU? (Yes/No)		
2	Is the protected area connected with protection working circle of FMU? (Yes/No)		
3	Protection working circle is not disturbed. (Yes/No)		
4	FMU shares boundary with adjoining forest?		
5	FMU did not contribute to forest fragmentation? Yes/No		
Score			
Note: This indicator refers to the connectivity of the protection working circle			
Scoring Scale			
Sl. No	Indicators	Score	
1	No change in connectivity of protection WC within FMU, with external PAN/Forest and no forest fragmentation	3	
2	Disturbed the connectivity within FMU	2	
3	Connectivity disturbed both within and with external PAN and forest	1	

Form 11: Forest Pest & Disease and Its Management

Criteria 3: Maintenance of forest ecosystem health and vitality							
Indicator 3.1: Forest Pest & Disease and Its Management							
Standard: Pest and disease infestation detected, reported and managed and no increase in area affected by pest and diseases							
Pest and Disease incidence (Yes/No)		If yes, complete the table below. Refer self-monitoring form 3 and conduct physical observation during monitoring (observe for any dead and dying forest in patches)					
Year	Detection (Yes/No)	Damage Assessment (Yes/No)	Area Affected (A) (ha)	Mapping (Yes/No)	Current Area (B)	% Change in Area ((B-A)/Ax100)	Recommendation/ Remarks
Total							
Score							
Note: This indicator refers to detection, report and management of pest and diseases in the FMU which negatively impact biodiversity, productivity, etc.							
Scoring Scale							
Detection and Reporting			Spread of Pest and Disease				
Sl. No	Incident's Report	Score	Sl. No	Percentage Increase in Area Affected by Pest and Disease	Score		
1	Incidents monitored and reported timely	2	1	1-20%	8		
			2	20-40%	6		
2	Incidents reported late	1	3	40-60%	4		
			4	60-80%	2		
3	Incidents not reported	0	5	80-100%	1		
			6	>100%	0		

Form 12: Forest Fire Incidence, Response and Damage Assessment

Criteria 3. Maintenance of Forest Ecosystem Health and Vitality

Indicator 3.2: Forest Fire Incidence, Response and Damage Assessment

Standard: Damage assessment of all forest fire incidences conducted and recommend site specific interventions.

Year	Fire Incidence (Y/N)	Reporting (Y/N)	Damage Assessment (Y/N)	Area Affected (ha)	Mapping (Y/N)	Post fire Management Required (Y/N)	Post fire Management Activities Recommended	Recommendation / Remarks
Total								

Score

Note: This indicator is relevant only if there is fire incidence in the FMU an

Scoring scale

Sl. No	Forest Fire Incidence, Reporting and Damage Assessment	Score	
1	Damaged assessment for all forest fire incidences conducted and reported	5	
2	Damaged assessment for > 75% forest fire incidences conducted and reported.	4	
3	Damaged assessment for > 50 % forest fire incidences conducted and reported.	3	
4	Damaged assessment for > 25 % forest fire incidences conducted and reported.	2	
5	Damaged assessment for <25% forest fire incidences conducted and reported.	1	
6	Forest fire incidence reported but no damage assessment carried	0	

Form 13: Post Fire Management

Criteria 3: Maintenance of Forest Ecosystem Health and Vitality

Indicator 3.3: Post Fire Management

Standard: Post fire management activities fully implemented

Year	Area Affected by Fire (ha)	Estimated Volume of Timber (m ³)	Volume of Timber Extracted (m ³)	Area Replanted (ha)	Recommendation / Remarks
Total					
Score					

Note: This indicator is relevant only if there is fire incidence in the FMU and forest fire management is recommended in fire damaged report

Scoring Scale

Sl. No	Action taken	Score
1	Extraction of timber and/or reforestation completed within 1 year	5
2	> 75 % of forest fire management activities completed	4
3	> 50 % of forest fire management activities completed	3
4	> 25 % of forest fire management activities completed	2
5	< 25 % of forest fire management activities completed	1
6	Post fire management not initiated	0

Form 14: Waste Management

Criteria 3: Maintenance of Forest Ecosystem Health and Vitality						
Evaluation Indicator 3.4: Waste Management						
Standard: No waste observed in the sites and number of waste management programs implemented						
Year	Waste Management Program Conducted (Yes/No)	No. of Local Community Engaged	Waste Collection Conducted (Yes/No)	Amount Collected (Kg)	Evidence of Waste During Field Visit (Yes/No)	Recommendation/Remarks
Total						
Score						
Note: Yes = 1, No = 0. This indicator refers to the waste management in FMU						
Scoring Scale						
Sl. No	Physical Observation at Sites			Number of Awareness Programs		
	Site Observation	Score	Mid-term Evaluation	Final Evaluation	Score	
1	No evidence of waste observed in all sites	5	> = 60	> = 100	5	
2	No evidence of waste observed in > 75% sites	4	>50	>80	4	
3	No evidence of waste observed in > 50 % of sites	3	> 35	> 60	3	
4	No evidence of waste observed in > 25% of sites	2	>25	>40	2	
5	No evidence of waste observed in <25% of sites	1	>=5	>=10	1	
6	Waste observed in all sites	0	None	None	0	

Form 15: Change in Forest Area Inside Protection Working Circle

Criteria 4: Conservation and Maintenance of Soil and Water Resources							
Indicator 4.1: Change in Forest Area Inside Protection Working Circle							
Standard: No decrease in forest area mapped for protection since establishment of FMU inside the protection working circle							
Year	Forest Area Under Protection WC as Per Plan (A)	Forest Area Lost (GIS Map) (B)	Protection Forest Loss to Cable Lines (C)	Protection Forest Loss to Road (D)	Protection Forest Loss to Other Development Activities (E)	Forest Area Loss (I)= A-B	Forest Area Loss (II) = A-(C+D+E)
Total							
Percent Change							
Score							
Note: This indicator refers change in the protection area inside FMU							
Scoring Scale							
Sl. No	Forest Area Loss Inside Protection WC (ha)	Score					
1	0-10	5					
2	10-20	4					
3	30-60	3					
4	60-90	2					
5	>90	1					

Form 16: FMU Area with Significant Soil Erosion and Threats to Stream or Spring

Criteria 4: Conservation and Maintenance of Soil and Water Resources				
Indicator 4.2: FMU Area with Significant Soil Erosion and Threats to Stream or Spring				
Standard: Assess the condition of the road, stream crossing, cable corridor and interlines.				
Assessment Parameter	Condition	Summary from Self-monitoring Form (4-8)	Physical Observation/Measurement (Yes/No)	Recommendation /Remarks
Road Culverts	All road culverts not blocked (Yes/No)			
	Average Road Gradient less than 4% (Yes/No)			
Erosion protection	All culverts inlet & outlet protected against erosion (Yes/No)			
Road drains	Side drains for all road (Yes/No)			
	All roadside drains Not blocked (Yes/ No)			
Road camber	Road surface cambered (Yes/No)			
Batter	Batter slopes stable (Yes/No)			
Fill	Fill slopes stable (Yes/No)			
Stream Crossings	All stream crossing with culvert or bridge or concrete ford? (Yes/No)			
Cable lines	All streams in cut strip have buffer? (Yes)			
	Are all the buffers free of lops/tops and stumps? (Yes/No)			
	Is the maximum slope in the strip less than 100%? (Yes/No)			
	Is the strip free of channels caused by manual extraction of timber? (Yes/No)			
Interlines	No felling damaged inside interlines (Yes/No)			
	No felling of trees inside interlines (Yes/No)			
	No lopping of fodders trees inside interlines (Yes/No)			
No. of 'Yes'				
No. of 'No'				
Score				
Note: The conditions and statement listed above can influence the soil erosion and pose risk to stream/springs in the FMU.				

Scoring Scale			
Sl. No	Risk to Soil Erosion and Stream/Spring	Percent of 'Yes'	Score
1	Very low	> 80 %	5
2	Low	>60 %	4
3	Moderate	>40	3
4	Severe	>20	2
5	Very severe	<20	1
6	Extremely severe	None	0

Form 17: The Forest Area Managed to Protect Cultural, Social, and Spiritual Values

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits`

Indicator 5.1: The Forest Area Managed to Protect Cultural, Social, and Spiritual Values

Standard: The cultural, social, spiritual values/site inside FMU are protected and conserved

Sl. No	Name Of Cultural, Social or Spiritual Site	Buffer (m)	Mapping? (Yes/No)	Disturbance Inside Buffer			Recommendation /Remarks
				Felling (Yes/No)	Road (Yes/No)	Soil Erosion	

Score

Note: This indicator refers to the conservation of cultural, social and spiritual values or sites

Scoring Scale

Sl. No	Conservation/Protection of Cultural, Social and Spiritual Values/Sites	Score
1	All cultural, social and spiritual sites/values identified, mapped, buffer maintained, and conservation ensured	5
2	All cultural, social and spiritual sites/values identified, mapped, buffers maintained with significant disturbance (felling, roads, etc.,)	4
3	All cultural, social and spiritual sites/values identified, mapped with no buffer	3
4	All cultural, social and spiritual sites/values identified but not mapped	2
5	Some of cultural, social and spiritual sites/values identified and mapped	1
6	Neither identified nor mapped	0

Form 18: Extent of Community Participation in Forest Management

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits								
Indicator 5.2: Extent of Local Community Participation in Forest Management								
Standard: Involve local communities and other stakeholders in FMU management, planning, and implementation of planned activities								
a) Meetings. Consultations, workshops								
Year	Type of Meeting	Date of Meeting	No. of Participant				Total	Remarks
			Stakeholders		NRDCL & DoFPS			
			Male	Female	Male	Female		
No. of meetings		Total						
Score 1								
b) Employment								
Year	Name of Activity	Year	No. of People Engaged			Remarks		
			Male	Female	Total			
Total								
Score								
Total Score								
Note: This indicator refers to the involvement of the local communities in the FMU management activities such as road construction, logging, plantation and management planning and other operations. Include all the activities that involved community participation, and any form of employment provided to them								

a) Meeting/ Consultation, Workshops				b) Employment					
Sl. No	Meeting/ Consultation		Score	Sl. No	Mid-term Evaluation		Final Evaluation		Score
	Mid-term Evaluation	Final Evaluation			Employment with Plantation	Employment without Plantation	Employment with Plantation	Employment without Plantation	
1	>=5	>=10	5	1	>150	>100	>270	>180	7
2	>=4	>=8	4	2	>125	>75	>225	>135	6
3	>=3	>=6	3	3	>100	>50	>180	>90	5
4	>=2	>=4	2	4	>75	>40	>135	>70	4
5	>=1	>=2	1	5	>50	>30	>90	>55	3
6	None	<2	0	6	>25	>20	>45	>40	2
				7	< 25	<20	<45	<40	1
				8	None	None	None	None	0

Form 19: Human-Wildlife Conflict Incidence and Its Interventions in FMU

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits															
Indicator 5.3: Human-Wildlife Conflict Incidence and Its Interventions in FMU															
Standard: Detection and reporting of the HWCs in the FMUs															
Detection and reporting															
Year	Livestock Depredation (Nos)			Crop Damage (Qty/Area)			Property Damage			Human Injury/Loss of Life (Nos)		Others			Remarks
	No. Cases	No. of Livestock Involved	Wildlife Involved	No. Cases	Name of The Crop Damaged	Wildlife Involved	No. Cases	Property Type	Wildlife Involved	No. Cases	Wildlife Involved	No. Cases	Type of HWC	Wildlife Involved	

Total															
Score															
HWC Mitigation and Intervention															
Year	HWC Type			Type of Interventions (list)				Remarks (Describe)							
	Livestock depredation														
	Crop damage														
	Property damage														
	Human injury/loss of life														
	Others														
Score															
Total Score															
Note: Include all type of HWC															
Scoring Scale															
Detection and Reporting															
Sl. No	Reporting of HWC					Score	Sl. No	Interventions					Score		
1	HWC recorded and reported					2	1	Interventions for all types of HWC					3		
2	HWC recorded but not reported					1	2	More than 50%					2		
							3	Less than 50%					1		
							4	None					0		

Form 20: Disposal of The Timber Extracted from FMU

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits

Evaluation Indicator 5.4: Disposal of The Timber Extracted from FMU

Standard: At least 90% timber and lops/top extracted is disposed

Year	No. of cable lines / Roads/ Sanitation /	Volume Timber (m3)					Lops/Tops Volume (m3)				Other observation
		Marked (A)	Extracted (B)	Unextracted (C)	Sold/ Disposed (D)	Unsold (B-D)	Estimate (E)	Extracted (F)	Sold (G)	Unsold (F-G)	
Total											

Score

Note: All timber handed over authorized agency from all operations in FMUS (cable lines, road, sanitation, transmission lines, etc.) and Firewood includes all lops/tops

Scoring Scale

Sl. No	% of Timber and Lops/Tops Disposed	Score	Sl. No	% of Timber and Lops/Tops Disposed	Score
1	90-100	10	7	30-40	4
2	80-90	9	8	20-30	3
3	70-80	8	9	10-20	2
4	60-70	7	10	01-10	1
5	50-60	6	11	<1	0

Form 21: Revenue Generated Through Sale of Forest Produce by Commercial Operation

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits											
Indicator 5.5: Revenue Generated Through Sale of Forest Produce by Commercial Operation											
Standard: The total revenue generated from the FMU is the sum of all revenue generated by NRDCL. The actual revenue generated shall not be less than the estimated revenue or expenditure											
Year	Estimated Volume of Timber/Firewood		Projected Revenue		Actual Volume of Timber/Firewood		Actual Revenue		% Revenue Earned	Recommendation/Remarks	
	Timber	Firewood	Timber	Firwood	Timber	Firewood	Timber	Firewood			
Total											
Percent of revenue generated			Actual revenue / Projected revenue x 100								
Score											
Note:	All lops/tops are considered as firewood										
Scoring Scale											
Sl. No	Actual Revenue as Percent of Estimated Revenue		Score								
1	>90		10								
2	80-90		9								
3	70-80		8								
4	60-70		7								
5	50-60		6								
6	40-50		5								
7	30-40		4								
8	20-30		3								
9	10-20		2								
10	1-10		1								
11	0		0								

Form 22: Forest Road Construction

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits					
Indicator 5.6: Forest Road Construction					
Standard: At least of 80% of road proposed in MP constructed					
Year	Road Prescribed in Management Plan (Km)	Length of Road Planned in OP (Km)	Length of Road Constructed (Km)	% Achievement	Recommendation/Remarks
Total					
Score					
Note: Include all road inside FMU					
Scoring Scale					
Sl. No	% of Road Constructed	Score			
1	80-100	5			
2	60-80	4			
3	40-60	3			
4	20-40	2			
5	01-20	1			
6	0	0			

Form 23: Forest Road Maintenance

Criteria 5: Maintenance and Enhancement of Long-term Multiple Socio-Economic Benefits						
Indicator 5.7: Forest Road Maintenance						
Standard: Road condition is very good, and all types of vehicles are pliable						
Year	Length of Road Constructed in Previous Plans (Km)	Length of Road Constructed in Current Plan (Km)	Length of Road Planned for Maintenance (Km)	Length of Road Maintained (Km)	Condition of Road (Refer Guidance Below)	Recommendation/Remarks
Total						
Road Condition						
Score						
Note: Assess all old and new road inside FMU						
Scoring Scale						
Sl. No	Road Condition		Score			
1	Very good		5			
2	Good		4			
3	Acceptable		3			
4	Poor		2			
5	Very poor		1			

Form 24: FMU Sign and Signage

Criteria 5: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits

Indicator 5.8: FMU Sign and Signage

Standard: All operated cable lines and plantation sites shall have standard sign boards

Year	No. of Cable Lines Operated Since First Management	No. of Cable Lines with Signage	% of Cable Lines with Signage	No. of Plantation Sites	No. of Plantation Sites with Signage	% of Plantation Sites with Signage	Signages as per Standard (Yes/No)	Recommendation/ Remarks
Total								
Score								

Note: All cable lines and plantation sites shall be included

Scoring Scale

Sl. No	% of Signage	Score
1	80-100	5
2	60-80	4
3	40-60	3
4	20-40	2
5	01-20	1
6	0	0

Form 25: Legal, Institutional, and Economic Framework for Forests Conservation and Sustainable Management

Criteria 6: Legal, Institutional, and Economic Framework for Forests Conservation and Sustainable Management			
Extent to which the legal, institutional, and economic framework for forest conservation and sustainable management exist, including capacity to:			
Indicator	Standard	Observation (Yes/No)	Recommendation/Remarks
6.1 Legislation and policies supporting the sustainable management of forests	Yes		
6.2 Cross sectoral policy and programmed coordination	Yes		
6.3 Clarity and security of land and resource tenure and property rights	Yes		
6.4 Enforcement of laws related to forests	Yes		
6.5 Programmes, services and other resources supporting the sustainable management of forests	Yes		
6.6 Development and application of research and technologies for the sustainable management of forests	Yes		
6.7 Partnerships to promote the sustainable management of forests	Yes		
6.8 Public participation and conflict resolution in forest- related decision making	Yes		
6.9 Monitoring, assessment, and reporting on progress towards sustainable management of forests	Yes		

Annexure 9: Form 26: Evaluation Summary Form

Evaluation Summary Form				
Instructions: Outcome and the scores of the mid-term or final evaluation annual monitoring indicators should be summarized in the FMU Evaluation form. All applicable and relevant indicators should be assessed and scored. The non-relevant indicator shall be recorded as 'NA'. The assignment of NA shall be described in the monitoring report.				
Criteria	Evaluation	Total Score	Evaluation Score	Performance Percent
1. Maintenance of productive capacity of forest ecosystems	1.1 Annual Commercial timber volume removed compared with AAC	10		
	1.2 Annual Rural Timber Volume Removed Compared with AAC	10		
	1.3 Annual demand and supply of NWFP	10		
	1.4 Percent of clear-cut area regenerated through plantation and survived/established	15		
	1.5 Change in forest area inside production working circle	5		

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	1.6 Change in forest area inside FMU (Overall Forest Area)	10		
2. Conservation of biological diversity	2.1 Status of natural regeneration (NR)	10		
	2.2 List of forest dwelling key flora species. Indicators only	5		
	2.3 List of forest dwelling key fauna species. Indicators only	5		
	2.4 Protection WC connects within FMU and external PA or other forest	3		
3. Maintenance of forest ecosystem health and vitality	3.1 Forest Pest and disease and management	10		
	3.2 Forest fire incident and response/damage assessment	5		
	3.3 Post fire management	5		
	3.4 Waste management	10		
4. Conservation and maintenance of soil and water resources	4.1 Change in forest area inside protection working circle	5		
	4.2 FMU area with significant soil erosion and threats to stream or spring	5		
5. Maintenance and enhancement of long-term multiple socio-economic benefits	5.1 The forest area managed to protect cultural, social, spiritual values	5		
	5.2 Extent of community participation in forest management	10		
	5.3 Human-wildlife incidents and its interventions in FMU	5		
	5.4 Disposal of the timber extracted from FMU	10		
	5.5 Revenue generated through sale of forest produce by commercial operation	10		
	5.6 Forest Road Constructed as per forest management plan	5		
	5.7 Forest Road maintained as per plan	5		
	5.8 FMU Sign and Signages	5		
6. Legal, institutional, and economic framework for forest conservation and sustainable management	6.1 Legislation and policies supporting the sustainable management of forests	Yes/No		
	6.2 Cross sectoral policy and programmed coordination	Yes/No		
	6.3 Clarity and security of land and resource tenure and property rights	Yes/No		
	6.4 Enforcement of laws related to forests	Yes/No		
	6.5 Programs, services and other	Yes/No		

	resources supporting the sustainable management of forests			
	6.6 Development and application of research and technologies for the sustainable management of forests	Yes/No		
	6.7 Partnerships to promote the sustainable management of forests	Yes/No		
	6.8 Public participation and conflict resolution in forest-related decision making	Yes/No		
	6.9 Monitoring, assessment, and reporting on progress towards sustainable management of forests	Yes/No		



Local Forest Management Area (LFMA)

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4. Monitoring and Evaluation of Local Forest Management Area (LFMA)

4.1. Introduction

The National Forest Policy 2011 emphasized on bringing all forests under the scientific management, which was further reiterated that the Forest and Nature Conservation Act (FNCA) 2023. The Local Forest Management Area (LFMA) Plan is designed to bring all State Reserved Forest land (SRFL) under management regimes for sustained supply of forest products and ecosystem services. This focuses on sustainable management of all forest resources which are not covered by other management regimes. As of 2023, there are 85 Local Forest Management Area in the country (AFS, 2023). LFMA was introduced first in 2005 and is now implemented as per the prescription prescribed in Chapter III of the Forest and Nature Conservation Code of Best Management Practices of Bhutan, 2021 (hereinafter referred to as the “Code”).

LFMA Plan is a ten-year forest management plan for sustainable management and utilization of forest resources at gewog which is prepared by the Divisional Forest Offices (DFO). Further, resource utilization in the Protected Area is managed following prescription for the development and management of the LFMA. Forest Resources Planning and Management Division (FRPMD) and Forest Monitoring and Information Division (FMID) provide technical support in the preparation and implementation of the management plans. The LFMA Plan is approved by the Head of the Ministry. Implementation of the plan is monitored at various levels by Range Officer, Divisional Forest Office/Protected Areas, and Department. This Chapter shall discuss in detail the Monitoring and Evaluation (M&E) of the LFMA.

4.2. Objectives of Monitoring and Evaluation

Monitoring is the examination of whether plan inputs, activities and outputs are successfully implemented according to the planned schedule, while evaluation is the examination of whether plan’s objectives are being achieved which requires longer time to provide a realistic assessment of progress in fulfilling objectives. To ensure successful alignment of LFMA plans to national policies and goals and implementation of prescriptions in the management plan, a two-stage verification process is recommended. The first stage shall involve monitoring of on-ground activities in the short term by the concerned offices, while the second stage shall involve evaluating the plan prescriptions with long-term objectives by a committee constituted as per the *Code* or any technical guidelines issued by the Department.

4.2.1 Objectives of Monitoring

- To ensure that input deliveries, work schedules, targeted output and other required actions are implemented as per the management plan.
- Collect information on physical, and environment indicators for annual monitoring of LFMA.
- Rectify deficiencies indicated by annual monitoring report.

4.2.2 Objectives of Evaluation

- To check if objectives of plans are fulfilled.
- To evaluate performance of each LFMA
- To suggest changes and improvement during the revision of LFMA plan.

4.3. Types of Monitoring and Evaluation

The Department of Forests and Park Services (DoFPS) shall conduct an annual monitoring followed by a mid-term and final evaluation. This is mainly to assess and track the progress of the implemented LFMA management plans and evaluate the overall impacts on sustainable forest management. Annual monitoring shall be carried out by the concerned Chief Forestry Officer (CFO). However, midterm and final evaluation shall be carried out by FMID. Table 4.1 provides information on roles and responsibilities and periodicity for conducting M&E.

Table 4.1. LFMA Monitoring & Evaluation Summary Information

Particular	Annual Monitoring	Mid-term Evaluation	Final Evaluation
Objective	<ul style="list-style-type: none"> • Review implementation and achievement as per management plan and annual operational plan 	<ul style="list-style-type: none"> • Review achievement of objectives of plans • Review implementation of annual monitoring report • Recommend mitigation measures in for second half of the management plan 	<ul style="list-style-type: none"> • Review achievement of objectives of plans • Review implementation of mid-term evaluation report • Recommend mitigation measures in final plan period and improvement in subsequent plan
Timeframe	<ul style="list-style-type: none"> • November to December 	<ul style="list-style-type: none"> • 1st quarter of 6th Year of plan period 	<ul style="list-style-type: none"> • 1st quarter of 10th year of plan period
Lead role	<ul style="list-style-type: none"> • Concern CFO 	<ul style="list-style-type: none"> • FMID 	<ul style="list-style-type: none"> • FMID
Collaborator	<ul style="list-style-type: none"> • FMID 	<ul style="list-style-type: none"> • Concern CFO, FRPMD 	<ul style="list-style-type: none"> • Concern CFO, FRPMD

4.4. Monitoring and Evaluation Process

Effective M&E involves different steps from planning, data collection, data analysis, identification issues and challenges, reporting, information archiving and implementation of recommendations. These steps are briefly described in table below:

Table 4.2. Monitoring & Evaluation Steps

Steps	Annual Monitoring	Mid-term Evaluation	Final Evaluation
1. Planning	<ul style="list-style-type: none"> September to October Concern Chief Forestry Officer to initiate the process through FMID. 	<ul style="list-style-type: none"> 1st quarter of 6th year of MP. Concern Chief Forestry Officer to initiate the process through FMID. 	<ul style="list-style-type: none"> 1st quarter of 10th year of MP Concern Chief Forestry Officer to initiate the process through FMID.
	2. Data sources for verification	<ul style="list-style-type: none"> MP, record keeping forms, tree marking book Forest Information Reporting and Monitoring System (FIRMS), Government to Citizen (G2C) system, Online Forestry Services (OFS) Field verification 	<ul style="list-style-type: none"> MP, annual record keeping forms, annual monitoring report, FIRMS, G2C, OFS Field verification
3. Review of information	<ul style="list-style-type: none"> Review data sources and fill information in the Annual Monitoring Forms (AMF) 	<ul style="list-style-type: none"> Review the MP, 5 years annual monitoring reports, LFMA record, plantation monitoring and evaluation reports, plantation journals, NWFP-MG annual monitoring and evaluation report. 	<ul style="list-style-type: none"> Review the MP, 9 years annual monitoring reports, LFMA record, plantation monitoring and evaluation reports, plantation journals, NWFP-MG annual monitoring and evaluation report.
4. Information gathering in M & E Forms	<ul style="list-style-type: none"> Annual Monitoring Form 	<ul style="list-style-type: none"> Evaluation Form 	<ul style="list-style-type: none"> Evaluation Form
5. Desk based verification	<ul style="list-style-type: none"> First day of the program to be fixed for information gathering 	<ul style="list-style-type: none"> Evaluating team shall review and compile annual monitoring reports of 5 years before conducting evaluation 	<ul style="list-style-type: none"> Evaluating team shall review and compile annual monitoring reports of 10 years before conducting evaluation
	<ul style="list-style-type: none"> Range Offices to provide information or documents to CFO 	<ul style="list-style-type: none"> First day of the program to be fixed for information gathering. 	<ul style="list-style-type: none"> First day of the program to be fixed for information gathering.

	for verification	<ul style="list-style-type: none"> Concern CFO and field focal to present on the progress of LFMA and provide documents for verification 	<ul style="list-style-type: none"> Concern CFO and field focal to present on the progress of LFMA and provide documents for verifications
6. Review and field verification	<ul style="list-style-type: none"> Monitoring official /team shall carry out field verifications 	<ul style="list-style-type: none"> Evaluating official/ team shall visit LFMA (1st quarter of 6th year of MP) to gather data and verify the information provided by the concerned offices. 	<ul style="list-style-type: none"> Evaluating official/team shall visit LFMA (1st quarter of 10th year of MP) to gather data and verify the information provided by the concerned offices
	<ul style="list-style-type: none"> Review implementation of the recommendation of past annual monitoring reports 	<ul style="list-style-type: none"> Review the implementation of past annual monitoring reports 	<ul style="list-style-type: none"> Review the implementation of past annual monitoring reports and mid-term evaluation report
7. Scoring	<ul style="list-style-type: none"> Based on the instruction provided in the annual monitoring form, objectively score the monitoring indicators 	<ul style="list-style-type: none"> Based on the instruction provided in the evaluation form, objectively score the monitoring indicators 	<ul style="list-style-type: none"> Based on the instruction provided in the evaluation form, objectively score the monitoring indicators
8. Scoring process	<ul style="list-style-type: none"> After desk-based verification of documents, the monitoring team shall visit LFMA to verify and gather data as per the instructions provided to fill up the monitoring forms. While filling up the forms, the team shall follow following procedure: Refer and arrange a list of documents/data required to assess each indicator. Read the procedure for assessing each indicator. Assess the progress of each indicator. Assess score for each indicator based on the Score 	<ul style="list-style-type: none"> After desk-based verification of documents, the evaluating team shall visit LFMA to gather data using evaluation form and to verify information provided in annual monitoring reports. While filling up the evaluation forms, the team shall follow following procedure: Refer and arrange a list of documents/data required to assess each indicator. Read the procedure for assessing each indicator. Assess the progress of each indicator. Assess score for each indicator based on the Score Table Record corrective action that needs to 	<ul style="list-style-type: none"> After desk-based verification of documents, the evaluating team shall visit LFMA to verify and gather data to carry out monitoring based on monitoring forms. While filling up the forms, the team shall follow following procedure: Refer and arrange a list of documents/data required to assess each indicator. Read the procedure for assessing each indicator. Assess the progress of each indicator. Assess score for each indicator based on the Score Table under column Record corrective action that needs to be taken for each indicator, if any. Add the scoring for each indicator to get the total score of the LFMA.

	<ul style="list-style-type: none"> Record corrective action that needs to be taken for each indicator, if any. Add the scoring for each indicator to get the total score of the LFMA. For each corrective action identified and recommended, back up with pictorial or other evidence, whenever possible. 	<ul style="list-style-type: none"> be taken for each indicator, if any. Add the scoring for each indicator to get the total score of the LFMA. For each corrective action identified and recommended, back up with pictorial or other evidence, whenever possible. 	<ul style="list-style-type: none"> For each corrective action identified and recommended, back up with pictorial or other evidence, whenever possible.
9. Corrective actions	<ul style="list-style-type: none"> Monitoring form has a column in which corrective actions for each indicator can be noted. CFO shall indicate and note corrections actions in the form. 	<ul style="list-style-type: none"> Evaluation form has a column in which corrective actions for each indicator can be noted. Evaluating official shall indicate and note corrections actions in the form. 	<ul style="list-style-type: none"> Evaluation form has a column in which corrective actions for each indicator can be noted. Evaluating official shall indicate and note corrections actions in the form
10. Report preparation	<ul style="list-style-type: none"> Prepare a detailed report and submit to FMID 	<ul style="list-style-type: none"> Prepare a detailed report and submit to FMID 	<ul style="list-style-type: none"> Prepare a detailed report and submit to FMID
11. Report submission	<ul style="list-style-type: none"> Annual monitoring reports along with copies of completed forms need to be submitted to FMID with a copy to FRPMD. Also, monitoring reports should be stored both in printed/soft versions and produced when asked during the LFMA evaluation. 	<ul style="list-style-type: none"> Evaluating team shall submit within one week after conducting evaluation. Evaluation reports to be stored both in printed/soft versions in FMID 	<ul style="list-style-type: none"> Evaluating team shall submit within one week after conducting evaluation Evaluation reports to be stored both in printed/soft versions in FMID
10. Information archiving	<ul style="list-style-type: none"> Maintain a back-up copy with, DFO Office and submit copy to FMID 	<ul style="list-style-type: none"> Maintain a back-up copy DFO Office and submit copy to FMID 	<ul style="list-style-type: none"> Maintain a back-up copy with DFO Office and submit copy to FMID

4.5. Performance Assessment and Rating

The performance of the LFMA shall be monitored and/or evaluated on 7 indicators and LFMA as a whole. The performance percent shall be estimated as

$$Performance\ percent = \frac{Points\ scored}{Total\ Points} \times 100$$

While there is no standard performance rating of the sustainability of the LFMAs, the overall performance of the LFMA shall be rated as described below in the Table 4.3 for general reflection of overall LFMA management.

Table 4.3. Performance Assessment and Rating

Performance Percentage	Category	Description
90-100%	Totally acceptable	Forest management practices are excellent and significantly exceed sustainability standards.
75-90	Acceptable	Forest management practices meet the basic requirements and standards for sustainability.
60-75	Slightly acceptable	Forest management practices are close to being satisfactory but still have some deficiencies.
45-60	Slightly unacceptable	Forest management practices are somewhat lacking and do not fully meet sustainability standards.
30-45	Unacceptable	Forest management practices are inadequate and fall well below acceptable standards.
<30	Totally unacceptable	Forest management practices are extremely poor and fail to meet basic sustainability criteria.

4.6. Annual Monitoring

The concerned field office shall conduct annual monitoring and assess the performance of the LFMA based on 7 indicators. For the annual monitoring, the team shall gather information from authentic resources such as tree marking book, reports, and monitoring reports. Annual Monitoring has three parts:

1. General Information of LFMA;
2. Annual monitoring form and scoring; and
3. Summary of Indicator score and its weightage.

The following section provide a brief description of the annual monitoring forms and guidance on filling up the forms.

4.6.1 Annual Monitoring Forms

Part A: General Information

Name of LFMA:		
Plan Period:		
Objective of Plan:		
Name of Division/ Park Office:		
LFMA Area (ha):		
Forest Area inside LFMA (ha):		
Monitoring Date:		
Name of Monitoring Official	Designation	Office
Guidance for filling in Part A of general information of LFMA		
General information about LFMA, objective and monitoring details are to be entered by the monitoring official.		

Part B. Annual Monitoring Form and Scoring

Part B of the annual monitoring comprises the actual annual monitoring forms and scoring tables. It consists of 7 monitoring forms to gather the information required for assessing 7 indicators of monitoring. Each form also has guidance to direct the monitoring team in filling up the forms and scoring for each indicator as given in detail below. **Annexure 1** consists all the monitoring forms. The monitoring team shall gather information using the monitoring form 1-7 and determine the scores of individual indicators. The sum of secured points by each indicator divided by the total points (58 point in total) is the Score, which when multiplied by 100 shall give score %. These shall determine the performance of the LFMA and accordingly necessary interventions, if required shall need to be prescribed.

The following tables are the monitoring forms of all the indicators subjected for assessment and the monitoring team shall gather the information during the monitoring using these forms. The information gathered in the monitoring forms shall guide monitoring team to score the indicators.

Indicator 1: Timber and Firewood Removal

1. Annual Timber Volume Removed Compared with AAC.

Note: Annual removal not greater than +/- 10% of the annual AAC

This indicator refers to the volume of timber removed against the prescribed AAC in the LFMA management plan. All timber removed for any purpose including those timber removed on adhoc basis, construction timber, other construction in rural areas, firewood, fencing pots, flagpoles, etc. The timber removed from LFMA shall be computed in the *annual monitoring form 1*.

The concerned offices shall maintain a monthly record of timber volume that is removed from the LFMA using the monitoring form 1. The firewood volume supplied for the rural or commercial purpose shall be recorded using the same form. The total volume of timber extracted from the assigned block shall be recorded and note the percent achieved on monthly basis. During the LFMA monitoring, the team shall use the information recorded in this form and determine the total timber volume extracted compared with AAC and score the indicator 1.

Annual Monitoring Form 1: Annual timber and firewood removal								
Year of Operation:								
Timber					Firewood			
Month	AAC (m ³)	Progress (m ³)	Percent Achieved	Remarks	Annual supply potential	Progress (m ³)	Percent Achieved	Remarks
January								
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								
Total								
Aggregate Target (Timber +Firewood)								
Aggregate Achievement (Timber +Firewood)								
SCORE								
<p>Where,</p> <p><i>Year of operation</i> is calendar year, e.g. 2023, 2024, etc.</p> <p><i>AAC</i> is annual allowable cut as per the management plan or operational plan (standing volume, m³)</p> <p><i>Progress (timber)</i> is the annual volume of timber extracted from LFMA, (standing volume, m³). The progress includes sum of the total timber allotted for house construction/renovation, other timber supplied or allotted for rural purpose, and other adhoc timber allotted from the LFMA.</p> <p><i>Progress (firewood)</i> is the annual volume of firewood allotted from the LFMA area.</p> <p>Based on information gathered in table above, determine the undercut or overcut and score the indicator using scoring table</p>								
<p>Documents/data required:</p> <ul style="list-style-type: none"> • Annual monitoring report (AMR) • Ad-hoc timber allocation based on approval (Pest and Diseases, Forest Fire, Developmental) • Records of illegal activities (FIRMS) • Tree marking book (refer TMB provided in <i>Code</i>) • Summary sheet (Refer summary sheet format provided in <i>Code</i>) 								
<p>Guidance:</p> <ul style="list-style-type: none"> • Aggregate total timber (ATT) volume extracted over one year • Calculate annual AAC achievement by % = (Aggregate Achievement / Aggregate Target) *100 • Determine whether timber is undercut or overcut. • Give a score based on the score Table. 								

- Take note of corrective action (Correction action column), if any.

Score Table

Sl. No	Undercut%	Score	Overcut%	Score	Corrective Actions
1	90-100	1	1-10	9	
2	80-90	2	>10	0	
3	70-80	3			
4	60-70	4			
5	50-60	5			
6	40-50	6			
7	30-40	7			
8	20-30	8			
9	10-20	9			
10	0-10	10			

Note:

Overcut – When annual timber harvest is greater than its prescribed annual AAC, the point shall be deducted from overall score as per the overcut scoring table.

Undercut – When annual timber harvest is less than its prescribed annual AAC by less than 10% of its AAC, the point shall be given as per the undercut score table.

Indicator 2: Annual Demand and Supply of NWFPs

2. Annual Demand and Supply of NWFP

Note: NWFP % based on demand and supply and resource availability or the prescribed AAC

This indicator refers to the quantity of non-wood forest products removed sustainably from the LFMA. If AAC is prescribed in a management plan or other prescriptions such as NWFP management plan, the progress shall be assessed based on AAC and the quantity supplied. In the event, there is no prescription either in the management plan or NWFP groups, this indicator shall be assessed based on demand and supply. CFO shall conduct NWFP demand assessment annually and the assessment shall be carried out separately for different NWFPs. The progress of this indicator shall be average of all NWFPs.

The concerned offices shall maintain a monthly record of non-wood forest products removed and supplied from the LFMA using the *monitoring form 2*. Using this form, the NWFPs extracted from the assigned block shall be recorded and note the quantity demanded against NWFPs supplied. The monitoring team shall use the information recorded in this form and determine the total quantity of NWFPs demanded and supplied are as per the AAC and score the indicator 2.

Annual Monitoring Form 2: Annual Demand and Supply of NWFPs

Year of Operation						
Month	NWFP Name	Unit	Demand	Supply	Percent Achieved	Remarks
January						
February						
March						
April						
May						
June						
July						
August						

September						
October						
November						
December						
Total						
Score						

Data Source: Annual record keeping form, annual monitoring reports, OFS, FIRMS, & demand assessment reports

Guidance:

- Aggregate total quantity of NWFP demand received in one year.
- Determine % of total demand met using the formula: (Quantity supplied /quantity demanded) *100.) or quantity supplied / AAC X 100
- Give a score based on the score Table.
- Take note of corrective action (Correction action column), if any.

Score Table

Sl. No	% of Demand Met	Score	Overcut%	Score	Corrective Actions
1	90-100	10	1-10	9	
2	80-90	9	>10	0	
3	70-80	8			
4	60-70	7			
5	50-60	6			
6	40-50	5			
7	30-40	4			
8	20-30	3			
9	10-20	2			
10	1-10	1			
11	<1	0			

Indicator 3: Percent of Plantation Survival or Established

3. Percent of plantation Survival or Establishment

Note: Includes plantation carried out inside the LFMA

The barren and degraded area inside the LFMA has to be assessed and brought under the plantation for restocking as per the management of LFMA.

This indicator refers to the percentage of forest area replanted and survival percent of each plantation site. The survival percent of each plantation shall be carried out annually by concerned CFO in collaboration with any authorized agency and data shall be made available to monitoring or evaluation team at the time of M&E. Concerned CFO shall determine the plantation area by measuring and mapping the forest area that is put under the plantation its width and length using GPS or any other mapping method. Concerned CFO in collaboration with any authorized agency shall carryout annual monitoring of each plantation site and assess the survival percent of each plantation sites and report shall be made available to monitoring and evaluation team. The monitoring of plantations shall be done using the procedures prescribed in this framework.

Annual Monitoring Form 3: Percent of Plantation Survival or Established

Month	Area Targeted for Plantation (Ha)	Area Planted (Ha)	Survival %	Remarks
January				

February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				
Total/Average				
Score				

Guidance:

- Map planted area within LFMA
- Determine total no of planted seedlings that have survived.
- Determine % of planted seedling that has survived or established:
(Total seedling counted/ total seedlings planted) x 100)
- Give score based on Score Table

Score Table

Sl. No	Plantation Survival Assessment	Score	Corrective Actions
1	>90% (Excellent)	5	
2	76-90% (Very good)	4	
3	51-75% (Good)	3	
4	26-50 % (Satisfactory)	2	
5	= < 25 (Poor)	1	

Sl. No	Plantation carried out	Score	Corrective Actions
1	80-100	5	
2	60-80	4	
3	40-60	3	
4	20-40	2	
5	1-20	1	
6	< 1	0	

Indicator 4: Percent of Thinning Carried Out as Compared to Thinning Target

4. Percent of Thinning Carried Out as Compared to Thinning Target

This indicator refers to the number or area in which scientific thinning are been carried out inside the LFMA as per the prescription in the management plan. The concerned Range office use the existing field data or shall map the thinning area using drone or other technologies, and update summary sheet information. This information shall be made available to the monitoring team as per the given form. Monitoring officials shall carry out physical verification of the sites, write observation and score.

Thinning target based on area and volume are pre-determined and implemented as planned. The concerned site office shall gather the information using the *monitoring form 4* and determine the extraction is being carried out as prescribed in the LFMAP and provide the indicator score. If the thinning is not prescribed in

the management plan, this indicator may not be assessed. Thinning inside the LFMA shall be within strictly within the prescribed AAC of the LFMA.

Annual Monitoring Form 4: Percent of thinning carried out as compared to thinning targets

Year of Operation:

Sl. No	Compartment Name	Thinning Target			Progress			Observations
		Area	No	Vol	Area	No	Vol	
Total								
Score								

Documents/data source: Annual monitoring report & drone maps/google maps/ GIS maps. Image processing software.

Guidance:

- Determine or get the total number and area of thinning carried out.
- Map thinning area with drone or conventional method right
- Mention reasons for thinning
- Give score based on Score Table

Score Table

Sl. No	Thinning Carried Out (Area %)	Score	Corrective Actions
1	80-100	5	
2	60-80	4	
3	40-60	3	
4	20-40	2	
5	1-20	1	
6	<1	0	

Indicator 5: Pest and Disease Management

5. Pest and Disease Incidence and its Interventions

Forest pests and diseases directly or indirectly affect ecosystem services, biodiversity, and sustainable forest management. They could have strong and irreversible adverse effects on forest productivity and ecosystem dynamics owing to their long-term influences as a result of epidemics of different pests and diseases. Therefore, this indicator refers to the timely detection and management of pest and disease in LFMA. The timely detection shall mean the extent of pest and disease infestation is less than 1 ha, infected trees are not dead but dying symptoms observed.

Monitoring or evaluation team may assess pest and diseases in two categories i) detection of pest and diseases, and, ii) intervention/management of pest and diseases

The detection of pest and disease may include the reporting of infestation of pest and disease and damage assessment while intervention shall include management of pest and diseases as provisioned in the *Code*. If the area of pest and disease infestation has increased from initial reporting, the monitoring team may consider as “*action taken late*” or “*not taken*”.

Annual Monitoring Form 5: Pest and disease incidence & its interventions

Month	Detection (Y/N)	Reporting (Y/N)	Damage Assessment (Y/M)	Area Affected (ha)	Affected Area Mapped (Y/N)	Sanitation Operation Start Month	Intervention List	Recommendation /Remarks
January								
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								
Score								
Note: Y - yes, N - no								

Score Table

Sl. No	Incidence’s Report	Score	Corrective Actions
1	Incidence monitored and reported timely	2	
2	Incidence reported late	1	
2	Incidence not reported	0	
Score.....			

Score Table			
Sl. No	Interventions	Score	Corrective Actions
1	Action taken within stipulated time	2	
2	Action taken late	1	
3	Action not taken	0	
Score.....			

Indicator 6: Forest Fire Management

6.Forest Fire Management

Assess the response time to forest fire incidences

1. Forest fire incidence and response: This indicator refers to occurrence, detection, reporting and response to the forest fire by mobilization of the forest fire suppression team. Since, it is very difficult to determine the fire's response time and any information on the fire incidence shall be assessed together with forest fire damage assessment, which shall also report the post fire management prescriptions.

2. Post fire management: This indicator refers to the activities implemented as part of post fire management such as removal of the damaged trees and reforestation. The information on volume of timber harvested as well as number of seedlings planted shall be made available and computed in *annual monitoring form 6*. The extraction of timber and reforestation activities shall be completed within one year from the date of fire incidence to avoid deterioration of the timber quality and reforest the area as soon as possible. The monitoring team may skip scoring for the post fire management if the post fire management is not required based on the damage assessment report.

Annual Monitoring Form 6: Forest Fire Management

Month	Fire Incidence (Y/N)	Reporting (Y/N)	Damage Assessment (Y/M)	Area Affected (ha)	Affected Area Mapped (Y/N)	Post Fire Management Required (Y/N)	Post Fire Management Activities Recommended	Recommendation /Remarks
January								
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
Score								

Note: Y - yes, N - no			
Documents/Data required: Annual monitoring report, FIRMS data and SMART report			
Guidance:			
<ul style="list-style-type: none"> Compare forest fire incidents report, if available from annual monitoring report (if any). Review the forest fire damage assessment report Verify whether or not the activity is included in the annual OP. 			
Score Table			
Sl. No	Response to Forest Fire	Score	Corrective Actions
1	Damaged assessment for all forest fire incidences conducted and reported	5	
2	Damaged assessment for > 75% forest fire incidences conducted and reported.	4	
3	Damaged assessment for > 50 % forest fire incidences conducted and reported.	3	
4	Damaged assessment for > 25 % forest fire incidences conducted and reported.	2	
5	Damaged assessment for <25% forest fire incidences conducted and reported.	1	
6	Forest fire incidence reported but no damage assessment carried	0	
Score			
Guidance:			
<ul style="list-style-type: none"> Review the forest fire damage assessment report and list out the post fire management activities recommended Review the date of fire incidence and start of the post fire management activities Review the status of post fire management activities and fire incidence report, if available from annual monitoring report. Determine what kind of post fire management has been taken after the fire. 			
Score Table			
Sl. No	Action Taken	Score	Corrective Actions
1	Extraction of timber and/or reforestation completed within 1 year	5	
2	> 75 % of forest fire management activities completed	4	
3	> 50 % of forest fire management activities completed	3	
4	> 25 % of forest fire management activities completed	2	
5	< 25 % of forest fire management activities completed	1	
6	Post fire management not initiated	0	
Score			

Indicator 7: Waste Management

7. Waste Management
Determine trend of waste over years on basis of waste management activities conducted.

The waste generation is constantly increasing due to several factors such as growing population, developmental activities, changes in the consumer habits, etc. which poses significant environmental challenges. It has been noticed that there is evidence of improper waste disposal and management within the SRF area, which may lead to greater environmental problems in the form of land pollution, water pollution, etc. in future. Therefore, this indicator measures the proper disposal and management of waste within the SRF land. The offices shall maintain the records of all waste management activities carried out inside the SRF land and this information shall be used by monitoring team along with the field observations made in the field.

To assess the waste management programs conducted in the LFMA, the information on awareness program carried out and engagement of stakeholders shall be recorded using the *annual monitoring form 7* by the concerned offices. Inside and within the LFMA, various waste management programs initiated shall be recorded and the monitoring team shall use this information and provide score.

Annual Monitoring Form 7: Waste Management

Month	No. of Waste Management Programs/Awareness Conducted	No. of Local Community Engaged	Amount of Waste Collected	Evidence of Waste During Field Visits
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				
Total				
Score				

Data source: Advocacy/awareness reports, cleaning campaign and or Zero Waste Hour observed reports

Guidance:

- Observe the presence or absence of waste during field visit.
- Verify waste cleaning reports
- Score the indicator as per the score table.
- Note corrective actions, if any.

Score Table

Observation	Score	Corrective Actions
No evidence of waste observed during field visit	1	
Waste observed while visiting field	0	
Score		

Score Table		
No. of awareness program conducted	Score	Corrective Actions
More than 5 times	3	
2-4	2	
1-2	1	
0	0	
Score.....		

On completion of annual monitoring, the team shall compile the score for each indicator and calculate the score % which is the achievement percent.

C. Summary of Indicator Score and Its Achievement Score (%)

Sl. No	Indicators	Total score	Secured Score	Score %
1	Annual timber volume removed	10		
2	Annual demand and supply of NWFP	10		
3	Percent of plantation survival or establishment	10		
4	Percent of thinning carried out	10		
5	Pest and disease incidents and its interventions	4		
6	Forest fire management	10		
7	Waste management	4		
Total		58		

Guidance for filling in Part C of Annual Monitoring Form

Score: Each indicator has been assigned a score with highest score being 10 and 4 with “0” being the lowest score depending on indicator. The overall total score of the seven indicators is 58 points. During monitoring each indicator shall be carefully assessed by the monitoring team and determine the scores. Based on the performance and achievement of planned targets the scores shall be given. Monitoring team shall review the information and visit the sites such as plantation or thinning or sanitation operation sites and validate the activities.

Score %: After monitoring team has determined the indicator scores with proper analysis of the information and field verification add the secured scores of all the indicators. And determine the score in percentage (%).

An example:

Total secured score = 8(*10) + 6(10) +7(10) + 5(10) + 1(4) + 5(10) + 4(4)

= 36 points

Score % = Total secured score/Total score*100

=36/58*100

=62.07%

****highest point of an indicator***

Accordingly, find out in which performance category does a monitored LFMA fall into based on the score %. The management of LFMA may or may not be fulfilling the principle of sustainability. The management may have to adopt the measures to address the issues identified during the monitoring.

4.6.2 Annual Monitoring Reporting Format

The concerned CFO shall submit Annual Monitoring report in excel format in January to FMID for review.

- 1. Executive Summary**
- 2. Introduction**
- 3. Monitoring Objectives**
- 4. Methodology**
- 5. Description and Analysis of the Indicators**
- 6. Summary on Indicators and Score**

Indicator	Target	Unit	Achievement	Score	Challenges	Recommendations	Responsibility	Remarks

7. Summary of Performance Assessment and Rating

Sl. No	Indicator	Total Score	Score	Score %

8. Other Observations

Data compilation, verification and analysis to be done using data entered in FIRMS/OFS/Records

- Key Flora and Fauna in LFMA
- Forest Offense
- Forest Area removed for Developmental Activities
- Human Wildlife Conflict (HWC)

9. Conclusion

10. Annexure

- Duly filled in annual monitoring forms (also excel sheet)
- Thinning area map
- Plantation creation map

4.7. Mid-term and Final Evaluation

FMID shall coordinate and conduct the mid-term and final evaluation during the 1st quarter of the 6th and 10th year respectively. There are 12 indicators for the evaluation, against which the LFMA plans and activities are assessed upon. The following section provide a brief description of the evaluation forms and guidance on filling up the forms.

4.7.1 Evaluation Forms

Like the annual monitoring form, the evaluation also consists of three parts; a) General information; b) evaluation form; and c) indicator score and weightage.

Part A. General Information

Name of LFMA:		
Plan period:		
Objective of Plan:		
Name of Division/Park Office:		
Total Area (ha):		
Forest Area inside LFMA (ha):		
Evaluation Date:		
Name of Evaluation official	Designation	Office

Guidance for filling in Part A of evaluation

General information about LFMA, objective and M & E details are to be entered by the Evaluation team members as given in subsequent table.

B. Evaluation forms and scoring

LFMA shall be evaluated on a total of 12 indicators and each indicator shall be assessed and scored based on performance. The average of cumulative scores of 5 years and 9 years shall be used for mid-term and final evaluation. For this, the evaluation team shall compile the information using the evaluation forms 1-12 for 12 indicators. Based on the score secured the evaluation team shall rate the performance of the LFMA.

Evaluation team shall gather the data using the evaluation forms and simultaneously determine the scores for all the indicators as per the guidance provided for each indicator.

Indicator 1: Timber and Firewood Removal as Compared to Target

1. Annual Timber Volume Removed Compared with AAC.

Note: Annual removal not greater than annual AAC +/- 10%)

This indicator refers to the sum of volume of timber removed against the cumulative AAC prescribed in the LFMA management plan over the five years for mid-term evaluation and 9 years for the final evaluation. All form of timber and firewood removed from the LFMA such as construction timber, other construction in rural areas, firewood, fencing pots, flagpoles, etc. shall be included. The timber removed from LFMA shall be computed in as per the *evaluation form 1*.

The concerned offices shall maintain a monthly record of volume of timber removed from the LFMA using the data compilation sheet A. The firewood volume supplied for the rural or commercial purpose shall be recorded using the same table. The total volume of timber extracted from the assigned block shall be recorded and note the percent achieved on monthly basis. During the LFMA evaluation, the team shall use the information recorded in the *annual monitoring form 1* and compute in the evaluation form 1 to determine the total timber volume extracted compared with AAC and score the indicator 1.

Evaluation form 1: Timber and firewood removal

Year of Operation								
Timber					Firewood			
Year	AAC (m3)	Progress (m3)	Percent Achieved	Remarks	Annual Supply Potential	Progress (m3)	Percent Achieved	Remarks
1 st								
2 nd								
3 rd								
4 th								
5 th								
6 th								
7 th								
8 th								
9 th								
10 th								
Total								
Cumulative AAC (timber + Firewood)								
Cumulative Achievement (Timber + Firewood)								
SCORE								

Where,

- Year of operation is calendar year, e.g., 2023, 2024, etc.
- AAC is annual allowable cut as per the management plan (standing volume, m³)
- Progress (timber) is the annual volume of timber extracted from LFMA, (standing volume, m³). The progress includes sum of the total timber allotted for house construction/renovation, other timber supplied or allotted for rural purpose, and other adhoc timber allotted from the LFMA.
- Progress (firewood) is the annual volume of firewood allotted from the LFMA area.
- Based on information gathered in form above, determine the undercut or overcut and score the indicator using scoring table

Documents/data required:

- Annual monitoring report (AMR)

- Adhoc timber allocation based on approval (Pest and Diseases, Forest Fire, Developmental)
- Records of illegal activities (FIRMS)
- Tree marking book (refer TMB provided in code)
- Summary sheet (Refer summary sheet format provided in code)

Guidance for scoring:

- Cumulative Volume of AAC (CVA).
- Cumulative achievement by % = (Cumulative Achievement/ Cumulative AAC) *100
- Determine whether timber is undercut or overcut.
- Give a score based on the score Table.
- Take note of corrective action (Correction action column), if any.

Score Table

Sl. No	Undercut%	Score	Overcut&	Score	Corrective Actions
1	90-100	1	1-10	9	
2	80-90	2	>10	0	
3	70-80	3			
4	60-70	4			
5	50-60	5			
6	40-50	6			
7	30-40	7			
8	20-30	8			
9	10-20	9			
10	0-10	10			

Note:

Overcut – When sum of annual timber harvest is greater than cumulative ACC at the time of evaluation, the point shall be deducted from overall score as per the overcut scoring table.

Undercut – When annual timber harvest is less than 10% of its prescribed annual AAC, the point shall be given as per the undercut score table.

Indicator 2: Annual Demand and Supply of NWFPs

2. Annual Demand and Supply of NWFP

Note: NWFP % based on demand and supply and resource availability.

This indicator refers to the quantity of non-wood forest products removed sustainably from the LFMA. If AAC is prescribed in a management plan or other prescriptions such as NWFP management plan, the progress shall be assessed based on quantity prescribed and quantity supplied. In the event, there is no prescription either in the management plan or NWFP groups, this indicator shall be assessed based on demand and supply. CFO shall conduct NWFP demand assessment annually if AAC is not prescribed. Achievement shall be rated based on demand and supply of a particular NWFP. The assessment shall be carried out separately for different NWFPs and progress shall be average of all NWFPs.

Similarly, the information on total demand and supply of NWFPs from the LFMA can be tracked from the annual monitoring reports submitted by the concerned offices. The evaluation team shall compile the total NWFPs removed from the LFMA provided in the monitoring reports submitted by field offices. The evaluation team shall compile the information using *evaluation form 2* to determine the total quantity of demand against supply of NWFPs extracted are as per the accumulated AAC and score the indicator following the instruction provided.

Evaluation form 2: Annual Demand and Supply of NWFPs						
Year of Operation						
Year	NWFP Name	Unit	Demand	Supply	Percent Achieved	Remarks
1 st						
2 nd						
3 rd						
4 th						
5 th						
6 th						
7 th						
8 th						
9 th						
10 th						
Total						
Score						
Data Source: Annual record keeping form, annual monitoring reports, OFS, FIRMS, & demand assessment reports.						
Score Table						
Sl. No	% of Demand Met	Score	Overcut	Score	Corrective Actions	
1	90-100	10	1-10	9		
2	80-90	9	>10	0		
3	70-80	8				
4	60-70	7				
5	50-60	6				
6	40-50	5				
7	30-40	4				
8	20-30	3				
9	10-20	2				
10	1-10	1				
11	<1	0				

Indicator 3: Percent of Plantation Survival or Established

3.Percent of Plantation Survival or Establishment

The barren and degraded area inside the LFMA may be assessed and brought under the plantation to improve stocking as per the management plan of LFMA. This indicator refers to the percentage of forest area afforested and/or reforested and survival percent of each of the plantations. The survival percent of each plantation shall be carried out annually by concerned CFO in collaboration with any authorized agency using plantation monitoring and evaluation framework and data shall be made available to evaluation team at the time of evaluation. Concerned CFO shall determine the plantation area by measuring and mapping the forest area that is put under the plantation using GPS or any other mapping method. The Evaluation team shall conduct independent assessment for at least one sample site from each operation or plantation year.

Evaluation form 3: Percent of Plantation Survival or Established				
Year	Area Targeted for Plantation (ha)	Area Planted (ha)	Survival %	Remarks
1 st				
2 nd				
3 rd				
4 th				
5 th				
6 th				
7 th				
8 th				
9 th				
10 th				
Total/Average				
Score				

Guidance:

- Determine the total area planted and compare against the plantation target mentioned in the LFMA over the period.
- Determine total no of planted seedlings that have survived.
- Determine % of planted seedling that has survived or established: (Total seedling counted/ total seedlings planted) x 100).
- Give score based on Score Table.
- Verify plantation grading by visiting the plantation area.

Score Table

Sl. No	Plantation Carried Out (area & no)	Score	Corrective Actions
1	80-100	5	
2	60-80	4	
3	40-60	3	
4	20-40	2	
5	1-20	1	
6	<1	0	
Score			

Guidance:

- Determine survival percent of each of the plantations
- Determine success rate of plantation using survival percent
- In case of multiple plantation sites, average the survival percentage for scoring.
- Score the indicator based on the scoring table.
- Verify plantation grading by visiting the plantation area.

Score Table

Sl. No	Survival Assessment	Score	Corrective Actions
1	>90% (Excellent)	5	
2	76-90 (Very good)	4	
3	51-75% (Good)	3	

4	26-50% (Satisfactory)	2	
5	=<25%(Poor)	1	
Score			

Indicator 4: Percent of Thinning Carried Out Compared to Thinning Target

4. Percent of Thinning Carried Out

This indicator refers to the number or area in which scientific thinning are been carried out inside the LFMA as per the prescription of the management plan. The concerned Range office use the existing field data or shall map the thinning area using drone or other technologies, and update summary sheet information. This information shall be made available to the evaluation team as per the given table below. Evaluation officials shall carry out physical verification of the sites, write observation and score.

Thinning target based on area and volume are pre-determined and implemented as planned. The concerned field office shall gather the information using the *Evaluation form 4* and determine the extraction is being carried out as prescribed in the LFMAP and provide the indicator score. Under no circumstances, the sum of thinning volume, timber, firewood etc., shall exceed the AAC prescribed in the LFMA management plan.

Evaluation Form 4: Percent of thinning carried out compared to thinning target

Year	Name of Compartment	Thinning target			Progress			Observations
		Area	No	Vol	Area	No	Vol	
1 st								
2 nd								
3 rd								
4 th								
5 th								
6 th								
7 th								
8 th								
9 th								
10 th								
Total								
Score								

Documents/data source: Annual monitoring report & drone maps/google maps/ GIS maps, Image processing software.

Guidance:

- Determine or get the total number and area of thinning carried out.
- Map thinning area with drone or conventional method.
- Mention reasons for thinning.
- Give score based on Score Table.

Score Table

Sl. No	Thinning Carried Out (area%)	Score	Corrective Actions
1	80-100	5	
2	60-80	4	
3	40-60	3	
4	20-40	2	
5	1-20	1	
6	<1	0	

Indicator 5: Change in Forest Area as % of Total Forest Area (Overall Forest Area)

5. Change in Forest Area as a % of Total Forest area (Overall Forest Area)

This indicator refers to the change in total forest area inside LFMA. Since LFMA is managed on a sustainable basis, the operation should follow the principles of sustainability and should not result in decrease in total forest area. The decrease in total forest area shall be assessed against area of forest loss based on land use and land cover map or forest cover map used at the time of the plan preparation and latest land use and land cover map. This shall be complemented by records of forestry clearance, afforestation and FIRMS data. If no updated land use and land cover map or forest cover maps are available, non-spatial data such as forest clearances issued including private registered land, afforestation and FIRMS data shall be used to deter.

The SRF land are allotted for the developmental activities and to assess a total area that has been deducted from the LFMA is crucial as to determine the loss of production sites and timber stock that could be removed and allocated as timber. During the time of evaluation, team shall compile the supporting documents such as clearances and relevant documents and determine the total area brought under the developmental activities in *evaluation form 5*.

Evaluation form 5: Change in forest area as a % of total forest area (Overall Forest Area)

Year	Name of Working Circle	Name of Compartment	Developmental Activities	Total Clearance Area (Ha)	Total Forest Area Removed for Developmental Activities (Ha)	Remarks
1 st						
2 nd						

3 rd						
4 th						
5 th						
6 th						
7 th						
8 th						
9 th						
10 th						
Total						
Score						

Documents/ data required.

- Annual monitoring report
- Record of areas allocated for developmental activities (mining, hydropower, transmission lines, road, community forest, etc) from LFMA.
- Land Cover Land Use (LULC) Map
- Forest function map

Guidance:

- Determine total area of forest cover lost due to developmental activities during the period.
- Determine total forest cover area of LFMA from the management plan.
- Calculate % change in forest area.
- $(\text{Forest area lost} / \text{total Forest area under LFMA}) \times 100$.
- Give a score based on the score Table.
- Take note of corrective action (Correction action column) if any.

Score Table

Sl. No	Change in Forest area (%)	Score	Corrective Actions
1	0-10	10	
2	10-20	9	
3	20-30	8	
4	30-40	7	
5	40-50	6	
6	50-60	5	
7	60-70	4	

8	70-80	3	
9	80-90	2	
10	90-100	1	
11	>=100	0	

Indicator 6: % Change in Forest Area of Protection Working Circle (PWC)

6. % change in forest area of protection working circle

Note: % area of forest cover under protection working circle has changed or not compared to LFMA establishment.

This indicator refers to the change in total forest area inside the protection working circle of LFMA. The slope protection, wildlife habitat protection, water/river or stream buffer, cultural/spiritual or religious site protection are core functions of protection working circles, it is important to protect and maintain these protection functions. The change in protection shall be determined as follows

- Layout a protection working circle on any GIS platform such as QGIS, ARCGIS.
- Overlay the shapefiles of road, transmission lines, lease, land allotment, land exchange, surface collection and other developmental activities.
- Verify if there is any overlap in the area. If there is any overlap, estimate the area of overlapping polygon.

During the time of evaluation, the team shall gather information using the data compilation sheet E and determine the protection, non-production and production working circle brought under the various developmental activities over the plan period. The team shall validate using the shapefile on Google Earth/QGIS and provide the score for this indicator.

Evaluation Form 6: Change in forest area of protection working circle

Year	Compartment Name	Developmental Activities	Total Clearance Area (Ha)	Total Forest Area Removed for Developmental Activities (Ha)	Remarks
1 st					
2 nd					
3 rd					
4 th					
5 th					
6 th					
7 th					
8 th					
9 th					

10th					
Total					
Score					
<p>Documents/ data required:</p> <ul style="list-style-type: none"> • Annual monitoring report. • LFMA Plan. • Records of forest area under PWC allocated for different developmental activities. • Forest function map. • Consider the overlapping land use and other regimes with PWC that might reduce PWC area. 					
<p>Guidance</p> <ul style="list-style-type: none"> • Determine total forest cover area under PWC from LFMA management plan. • Determine total area of forest cover lost due to development activities in PWC in the period. • Calculate % change in forest area under PWC: (Forest area lost from PWC/ total forest area of LFMA under PWC) x 100. • Give a score based on the score table. • Take note of corrective action (Correction action column) if any. 					
Score Table					
Sl. No	% of Forest Area Changed	Score	Corrective Actions		
1	0-10	10			
2	10-20	9			
3	20-30	8			
4	30-40	7			
5	40-50	6			
6	50-60	5			
7	60-70	4			
8	70-80	3			
9	80-90	2			
10	90-100	1			
11	>100	0			

Indicator 7: % Change in Forest Area of Production Working Circle (PWC)

Indicator 7: % change in forest of production working circle

Note: No reduction in production working circle area from baseline at LFMA start except for changes needed to maintain conservation values.

This indicator refers to change in total forest area inside the production working circle of LFMA. Production area is a critical component of LFMA which is the main factor determining the AAC. The change in production shall be determined as follows:

- Layout a production working circle on any GIS platform such as QGIS, ARCGIS
- Overlay the shapefile of road, transmission lines, lease, land allotment, land exchange, surface collection and other developmental activities.
- Verify if there is any overlap in the area. If there is any overlap, estimate the area of overlapping polygon.

During the time of evaluation, team shall gather information using the *evaluation form 7* and determine the production working circle brought under the various developmental activities over the plan period. The team shall validate using the shapefile on Google Earth/QGIS and provide the score for this indicator.

Evaluation form 7: Change in forest area of production working circle

Year	Compartment Name	Developmental Activities	Total Clearance Area (Ha)	Total Forest Area Removed for Developmental Activities (Ha)	Remarks
1 st					
2 nd					
3 rd					
4 th					
5 th					
6 th					
7 th					
8 th					
9 th					
10 th					
Total					
Score					

Documents/Data required:

- LFMA plan.
- Forest Function Mapping.
- Note: Include approved developmental activities like farm road, transmission lines and other

development activities.

Guidance:

- Determine total area of production forest for LFMA from management plan.
- Determine area lost from production working circle to developmental activities.
- Calculate % loss in production forest area: (Area lost from production working circle / total area of production working circle of LFMA) x 100.
- Give a score based on the score Table.
- Take note of corrective action (Correction action column) if any.

Score Table

Sl. No	% of Forest Area Change	Score	Corrective Actions
1	0-10	10	
2	10-20	9	
3	20-30	8	
4	30-40	7	
5	40-50	6	
6	50-60	5	
7	60-70	4	
8	70-80	3	
9	80-90	2	
10	90-100	1	
11	100	0	

Indicator 8: Pest and Disease Incidence and its Interventions

8. Pest and disease incidence and its interventions

Forest pests and diseases have strong and irreversible adverse effects on forest productivity and ecosystem dynamics owing to their long-term influences as a result of epidemics of different pests and diseases. Therefore, this indicator refers to the timely detection and management of pest and disease in LFMA. The timely detection shall mean the extent of pest and disease infestation is less than 1 ha, infected trees are not dead but dying symptoms observed.

The detection of pest and disease shall be determined based on the information reported and field visit during the evaluation and compute the information using *evaluation form 8*. The evaluation team may assess the pest and diseases in two categories i) detection of pest and diseases, and, ii) intervention/management of pest and diseases

The detection of pest and disease may include the reporting of infestation of pest and disease and damage

assessment while intervention shall include management of pest and diseases as provisioned in the *Code*. If the area of pest and disease infestation has increased from initial reporting, the evaluation team may consider as “*action taken late*” or “*not taken*”.

Evaluation form 8: Pest and disease incidence and its interventions

Year	Detection (Y/N)	Reporting (Y/N)	Damage Assessment (Y/N)	Area Affected (Ha)	Affected Area Mapped (Y/N)	Sanitation Operation Start Month	Intervention List	Recommendation/Remarks
1 st								
2 nd								
3 rd								
4 th								
5 th								
6 th								
7 th								
8 th								
9 th								
10 th								
Score								
Note: Y - Yes, N - No								
Documents/Data required.								
<ul style="list-style-type: none"> • SMART data. • FIRMS data. • Reports. • Drone map. 								
Guidance:								
<ul style="list-style-type: none"> • Compare the pest and disease incidence report, if available from annual monitoring report (if any). • Review the pest and disease incidence damage assessment report • Verify whether or not the activity is included in the annual OP. Give a score based on the score Table. • Take note of corrective action (Correction action column) if any. 								
Score Table								
Sl. No	Incidence Report	Score	Corrective Actions					
1	Incidence monitored and reported timely	2						
2	Incidence reported late	1						
3	Incidence not reported	0						
Sl. No	Interventions	Score	Corrective Actions					
1	Action taken within stipulated time	2						
2	Action taken late	1						
3	No action taken	0						

Indicator 9: Forest Fire Management

9. Forest Fire Management

Assess the response time to forest fire incidence

1. Forest fire incidence and response

This indicator refers to occurrence, detection, reporting and response to the forest fire by mobilization of the forest fire suppression team. Since, it is very difficult to determine the fire's response time, any information on the fire incidence shall be assessed together with forest fire damage assessment, which shall also report the post fire management prescriptions.

2. Post fire management

This indicator refers to the activities implemented as part of post fire management such as removal of the damaged trees and reforestation. The information on volume of timber harvested as well as number of seedlings planted shall be made available to the monitoring team. The extraction of timber and reforestation activities shall be completed within one year from the date of fire incidence to avoid deterioration of the timber quality and reforest the area as soon as possible.

The monitoring team may skip scoring for the post fire management if the post fire management is not required based on the damage assessment report. The evaluation team shall gather the information using the *evaluation form 9* to assess the damage of SRF land caused by forest fire in the LFMA. To collect information, the team shall refer forest fire reports and for validation of the post management interventions team shall visit the sites.

Evaluation form 9: Forest fire management

Year	Number of Forest Fire Incidence	Timely Damage Assessment Carried Out (Y/N)	Post Fire Management
1 st			
2 nd			
3 rd			
4 th			
5 th			
6 th			
7 th			
8 th			
9 th			
10 th			
Total			
Score			

Documents/Data required:

- Annual monitoring report.
- FIRMS data.
- SMART report.

Guidance:

- Review the forest fire damage assessment report and list out the post fire management activities recommended
- Compare forest
- Review the data of fire incidence and start of the post fire management activities
- Review the status of post fire management activities
- fire incidents report, if available from annual monitoring report.
- Determine what kind of post fire management has been taken after the fire.

Score Table

Sl. No	Response to Forest Fire	Score	Corrective Actions
1	Damaged assessment for all forest fire incidences conducted and reported	5	
2	Damaged assessment for > 75% forest fire incidences conducted and reported.	4	
3	Damaged assessment for > 50 % forest fire incidences conducted and reported.	3	
4	Damaged assessment for > 25 % forest fire incidences conducted and reported.	2	
5	Damaged assessment for <25% forest fire incidences conducted and reported.	1	
6	Forest fire incidence reported but damage assessment not conducted.	0	

Score Table

Sl. No	Action Taken	Score	Corrective Actions
1	Extraction of timber and/or reforestation completed within 1 year	5	
2	> 75 % of forest fire management activities	4	

	completed		
3	> 50 % of forest fire management activities completed	3	
4	> 25 % of forest fire management activities completed	2	
5	< 25 % of forest fire management activities completed	1	
6	Post fire management not initiated	0	

Indicator 10: Waste Management

10. Waste Management

Determine the trend of waste over the years of basis of waste management activities conducted

The waste generation is constantly increasing due to several factors such as growing population, developmental activities, changes in the consumer habits, etc., which poses significant environmental challenges. It has been noticed that there is evidence of improper waste disposal and management within the state reserved forest area, which may lead to greater environmental problems in the form of land pollution, water pollution, etc., in the future. Therefore, this indicator measures the proper disposal and management of waste within the SRF land. The offices shall maintain the records of all waste management activities carried out inside the SRF land and this information shall be used by the evaluation team along with the field observations made in the field.

The evaluation team shall collect the information on waste management conducted by the field offices using the waste management reports maintained by field offices and enter information using *evaluation form 10*. During the time of evaluation, team shall visit few sites and make a visual observation and assess the presence of waste in the visited sites and provide the score.

Evaluation Form 10: Waste management

Year	No. of Waste Management Programs/Awareness Conducted	No. of Local Community Engaged	Amount of Waste Collected	Evidence of Waste During Field Visits
1 st				
2 nd				
3 rd				
4 th				
5 th				
6 th				
7 th				
8 th				
9 th				
10 th				
Total				

Score			
Documents/Data required: Advocacy/awareness reports, and cleaning campaign /Zero waste hour observed reports.			
Guidance:			
<ul style="list-style-type: none"> • Observe the presence or absence of waste during field visit. • Verify waste cleaning reports. • Score the indicator as per the score table. • Note corrective actions, if any. 			
Score Table			
Sl. No	Observation	Score	Corrective Actions
1	No evidence of waste observed during site verification/visits	1	
2	Waste observed during field verification/visit	0	

Score Table				
Sl. No	No. of Awareness		Score	Corrective Actions
	Mid-term Evaluation	Final Evaluation		
1	>=30	>=50	5	
2	>25	>40	4	
3	>20	>30	3	
4	>10	>20	2	
5	>=5	>=10	1	
6	None	None	0	

Indicator 11: List of Forest Dwelling Key Flora Species

<p>11. List of Forest Dwelling Key Flora Species. Note: No significant decrease in key flora species from LFMP start.</p>
<p>This indicator refers to the change (decrease) in stocking or abundance of the key plant species. The most dominant tree species and rare species shall be determined on the basis of stem density of species described in all past and current management plan as baseline and compared with the floral survey data. It is also reflected in the LFMA Plans. Density of each species shall be compared to determine the change in density of indicator species.</p> <p>The concerned field offices shall conduct the survey of key flora species found within the LFMA and it should be carried out before carrying out the mid-term and final evaluation by the team. The team shall use this information provided by the field offices and baseline information of management plan to score this indicator.</p> <p>Evaluation form 11: List of forest dwelling key floral species</p>

Key Flora Species Form LFMA	Observation Date/Year	Methodology for Species Assessment (Through Survey/Field Visit)	List of Conservation and Monitoring Activities for the Key Flora Species	Remarks

Documents/data required: SMART & FIRMS data, monitoring reports, & drone mapping

Guidance:

- Refer LFMA to indicate the baseline for key flora species
- Determine change in key flora species based on monitoring reports submitted by field offices.

Score Table

Sl. No	Change Status	Score	Corrective Actions
1	No change	2	
2	Change detected	1	
3	No record	0	

Score Table

Sl. No	Efforts	Score	Corrective Actions
1	Species conservation and protection activities implemented and report published	3	
2	Report published and species conservation activities implemented	2	
3	Species protection/patrolling carried out	1	
4	No record	0	

Indicator 12: List of Forest Dwelling Key Fauna Species

12. List of Forest Dwelling Key Fauna Species

Note: No significant decrease in key fauna species from the commencement of LFMA plan

This indicator refers to the trend in observation/detection presence of key wild animals in the LFMA (decrease). The indicator species may include rare species such as tiger, leopard, red panda, musk deer, horn bills, pheasants, etc. and other most abundant species recorded in the LFMA. The change in trend shall be determined based on survey or assessment conducted on a regular basis by concerned offices.

The concerned field offices shall conduct the assessment of key fauna species found within the LFMA and it should be carried out before carrying out the mid-term and final evaluation by the team. The evaluation team shall compile the information provided by the field offices and baseline information of management plan using the data *evaluation form 12* to determine the indicator score.

Evaluation form 12: List of forest dwelling key fauna species

List of Key Fauna Species from LFMA	Date/Year of Detection	Count	Methodology for Species Assessment (Through Survey/Patrol/Field Visit)	List of Conservation and Monitoring Activities for the Key Fauna Species	Remarks

Documents/data required: SMART & FIRMS data, monitoring reports and drone mapping.

Guidance:

- Refer LFMA Plans to indicate the baseline for key fauna species.
- Determine change in key fauna species based on biodiversity monitoring reports submitted by field offices.
- Determine number of species conservation/monitoring activities implemented

Score Table

Sl. No	Change	Score	Corrective Actions
1	No change	2	
2	Change detected	1	
3	No record	0	

Score Table			
Sl. No	Interventions	Score	Corrective Actions
1	Carried out biodiversity assessment & report published; biodiversity monitoring carried out	3	
2	Biodiversity assessment and report published	2	
3	Biodiversity monitoring carried out	1	
4	No record	0	

C. Indicator Score and its Weightage

Sl.no	Indicators	Total Score	Score	Score (%)
1	Annual timber volume removed	10		
2	Annual demand and supply of NWFP	10		
3	Percent of plantation survival or establishment	10		
4	Percent of thinning carried out	5		
5	Change in forest area as a % of total forest area (Overall Forest Area)	10		
6	Change in forest area of protection working circle	10		
7	Change in forest area of production working circle	10		
8	Pest and disease incidents and its interventions	4		
9	Forest fire management	10		
10	Waste management	6		
11	List of forest dwelling key floral species	5		
12	List of forest dwelling key fauna species	5		
Total		95		100

Guidance for filling in Part C of Evaluation Form

The assessment of annual performance of the LFMA management activities shall be conducted based on the identified list of indicators and the scores assigned to the indicators, against which the indicators shall be scored. The scores shall then be weighed and scored out of 100 %.

Score: Based on type of evaluation (midterm/final) being conducted the evaluation team shall review submitted reports and compile the information of annual monitoring reports, field reports and observations from the field in the evaluation forms. As per the guidance provided in the evaluation forms determine the scores of the indicators. For the evaluation, the cumulative of either 5th or 9th has to be considered determining the scores.

Score %: After evaluation team has finished determining the indicator scores with proper analysis of the information and field verification add the secured scores of the indicators. And determine the score in percentage (%).

An example:

$$\begin{aligned} \text{Total secured score} &= 8(*10) + 6(10) + 7(10) + 5(10) + 1(4) + 5(10) + 4(4) \dots\dots\dots + 3(5) \\ &= 79 \text{ points (assumed total points secured)} \\ \text{Score \%} &= \text{Total secured score/Total score}*100 \\ &= 79/95*100 \\ &= 83.16\% \end{aligned}$$

****highest point or score of an indicator***

Accordingly, find out in which performance category (defined in Table 4.3) does a monitored LFMA fall into based on the score %. The management of LFMA may or may not be fulfilling the principle of sustainability. The management may have to adopt the measures to address the issues identified during the monitoring.

4.7.2 Evaluation Reporting Format

Evaluation team shall submit the mid-term and final evaluation report using the reporting format below to FMID upon completion of the Evaluation.

1. **Executive Summary**
2. **Introduction**
3. **Evaluation Objectives**
4. **Methodology**
5. **Description and Analysis of the Indicators**
6. **Summary on Indicators and Score**

Indicator	Target	Unit	Score	Score %	Challenges	Recommendations	Responsibility	Remarks

Summary of Performance Assessment and Rating

Sl. No	Indicator	Total Score	Score	Score %

7. Other Observations

Data compilation, verification and analysis to be done using data entered in FIRMS/OFS/Records

- Key flora and fauna in LFMA
- Forest offense
- Forest area removed from developmental activities
- Human Wildlife Conflict (HWC)
- Data management
- Other observations

8. Conclusion

9. Annexure

- Duly filled in evaluation forms (also excel sheet)
- Thinning area map
- Plantation creation map

4.8. Annexures

4.8.1 Annexure I: Annual Monitoring Forms

General Information

Name of LFMA:			
Plan Period:			
Objective of Plan:			
Name of Division/ Park Office:			
LFMA Area (ha):			
Forest Area inside LFMA (ha):			
Monitoring Date:			
Name of Monitoring Official	Designation	Office	

Form 1: Annual Timber and Firewood Removal

Year of Operation:								
Timber					Firewood			
Month	AAC (m ³)	Progress (m ³)	Percent Achieved	Remarks	Annual supply potential	Progress (m ³)	Percent Achieved	Remarks
January								
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								
Total								
Aggregate Target (Timber +Firewood)								
Aggregate Achievement (Timber +Firewood)								
Score								

Form 2: Annual Demand and Supply of NWFPs

Year of Operation						
Month	NWFP Name	Unit	Demand	Supply	Percent Achieved	Remarks
January						
February						
March						

April						
May						
June						
July						
August						
September						
October						
November						
December						
Total						
Score						

Form 3: Percent of Plantation Survival or Established

Month	Area Targeted for Plantation (Ha)	Area Planted (Ha)	Survival %	Remarks
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				
Total/Average				
Score				

Form 4: Percent of Thinning Carried out as Compared to Thinning Targets

Year of Operation:						
Compartment Name	Thinning Target	Progress				Observations
	Area	No	Vol	Area	No	Vol
Total						
Score						

Form 5: Pest and Disease Incidence & its Interventions

Month	Detection (Y/N)	Reporting (Y/N)	Damage assessment (Y/M)	Area affected (ha)	Affected area mapped (Y/N)	Sanitation operation start month	Intervention list	Recommendation /Remarks	
January									
February									
March									
April									
May									
June									
July									
August									
September									
October									
November									
December									
Score									
Note: Y - yes, N - no									

Form 6: Forest Fire Management

Month	Fire Incidence (Y/N)	Reporting (Y/N)	Damage Assessment (Y/M)	Area Affected (Ha)	Affected Area Mapped (Y/N)	Post Fire Management Required (Y/N)	Post Fire Management Activities Recommended	Recommendation /Remarks	
January									
February									
March									
April									
May									
June									
July									
August									
September									
October									
November									
Score									
Note: Y - yes, N - no									

Form 7: Waste Management

Month	No. of Waste Management Programs/Awareness Conducted	No. of Local Community Engaged	Amount of Waste Collected	Evidence of Waste During Field Visits
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				
Total				
Score				

4.8.2 Annexure 2: Evaluation forms

Name of LFMA:		
Plan period:		
Objective of Plan:		
Name of Division/Park Office:		
Total Area (ha):		
Forest Area inside LFMA (ha):		
Evaluation Date:		
Name of Evaluation official	Designation	Office

Form 1: Timber and Firewood Removal as Compared to Target

Year of Operation								
Timber					Firewood			
Year	AAC (m3)	Progress (m3)	Percent Achieved	Remarks	Annual Supply potential	Progress (m3)	Percent Achieved	Remarks
1 st								
2 nd								
3 rd								
4 th								
5 th								
6 th								
7 th								
8 th								
9 th								
10 th								
Total								
Cumulative AAC (timber + Firewood)								
Cumulative Achievement (Timber + Firewood)								
Score								

Form 2: Annual Demand and Supply of NWFPs

Year of Operation						
Year	NWFP Name	Unit	Demand	Supply	Percent Achieved	Remarks
1 st						
2 nd						
3 rd						
4 th						
5 th						

6 th						
7 th						
8 th						
9 th						
10 th						
Total						
Score						

Form 3: Percent of Plantation Survival or Established

Year	Area Targeted for Plantation (ha)	Area planted (ha)	Survival %	Remarks
1 st				
2 nd				
3 rd				
4 th				
5 th				
6 th				
7 th				
8 th				
9 th				
10 th				
Total/Average				
Score				

Form 4: Percent of Thinning Carried Out Compared to Thinning Targets

Year	Name of Compartment	Thinning Target			Progress			Observations
		Area	No	Vol	Area	No	Vol	
1 st								
2 nd								
3 rd								
4 th								
5 th								
6 th								
7 th								
8 th								
9 th								
10 th								
Total								
Score								

Form 5: % Change in Forest Area as a % of Total Forest Area (Overall Forest Area)

Year	Name of Working Circle	Name of Compartment	Developmental Activities	Total Clearance Area (Ha)	Total Forest Area Removed for Developmental Activities (Ha)	Remarks
1 st						
2 nd						
3 rd						
4 th						
5 th						
6 th						
7 th						
8 th						
9 th						
10 th						
Total						
Score						

Form 6: % Change in Forest Area of Protection Working Circle (PWC)

Year	Compartment Name	Developmental Activities	Total Clearance Area (Ha)	Total Forest Area Removed for Developmental Activities (Ha)	Remarks
1 st					
2 nd					
3 rd					
4 th					
5 th					
6 th					
7 th					
8 th					

9 th					
10 th					
Total					
Score					

Form 7: % Change in Forest Area of Production Working Circle (PWC)

Year	Compartment Name	Developmental Activities	Total Clearance Area (Ha)	Total Forest Area Removed for Developmental Activities (Ha)	Remarks
1 st					
2 nd					
3 rd					
4 th					
5 th					
6 th					
7 th					
8 th					
9 th					
10 th					
Total					
Score					

Form 8: Pest and Disease Incidence and Its Interventions

Year	Detection (Y/N)	Reporting (Y/N)	Damage Assessment (Y/N)	Area Affected (Ha)	Affected Area Mapped (Y/N)	Sanitation Operation Start Month	Intervention List	Recommendation/Remarks
1 st								
2 nd								
3 rd								

4 th								
5 th								
6 th								
7 th								
8 th								
9 th								
10 th								
Score								
Note: Y - Yes, N - No								

Form 9: Forest Fire Management

Year	Number of Forest Fire Incidence	Timely Damage Assessment Carried Out (Y/N)	Post Fire Management
1 st			
2 nd			
3 rd			
4 th			
5 th			
6 th			
7 th			
8 th			
9 th			
10 th			
Total			
Score			

Form 10: Waste Management

Year	No. of waste management programs/awareness conducted	No. of local community engaged	Amount of waste collected	Evidence of waste during field visits
1 st				
2 nd				
3 rd				
4 th				
5 th				
6 th				

7 th				
8 th				
9 th				
10 th				
Total				
Score				

Form 11: List of Forest Dwelling Key Flora Species

Key Flora Species Form LFMA	Observation Date/Year	Methodology for Species Assessment (Through Survey/Patrol/Field Visit)	List of Conservation and Monitoring Activities for the Key Fauna Species	Remarks
Score				

Form 12: List of Forest Dwelling Key Fauna Species

List of Key Fauna Species from LFMA	Date/Year of Detection	Count	Methodology for Species Assessment (Through Survey/Patrol/Field Visit)	List of Conservation and Monitoring Activities for the Key Fauna Species	Remarks
Score					



Community Forests (CF)

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5. Monitoring and Evaluation of Community Forests

5.1. Introduction

Community Forests (CF) are designated areas intended for sustainable management, with the authority for management bestowed upon rural communities. The concept of Community Forestry contributes significantly to various aspects such as conservation, reduction of illicit activities, poverty alleviation, improvement of rural livelihoods, fostering good governance, and other advantageous outcomes. As of the year 2023, there are a total of 823 CFs in Bhutan.

The Social Forestry initiative in Bhutan was initiated during the 1980s, inspired by the 1979 proclamation of His Majesty the Fourth Druk Gyalpo, Jigme Singye Wangchuck, who emphasized the crucial role of local communities in effectively conserving and utilizing forest resources. In 1985, His Majesty declared June 2nd, Coronation Day, as the Social Forestry Day, a nationwide celebration involving tree planting. During the early 1990s, decentralization policies recognized the significance of involving local populations in forest management. This recognition led to the inception of the Community Forestry Program within the country. The first CF was established in Dozam in Drametse Gewog, Mongar in 1997. Starting from 2001, there was a notable increase in the number of operational CFs. This progress was a result of substantial enhancements in the capabilities of forestry staff supporting the program, along with positive revisions in the Forest and Nature Conservation Rules of Bhutan (FNCR), 2006.

Bhutan's National Forest Policy (NFP) of 2011 further empowered rural communities to sustainably manage forests for the betterment of socio-economic conditions and the environment, aiming to reduce poverty and contribute to holistic national forest management. Bhutan's National Strategy for Community Forestry in 2010, defines the development goal of community forestry as enabling rural communities to fulfill a majority of their timber needs through their CFs and derive economic benefits from the sustainable forest management practices, including the sale of forest products and services.

The CFs operate under a 10-year plan implemented by the Community Forest Management Group (CFMG). CF programs are pursued with the long-term goals of contributing towards protection of forests, increasing the efficiency of production, and ensuring equitable access, and distribution of forest resources. The immediate goals are to empower local communities in managing forests and enhance their knowledge and skills to manage the forest on a sustainable basis. CFs are established as per Section 51 of the Forest and Nature Conservation Act of Bhutan (FNCA) 2023 and Section 88 of FNCR 2023 and following prescriptions of the Volume III, Forest and Nature Conservation Code of Best Management Practices of Bhutan (hereinafter referred to as the “Code”), 2021. The *Code* also prescribes implementation strategies including provisions of Monitoring and Evaluation (M&E) of the CF.

5.2. Requirement for Monitoring and Evaluation of CF

M&E of CF is essential to measure changes in its three dimensions of sustainability: ecological, economic, and social systems. The M&E process in CF plays a crucial role in assessing ecological impacts, such as achieving conservation goals while maintaining a balance between conservation and sustainable utilization. It aims to:

- i. Assess how CF contributes to economic benefits, such as generating income for local communities through activities like commercial timber harvesting, collection of non-wood forest products (NWFPs) and providing resources for rural construction and maintenance.
- ii. Addresses social impact objectives, such as promoting decentralization and empowering local communities to manage their forests, enhancing governance for better forest conditions and equitable benefit distribution.

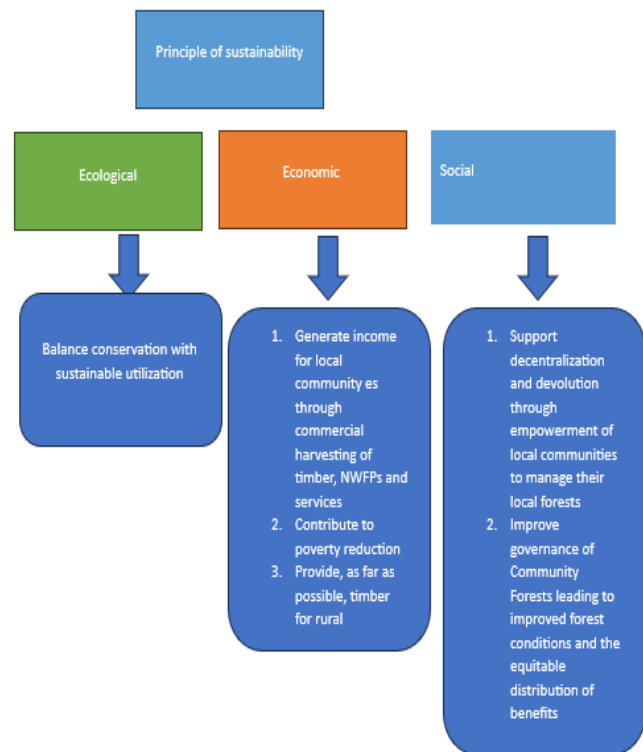


Figure 5.1: Principle of Sustainability

5.3. Types of Monitoring & Evaluation

Various types of M&E strategies are employed for Community Forest, including self-monitoring by the CFMG, participatory monitoring, annual monitoring of CF and CFMG, mid-term and final evaluation.

Table 5.1 Summary of M&E for CF

Particular	Self-annual Monitoring	Annual Monitoring	Mid-term Evaluation	Final Evaluation
Objective	1. To check its own progress against the CF management objectives	1. To assess the achievement of annual work plan activities 2. To approve annual work plan for the next year 3. To assess implementation of participatory monitoring plan in the CF management plan 4. To assess the financial achievement for the year 5. To assess the resource allocation for the year	1. To assess the progress 2. To identify the challenges faced 3. To assess adoption and learning 4. To recommend corrective actions for remaining period 5. To assess the governance (accountability & transparency in	1. Assess impact and outcome of CFMP 2. Assess the performance and results of CFMP 3. To recommend corrective actions for revision of CFMP 4. To assess the governance (accountability & transparency in resource/fund

		6. To assess the implementation of by-laws 7. To update CF database (Forest Information Reporting and Monitoring System (FIRMS)) 8. To recommend corrective measures for smooth implementation of CF management plan	resource/fund utilization, equity, reporting, decision making process) and stakeholders' engagement	utilization, equity, reporting decision making process) and stakeholders' engagement
Lead	CFMG	Chief Forestry Officer of the concerned Field Offices	Forest Monitoring and Information Division (FMID)	
Collaborator /Team	Forestry officials from the Beat/Range Office	CF management committee	Forest Resources Planning and Management Division (FRPMD), Local Government (LG) members	
Timing	Annually (As per the monitoring plan in the management plan)	Annually (11 th to 12 th month of plan period)	1 st quarter of 6 th year of the plan period	1 st quarter of 10 th year of the plan period
Form	Form 1 - 16	Annual Monitoring Forms (Part A – Part F)	Evaluation Forms (Sheet 1 – Sheet 11)	
Data Source	Record keeping forms, CFMP, AWP	Self-annual monitoring report, CFMP, AWP	Annual monitoring reports, CFMP	Annual monitoring reports, CFMP, Mid-term evaluation report

5.4. Indicators and Activities for Assessment

There are six indicators and 44 activities for the annual monitoring and six indicators and 50 activities for the mid-term and final Evaluation. However, no activities shall be scored during the self-monitoring, rather it is more of collection of information and data required for assessment of the indicators and activities.

Table 5.2: Indicators and Activities for Assessment

Indicator	Activities for Annual Monitoring	Activities for Evaluations
1. Sustainable harvesting and resource use strengthened	1. Sustainable harvesting of timber	1. Sustainable harvesting of timber
	2. Harvest and allotment of NWFP as per Annual Allowable Cut (AAC).	2. Harvest and allotment of NWFP as per Annual Allowable Cut (AAC).
	3. Compliance with harvesting guidelines and regulation	3. Compliance with harvesting guidelines and regulation
2. Economic benefits enhanced	4. Income generation through sales of timber, NWFPs, value added products, loan interest, etc.	4. Income generation through sales of timber, NWFPs, value added products, loan interest, etc.
	5. Ecotourism activities	5. Ecotourism activities
	6. Payment of Ecosystem Services (PES)	6. Payment of Ecosystem Services (PES)

3. Forest Health and Biodiversity enhanced	7.Plantation establishment	7. Tree density
		8. Species diversity
		9. Assessment of canopy density
		10. Presence of wildlife species
		11. Natural regeneration
		12. Soil cover %
		13. Plantation establishment
8. Forest pest and diseases (Incident report)	14. Forest pest and diseases (Incident report)	
9. Forest pest and diseases (Intervention)	15. Forest pest and diseases (Intervention)	
4. Environmental impact assessed	10. Illegal activities	16. Illegal activities
	11. Protection of water sources	17. Protection of water sources
	12. Forest fire incidence and response	18. Forest fire incidence and response
	13. Post fire management	19. Post fire management
	14. Clear CF boundary demarcation	20. Clear CF boundary demarcation
	15. Waste management	21. Waste management
	16. Climate change mitigation and adaptation measures	22. Climate change mitigation and adaptation measures
5. Good governance enhanced	17. CFMG meeting conducted	23. CFMG meeting conducted
	18. Capacity building and training	24. Capacity building and training
	19. Executive members have gender equality	25. Executive members have gender equality
	20. Timely re-election of executive members	26. Timely re-election of executive members
	21. Transparent decision making	27. Transparent decision making
	22. Equity and benefit sharing	28. Equity and benefit sharing
	23. Annual work plan and progress report	29. Annual work plan and progress report
	24. Seedling and plantation record	30. Seedling and plantation record
	25. Attendance register (Annual labour and marketing)	31. Attendance register (Annual labour and marketing)
	26. Records of fine and compensation	32. Records of fine and compensation
	27. Collection permit	33. Collection permit
	28. Record of forest utilization	34. Record of forest utilization
29. Money receipt	35. Money receipt	

	30. Cash book	36. Cash book
	31. Meeting minutes	37. Meeting minutes
	32. Loan record	38. Loan record
	33. Stock register	39. Stock register
	34. Calculation of payables to group members from forest sales	40. Calculation of payables to group members from forest sales
	35. Calculation of payables to individual group members from the forest sales based on collection	41. Calculation of payables to individual group members from the forest sales based on collection
	36. Calculation of payables to individual group members from the forest sales based on labor contribution	42. Calculation of payables to individual group members from the forest sales based on labor contribution
	37. Payable form	43. Payable form
	38. Receivable form	44. Receivable form
6. Social wellbeing and livelihood enhanced	39. Internal auditing conducted	45. Internal auditing conducted
	40. Human Wildlife Conflict (HWC)	46. Human Wildlife Conflict (HWC)
	41. Accessibility to resources	47. Accessibility to resources
	42. Impact to non-CF members	48. Impact to non-CF members
	43. CFMG members provided with loan	49. CFMG members provided with loan
	44. Donation and contribution	50. Donation and contribution

shall be scored during the M&E and accordingly weighted score for all 5 indicators and, the summation of which shall give the total score for the CF. While there is no performance rating of the CFs, the overall performance of the CFs shall be rated as described below for general reflection of overall management. Accordingly, relevant and description or intervention shall be recommended for each CF.

Performance Category

	Category	Description
90-100%	Totally acceptable	Forest management practices are excellent and significantly exceed sustainability standards. The CFs has provided socio-economic, environmental benefits, improved livelihood and promoted good governance.
75-90	Acceptable	Forest management practices meet the basic requirements and standards for sustainability, socio-economic, environmental benefits, improved livelihood and good governance.
60-75	Slightly acceptable	Forest management practices and achievement of objectives are close to being satisfactory but still have some deficiencies.

45-60	Slightly unacceptable	Forest management practices and achievement of objectives of CFs are somewhat lacking and do not fully meet sustainability standards.
30-45	Unacceptable	Forest management practices and activities towards achievement of objectives of CFs are inadequate and fall well below acceptable standards.
<30	Totally unacceptable	Forest management practices and activities towards achievement of objectives of CFs are extremely poor and fail to meet basic sustainability criteria.

5.5. Self-annual Monitoring by CFMG

As prescribed in the Volume III of the *Code*, the forest resource, social and institutional and environmental monitoring are to be combined and included under monitoring section of the Community Forest Management Plan (CFMP). Hence, the self-annual monitoring by CFMG shall be conducted based on the monitoring section of the CFMP. The monitoring section in CFMP shall be prepared based on following steps adopted from the *Code*.

Step 1. Self-Monitoring by the CFMG

CFMG shall conduct self-monitoring to check its own progress against the CF management objectives by using various indicators. The CFMG shall monitor the followings:

- Achievement of the overall CF management objectives.
- Achievement of block-wise management objectives.
- Implementation of planned activities (in the CFMP and AWP).
- Implementation of the CFMG By-laws.

Step 2. Participatory Monitoring

Participatory monitoring by the CFMG needs to cover all 3 aspects i.e. (i) participatory forest resource monitoring, (ii) social and institutional monitoring and (iii) environmental impact monitoring.

Monitoring of all these should be carried out in a participatory way so that all CFMG members understand the system, take responsibility for monitoring and for ensuring that as a group they are achieving their planned and agreed objectives.

- Regeneration
- Numbers and diameters of trees of different species
- Canopy density
- Grass cover
- Vegetation cover
- Soil cover
- Level of soil erosion
- Quantity of leaf litter
- Water quantity e.g., from a source
- Level of grazing pressure
- Frequency of fires
- Evidence of illicit cutting of trees
- Availability of various forest products e.g., fuel wood, fodder, NWFPs
- Survival and growth of planted seedlings

Figure 5.2: Indicators to monitor forest resources

Step 2.1 Participatory Forest Resource Monitoring

During implementation of the CFMP, the CFMG needs to continuously check that the management objectives for each block are being achieved. This is done by monitoring against a set of agreed indicators for each activity.

1. Make a list of all the management activities that have been included in the CF management plan.
2. Discuss each activity with the CFMG and try to identify 2 or 3 indicators that could be used to monitor the achievement of the activity.

For example: If the activity is “establish plantation in degraded forest”, then possible indicators might include survival rate/percentage; etc. in the block. If the activity is “patrolling, to stop illegal activities”, then indicators might include the numbers of culprits apprehended, fines and penalties levied.

3. Out of this list, discuss with the CFMG whether it shall be possible for them to measure them. Remember that the measuring system needs to be simple, practical and understandable.
4. Finalize a short-list of indicators which shall be monitored by the CFMG over the period of the CFMP (3 or 4 key indicators shall be sufficient).
5. For each indicator, discuss with the CFMG about the procedure for measuring and recording it e.g., How? Who? How often? How shall it be recorded etc.?
6. Various possible monitoring indicators are described here and an example of a completed participatory forest resource assessment table is also shown in Table 5.4.

Table 5.4: Example of a Participatory Forest Resource Impact Monitoring Table

A. Example of a Participatory Forest Resource Impact Monitoring Table				
Activity	Indicator	How it shall be Monitored	Responsibility	Comments
Establishment of plantation in degraded areas	Survival percentage, numbers of seedlings growing	Survival of planted seedlings measured in the plantation area	CF Management Committee to organize	Field office staff shall support
Patrolling within CF to stop illegal activities	No. of patrolling conducted and culprits apprehended	Regular patrolling and monitoring of the CF area	CF Secretary shall record the information	<i>Resoop</i> may submit patrolling report to the CF Chairperson/ Secretary
Construction of fire lines	Length of fire line constructed	Labour contribution made for fire line construction and physical verification	CF Management Committee and all other members	Field office staff shall give support for fire line width and length

Step 2.2 Participatory Social and Institutional Monitoring

Other activities carried out by the CFMG aim to achieve socio-economic and institutional objectives such as contributing to poverty reduction amongst CFMG members or improving CFMG governance. These aspects also need to be monitored by the CFMG by monitoring against agreed indicators. Discuss these poverty and good governance activities with the CFMG members to identify possible indicators (examples are given in the table below). Indicators can also be developed to cover Climate Hazard and Vulnerability Assessment.

Table 5.5: Example of a Participatory Social and Institutional Impact Monitoring Table

B. Example of a Participatory Social and Institutional Impact Monitoring Table				
Activity	Indicator	How it shall be Monitored	Responsibility	Comments
Providing loan for CFMG member Household (HH) income generation	Number of households provided with loan	Records in Fund Management	CFMG with field office staff facilitation	Carried out during loan repayment
Resource allocation based on equity	No. of single woman headed household, no. of disadvantaged households, etc.	Record books	CF Management committee	
Review of socio-economic survey	No. of single woman headed household, no. of disadvantaged households, etc.	Participatory review	CF management committee with field office staff facilitation	
CFMG General meeting	No. of participation of CFMG members in meetings	Meeting records	CF management committee	Collect names of participants during every meeting
CF Management Committee meeting	No. of women attended the committee meetings	CFMG records	CFMG	Overall aim is 1 woman out of three committee

Step 2.3 Participatory Environmental Impact Monitoring

The indicators identified from the environmental impact assessment need to be monitored to minimize negative environmental impacts.

1. A participatory environmental impact assessment is carried out during CFMP preparation. This identifies a number of potential negative environmental and social impacts.
2. List the areas where major potential environmental risks are identified. For each of these develop one or more indicators (see Table 5.6).
3. Complete the participatory environmental impact monitoring table showing monitoring methods (how) and responsibility.
4. Finally, having completed table for forest resource, social and institutional and environmental monitoring, combine and include under monitoring section of the CFMP.
5. In the event of lack of technical capacity of CF management committee to conduct annual self-monitoring and participatory monitoring, the forestry officials from the Beat/Range Office shall assist CF management committee.

Table 5.6: Example of a Participatory Environmental Impact Monitoring Table

C. Example of a Participatory Environmental Impact Monitoring Table				
Possible Negative Impact	Indicator	How it shall be Monitored	Responsibility	Comments
Reduced water flow in springs	Quantity of discharge during the driest month	Time taken to fill a bucket of known volume	CF management committee	Records to be kept by CFMG
Damage to natural regeneration	No. of seedlings damaged	Counting in a sample plot	CF management committee and forestry staff	Participatory assessment
Loss native species	Occurrence of invasive species sighted	Anecdotal evidence. Growing sites of invasive species	All CFMG members are to report	Shall give qualitative data only

5.6. Annual Reporting by CFMG

The CFMG shall prepare and submit annual self-monitoring and participatory monitoring report along with financial report of its activities to the Beat/Range Office with a copy to the CFO within one to two weeks after completion of self-annual monitoring. The financial report shall contain the following information:

- a. Activities completed as prescribed under the Management Plan;
- b. Quantity of each type of forest produce harvested;
- c. Quantity of forest produce sold to persons and entities other than the CFMG and its members, and the amount of proceeds of those transactions;
- d. Summary of financial accounts for the year (income, expenditure, and the disbursement of profits);
- e. Other information concerning the operations, activities and management of the CF as the Department or the Royal Government of Bhutan may require.

Since the CFMG shall have already collected all information in the regular CFMG record keeping books; in the record keeping forms developed to maintain record of various activities in the CF. The 16 standard forms are directly reproduced underneath from the *Code*.

Form 1: Annual Work Plan and Progress Report								
ལོ། Year:		གྲོངས་ལྗེ་ནགས་ཚལ་གྱི་མིང། Community Forest Name:					རྫོང་ཁག། Dzongkhag:	
ལོ་རྒྱུད་འཆར་གཞི། Annual Work Plan						ལོ་རྒྱུད་འགྲུབ་འབྲས་ཚད་གཞི། Annual Progress Report		
དམིགས་ལུགས། Objective	ཇང། SI. No	ལུ་རིགས། Activity	ས་གནས་ཡང་ན་ས་རྫོོ། Block or location	ལ་གྲུང་ས། Quantity	ལྗེ་ཕྱེད་ Unit	རྒྱམ། Month	འགྲུབ་འབྲས་ཚད་གཞི། Quantity achieved	ངན་གསོ། Remarks
Add more rows if required								

ཁྲི་འཛིན། (Chairperson)

རྒྱུ་ཚེན། (Secretary)

Form 2. Seedling and Plantation Record										
ཤིང་ལྗང་དང་འཛུགས་སྐྱོང་གི་ཚན། Seedling and Plantation Record										
Name of CF:						རྫོང་ཁག། Dzongkhag:				
Gewog:						ལོ། Year:				
ཟླ་ལོ། Month	ས་གནས་ཡང་ས་ཁོངས། Location or block	འཛུགས་སྐྱོང་གི་དབྱེ་ལས། Category of plantation	ཤིང་རིགས། Species	ཤིང་བཙུགས་པའི་ས་ཁོངས་རྒྱ་ཚད། Area planted (ha)	ལྗང་གྱི་གྲངས་ལ། Number of seedlings	འཛུགས་སྐྱོང་གི་རིང་ལོང་། རྒྱུ་ལྡན་གྱི་ Plantation costs (Cash Only, not in-kind)				ཚིན་གསོ། Remarks
						ལྗང་གྱི་རིན་ལོང་། Seedling cost	བསྐྱེད་འགོན་གྱི་རིན་ལོང་། Transport cost	རིན་ལོང་གཞན། Other costs	རིན་ལོང་ལོངས་བསྐྱེད་ལས། Total cost	

Add more rows if required

ཁྲིའཛོལ་ལོ། (Chairperson)

རྒྱུ་ཚེན་ལོ། (Secretary)

Form 3. Attendance Register (Annual Labor and Meeting)											
འཛོམས་དེབ། Attendance Register											
ཕྱི་ཚན་གྱི་མིང། Name of CFMG Group: _____											
ཨང། Sl. No	མིང། Name	ཁ་བྱང། Address	ལྷ་ཡང་ན་འཛོམས་འདུ་ལོ་རྒྱུ་ཚེས། Date of Work or Meeting:								
			ལྷ་རིགས། (འཛོམས་འདུ། འཛོན་གྱིད་བཟུ་ནི།) Activity (meeting, harvesting of NWFPs/ timber, plantation, thinning, etc.)								
Add more rows if required											

ཁྱིམ་འཛོན་ (Chairperson)

ཁྱིམ་འཛོན་ (Secretary)

Form 5: Collection Permit						
བསྐྱུ་ལེན་ཚིག་ཐུགས། Collection Permit						
ཡུལ་པུ་ཨ་མ། No.				ལུགས་ཚིག་ཐུགས། Date:		
ཚིག་ཐུགས་འཇམ་མེད་ལྷན་ཁག་གི་ཚིག་ཐུགས་འཇམ་མེད་། Name of Permit Holder:						
གསལ་ལུགས། Village:				ཁོང་ལོག་པ། Gewog:		
Dzongkhag:				Permit No:		
དུས་ཡུན། Duration	འཛོལ་ལུང་ལ་ལ་ལ་ལ་ལ། Details of products	ས་གནས་ཡུལ་ན་ས་རྒྱུ། Location or Block	ཚད་གཞི། Quantity	རིང་གོང་ རྒྱུ་ལྷན་གྲུ་ལོ། Rate (Nu)	རྒྱུ་ལྷན་གྲུ་ལོ་ལོ་ལོ་ལོ་ལོ། Total amount	དྲན་གསུང་། Remarks

ཁྱེད་ལྷན་གྲུ་ལོ་ལོ་ལོ་ལོ་ལོ། (Chairperson)

ཁྱེད་ལྷན་གྲུ་ལོ་ལོ་ལོ་ལོ་ལོ། (Secretary)

Form 6: Record of Forest Utilization in Volume

ནགས་ཚལ་བའི་ལོ་རྒྱུད་ཀྱི་ཚོད་འཕེལ་གྲངས། **Record of Forest Utilization in Volume**

གོང་མོ་ནགས་ཚལ་གྱི་མིང། **Name of CF:** རྫོང་ཁག། **Dzongkhag:**

གྲོང་ཁོངས། **Gewog:** ལོ། **Year:**

ཨང་། Sl. No.	ལུས་ཚུལ། Date	གོང་མོ་ནགས་ཚལ་གྱི་ཚོད་འཕེལ་གྲངས་མིང། Name of CFMG member	གུང་ཡང་། House No.	ཚོག་ཐམས་ཡང་། Permit No.	དྲ་ཤིང་། Drashing		ལྷན། Cham		གཅིན། Tsim		དངས་རྩུང་། Dangchung		གཙོ་ལུགས། རྒྱུ་ལྷན་གྲགས། Posts		ཐབས་ཤིང་རྒྱུ་ལྷན་གྲགས། Firewood		གཞན། Others		འབྲས་བུ་རྫོང་ལ་ཡོངས་བསྟོར། Total Fee	
					ཚོད་གཞི། Quantity	ལྷན་ལྷོད་དང་། Fee Paid	ཚོད་གཞི། Quantity	ལྷན་ལྷོད་དང་། Fee Paid	ཚོད་གཞི། Quantity	ལྷན་ལྷོད་དང་། Fee Paid	ཚོད་གཞི། Quantity	ལྷན་ལྷོད་དང་། Fee Paid	ཚོད་གཞི། Quantity	ལྷན་ལྷོད་དང་། Fee Paid	ཚོད་གཞི། Quantity	ལྷན་ལྷོད་དང་། Fee Paid	ཚོད་གཞི། Quantity	ལྷན་ལྷོད་དང་། Fee Paid		
ཡོངས་བསྟོར། Total																				

ཁྱེད་ཀྱི་འཕེལ་གྲངས་ལྷན་གྲགས་ཀྱི་འཕེལ་གྲངས་ལྷན་གྲགས་ (Chairperson)

ཁྱེད་ཀྱི་འཕེལ་གྲངས་ལྷན་གྲགས་ཀྱི་འཕེལ་གྲངས་ལྷན་གྲགས་ (Secretary)

Form 7. Money Receipt

འཕྲོད་རྟགས་ Money Receipt

ཨང་ No. _____	ས་ཁོངས་དང་དབྱིན་ཆེས་ Place, date: _____
---------------	---

ཕྱི་ཚན་གྱི་མིང་། Name of CF Group: _____		
སྤྲོད་མིའི་(རྫོང་མིང་) Received from (name) _____		དངུལ་གྲུ་ the amount of Ngultrum
_____	དངུལ་གྲུ་ Nu.	_____

དངུལ་རྒྱུ་གི་ཐོག་ལས་ཡང་ན་དངུལ་འཛིན་ཨང་ By cash/cheque/cash warrant/demand draft No. _____

དངུལ་སྤྲོད་པའི་གནད་དོན། As a payment for		
༡/1 _____		
༢/2 _____		
༣/3 _____		
དངུལ་གྲུ་ཡོངས་བསྐོས་ཀྱི་ Total Nu. _____		

མིང་དང་གོ་གནས་ Name & designation: _____

མཚན་རྟགས། Signature: _____

Form 9: Meeting Minutes		
འཛིན་པ་འདུ་ གྲུབ་ཚད། Meeting Minutes		
ཕྱི་ཚན་གྱི་མིང། Name of CFMG Group: _____		
འཛིན་པ་འདུ་ གྱི་ཚེས། Date of meeting:		འཛིན་པ་འདུ་ གྲུབ་ཚད་འབྲི་མི། Minutes taker (name):
འཛིན་པ་འདུ་ ལྗོ་མཚན། Purpose of meeting:		
འོང་ཡོད་པ་པའི་འབྲུག་མི། Total number of members (Member Households) present:		མོ་ཡོང་མ་བསྟོན་མཁུ། Number of Female participants:
		ཕོ་ཡོང་མ་བསྟོན་མཁུ། Number of Male participants:
མཉེན་མ་ཡང་ན་ འགོ་དཔོན་གྱི་མི་དང་གོ་གནས། Names and designation of guests/officials present:		
ཨང་། Sl. No	གོ་བསྐྱར་འབད་ནི་གི་གནད་དོན་དང་དཀའ་ངལ། Issues/points of discussion	འཛིན་པ་འདུ་གྲུབ་ཚད། འགན་ཁུར་འབག་མི་ག་སྟོ་ ན་མ་འཛིན་པ་འདུ་རྒྱབ་ཅི་? ག་ཉེ་ལུ་འབད་རྒྱབ་ཅི་? Meeting resolutions (Describe actions: By whom? When? Where?)

ཁྲི་འཛིན། (Chairperson)

ཁྲིུང་ཚན། (Secretary)

Form 10. Loan Record							
ལྷན་འགྲུལ་ཚོ་ཡིག་རིམ་གྱི་ལོག་ལྗོངས། Loan record form							
མིང་ Name: རྒྱུ་རྒྱུ་ལྷན་འགྲུལ་གྱི་ཚུ་བུ་ CID No: འགྲུལ་གྱི་ Address:		ལྷན་འགྲུལ་དངུལ་བཟོ་མཁུངས། Loan amount (Nu): ལོ་བརྒྱུ་རྒྱུ་ཚུ་བུ་ Annual interest rate: ལྷན་འགྲུལ་དུས་ལྷན་ Loan period in years:			ལྷན་འགྲུལ་ལེན་མིའི་ Signature of borrower:		
ལྷན་འགྲུལ་འགོ་བཙུགས་ཚེས་གྲངས། Start date of the loan: ལོ་བརྒྱུ་དངུལ་སྒོའི་གྲི་འགྲུལ་གྱི་ Number of payments per year: རྒྱ་ལོ་དངུལ་སྒོའི་དུས་ལྷན། Schedule payments:		ལྷན་འགྲུལ་ལོ་ལོ་བཟོ་མཁུངས། Total interest (Nu): ལྷན་འགྲུལ་མཚུགས་ལུགས་ལེན་ཚེས་གྲངས། Liquidation date:			ཚུགས་པ་གྱི་ལྷན་འགྲུལ་དབང་འཛིན་གྱི་མཚན་ Signature of sanctioning authority of the group:		
ལྷན་འགྲུལ་གྱི་ Date	ལྷན་འགྲུལ་མ་ཚང་ Principal amount (Nu)	ལྷན་འགྲུལ་ལོ་ལོ་བཟོ་མཁུངས་ Interest amount (Nu)	དངུལ་ཀུན་ལྷན་འགྲུལ་ Total amount (Nu)	དུས་ལྷན་དངུལ་སྒོའི་ Period instalment payment (Nu)	ལྷན་འགྲུལ་ལོ་ལོ་བཟོ་མཁུངས་ Balance total amount (Nu)	ལྷན་འགྲུལ་ལེན་མིའི་ Signature of the borrower	ཡིག་ཚང་དབང་འཛིན་གྱི་མཚན་ Signature of the office holder in charge

Form 12. Calculation of Payables to Group Members from Forest Sales

ནགས་ཚལ་ཐོན་སྐྱེད་གྱི་ཚོང་རྒྱུ་ལས་ཚོགས་པ་ལྷན་སྐྱོད་དགོ་བའི་རེའི་སྒོ་ནས།
Calculation of payables to group members from forest product sales

མང་ Sl. No	གནད་དོན་ Particulars	ཕྱེ་ཕྱན་ Unit	ལ་གྲུང་ Quantity	གོང་ཚད་ Rate (Nu)	དངུལ་ཀྱི་མཉམ་ལོངས་བསྡོམས་ Total Amount (Nu)
	ཐོན་སྐྱེད་བཟོ་རྒྱུ་ལས་ཚོང་འབབ། Revenues from selling products				
ཀ A	འོང་འབབ་ལོངས་བསྡོམས། Total revenues				
	ཚོང་འབྲེལ་གྱི་འགྲོ་སྤོང་། Expenses for marketing products				
ཁ B	འགྲོ་སྤོང་ལོངས་བསྡོམས། Total expenses				
ག C	ཁེ་ལེན་ལོངས་ཉིན། Net Income (A-B)				

Note: གསོག་འཛོག་བཞག་མི་ལྷན་གཞི་བཞག་ཞིན་ན་ ཚོགས་པའི་འབྲུས་མི་རེ་རེ་བཞིན་དུ་ལྷན་སྐྱོད་དགོ་བའི་སྒོ་ནས། Calculation of rate to be paid to individual group members based on collection, ཚོགས་པའི་འབྲུས་མི་ལྷན་སྐྱོད་དགོ་བའི་ལོངས་བསྡོམས་/ ཚོགས་པ་གིས་གསོག་འཛོག་འབད་མིའི་ལ་གྲུང་། Total payables to group members/ total quantity collected by the group, ཚོགས་པའི་འབྲུས་མི་ལྷན་སྐྱོད་དགོ་བའི་ལོངས་བསྡོམས་མི་ལྷན་གཞི་བཞག་ཞིན་ན་ ལྷན་སྐྱོད་དགོ་བའི་སྒོ་ནས། Calculation of rate to be paid to individual group members based on labour days, ཚོགས་པའི་འབྲུས་མི་ལྷན་སྐྱོད་དགོ་བའི་ལོངས་བསྡོམས་/ ཚོགས་པ་གིས་ལྷན་སྐྱོད་ལོངས་བསྡོམས་ལྷན་སྐྱོད་དགོ་བའི་ལོངས་བསྡོམས་། Total payables to group members/ total labour days invested by the group.

Form 13. Calculation of Payables to Individual Group Members from the Forest Sales Based on Collection						
འགས་ཚལ་ཐོན་སྐྱོད་ཀྱི་ཚང་ལམ་ཚོགས་པའི་འབྲུག་མི་རེ་རེ་བཞིན་དུ་ལྷོད་དགོ་བའི་ཚོགས་						
Calculation of payables to individual group members from forest product sales based on collection						
ནང་ Sl. No	མིང་ Name	ཐོན་སྐྱོད་ Product	བསྐྱུ་གསོག་ཡོད་པའི་ཁ་གྲངས། ཀལ། Qty. collected (kg)	གོང་ཚད་ཀའི་རེ་ལྷན་ དུལ་ གྲས། Rate (Nu/kg)*	ཡོངས་བསྐོར་མང་ Total (Nu)	དུལ་ཐོབ་མི་གི་རྟགས། Signature of recipient upon payment

* ཚོགས་པའི་འབྲུག་མི་རེ་རེ་བཞིན་དུ་ལྷོད་དགོ་བའི་གོང་ཚད་མིན། བར་ཚོང་པ་གིས་ལྷོད་མི་གོང་ཚད་འདི་མིན། Rate as calculated to be paid to the individual group members; not the same as the rate paid by the traders

Form 14. Calculation of Payables to Individual Group Members from the Forest Sales Based on Labor Contribution						
འགས་ཚལ་ཚོན་སྐྱེད་ཀྱི་རྩིས་རྒྱུ་ལས་ཚོགས་པའི་འཕུས་མི་རེ་རེ་བཞིན་དུ་ལུ་ཉིན་གང་གླ་འཕུས་ནི་བཞག་སྒྲོན་དགོ་པའི་ཚིག་། Calculation of payables to individual group members from forest product sales based on labour contribution						
གྲངས་ Sl. No	མི་ Name	ཚོན་སྐྱེད་ Product	ལ་འབད་བའི་ཉིན་གྲངས་། No. of labour days	གོང་ཚད་དང་དུས་ཀྱི་གཞི་ Rate per day (Nu)*	དུས་ལོངས་བཅོས་། Total (Nu)	དུས་ཚོད་མི་གི་རྟགས་། Signature of recipient upon payment

* གོང་ཚད་འདི་འཕུས་མིའི་གོས་ཚད་ལྟར་དུ་སྒྲོན་དགོས། Rate per Labour Day as calculated to be paid to the individual group members; not the same as government labour day rates.

Form 16. Receivables Form							
ལེན་མིའི་དྲི་ཚིག་གི་ཁུངས་གཞི Receivables form							
མངའ་ Sl. No	ལེན་མིའི་མིང་དང་འགྲུབ་ Receivable from (name & address)	ཁ་གསལ་ Description	འཛིན་ཚིག་གི་ཚེས་གཤང་ Date (of invoice)	འཛིན་ཚིག་གི་སྤོངས་ཚེས་ Due date (of invoice)	འཛིན་ཚིག་མངའ་ Invoice no.	འབྲུག་མཚན་ Amount (Nu)	དྲི་ཚིག་གི་ Remarks

5.7. Annual Monitoring

Annual monitoring of CF shall be carried out by the CFO of the concerned field office, jointly with the CF Management Group Committee within 11th – 12th month of the plan period. Annual monitoring targets for the CF and CFMG shall be set by concerned offices with a copy shared with FMID and include in the annual workplan.

5.7.1. Objectives of Annual Monitoring

The main objectives of the annual monitoring are to:

- a) Assess the achievement of annual work plan activities;
- b) Approve annual work plan for the next year;
- c) Assess implementation of participatory monitoring plan in the CF management plan;
- d) Assess the financial achievement for the year;
- e) Assess the resource allocation for the year;
- f) Assess the implementation of by-laws;
- g) Update CF information on the FIRMS; and
- h) To recommend corrective measures for smooth implementation of CF management plan.

5.7.2. Process for Conducting Annual Monitoring

The following steps shall be followed during the annual monitoring:

Step 1: Initial Information Gathering

- Designated forestry officials shall present the CF plan and progress (map, objective, membership, bylaws, 10-year plan, monitoring plan etc.)
- CF management committee members shall present the AWP achievements and AWP for the next year.
- CFMG must declare the following records: annual self-monitoring and participatory report, annual financial report, AWP and progress report, seedling plantation record, collection permit, record of forest utilization, cash book, meeting minutes etc. to the monitoring team.

Step 2: Main Information Gathering

- The monitoring team shall fill in annual monitoring forms (Part A – Part F).

Step 3: Recommendations

- The monitoring team shall provide recommendations for smooth implementation of the CF plan and rectify deficiencies.
- Recommendations shall be incorporated and implemented by CFMG while designated forestry officer of the Range office shall ensure implementation of all recommendations.

Step 4: Report Submission to FMID on Annual Basis

Concerned CFO shall submit a summarized CF monitoring report to FMID based on the annual monitoring reporting format within one to two weeks after completion of annual monitoring along with the annual monitoring forms (Part A - Part F).

Step 5: Annual Monitoring Review Report

FMID shall compile the annual monitoring report and publish a concise report annually.

5.7.3. Annual Monitoring Forms

Part A

General Information

Date of Data Collection/Visit:		
Reporting Period:		
Name of Dzongkhag:		
Name of Gewog:		
Name of Village:		
Name of the CFMG:		
CFMP Translated into Dzongkhag (Y/N):		
Name of Field Office:		
Range Office:		
Beat Office:		
Name of Monitoring Official	Designation	Office

Objectives of Plan: (Refer CFMP)
1.....
2.....
3.....

Extract from the Community Forest Management Plan

Year of CF Approval	CF Area (Ha.)	Year of MP Revision	Forest Type	CF Block Number	Basal Area m ² /ha.	Comments/Remarks

Very short (max. 5 sentences) description of the changes related to group and resources management

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Guidance for Completing Part A

The basic information regarding the CF and objectives can be extracted from the CFMP. Column wise description of the heading for the table on “extracts from the CFMP” is as follow:

1. **Year of CF Approval:** Year in which the CF was first approved.
2. **CF Area (Ha.):** Area covered by the CFMP.
3. **Year of MP Revision:** Year in which the MP is revised. It is not relevant in case of new management plan.
4. **Forest Type:** Forest Type as defined in Volume 1 of the “Code” and as mentioned in CFMP.
5. **CF Block Number:** Shall mean the block.
6. **Basal Area:** Basal area in m²/ha and as estimated in the CFMP.

If there are any comments from the monitoring team based on the information from Part A form or any additional comments, it can be entered in comments and remarks cell. Further, short description of the changes in the CFMG and the forest resource management over the period maybe mentioned after the table.

Part B

Member Households and Composition of the CFMG

Total Member Households	New Member Households (Since Last Record)	Review New Membership Eligibility Criteria (Yes/No)	Resigned Member Households (Since Last Record)	Comments/Remarks (Mention Reason of Resignation and Date)

CFMG Management Committee Composition

Name	Sex	Age	Responsibilities	Year	Qualification	Contact No.	Remarks

Very short thought (max. 5 sentences) on the empowerment of the group and disadvantaged groups including women and young persons.

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Guidance for Completing Part B

The information for this tables can be extracted from the CFMP and past annual monitoring reports (Form 9: Minutes of meetings of self-annual monitoring) to record new members or de-registered members.

Member Households and Composition of CFMG

1. **Total member households:** If the annual monitoring is being conducted for the first year after approval or revision of CFMP, then the total member household shall be based on the CFMP. However, after the second year, the member household shall be updated with the change in new members and the resignation of members, if any.
2. **New member household:** Details of households who have joined in the current year, if any, while “*Review new membership eligibility criteria (Yes/No)*” requires whether the membership is as prescribed in FNCA and FNCRR or not.
3. **Resigned member households:** Household that have resigned in the current monitoring year.
4. **Comments:** If there is resignation of CFMG members, then enter the reasons and the date of resignation in comments/remarks cell.

Assess whether the CFMG has reviewed the new membership eligibility criteria based on FNCA, 2023 and the FNCRR, 2023.

CFMG Management Committee Composition

1. The CFMG management committee composition can be extracted from CFMP, annual monitoring reports, minutes of meetings of re-election.
2. Monitoring team may briefly describe on the empowerment of the group and disadvantaged groups including women and young person.

Part C

Community Forest Management Group Activities

Date of Activities Conducted	Activities Conducted Since Last Visit (Meetings, Maintenance, Fire Line, Surveillance, etc.)	Female Participants	Male Participants	Total Participant	Records Available? (Minutes of Meeting, Attendance Lists) Y/N	Comments/ Remarks

Trainings Supported by DoFPS

Date of Activities Conducted	Trainings/ Capacity Building Supported by DoFPS	Female Participants	Male Participants	Total Participant	Records Available? (Minutes of Meeting, Attendance Lists) Y/N	Comments/ Remarks

Plantation

Date of Plantation	Total Area Newly Planted (Ha.)	Species Planted	Number of Seedlings	Geo-coordinates of Area	Comments	Plantation Area Map (Mapping using Drone/ GPS)

Guidance for Completing the Part C

The information for this form can be extracted from self-annual monitoring report (Form 1: Annual work plan and progress report, Form 2: Seedling and plantation record, Form 3: Attendance register (Annual labor and meeting) and Form 9: Meeting minutes). The capacity building and trainings supported by DoFPS can be extracted from the reports from concerned field offices for filling in the three tables under Part C.

1. Record with all the activities like (Meetings, maintenance, fire line, surveillance, etc.) conducted by the CFMG. Enter all the activities individually in the cell and also determine whether there are records available for each activity or not. For the training supported by DoFPS, enter information on trainings and capacity building programs for CFMG conducted by DoFPS and also determine whether there are records available or not for the activities. The data shall be collected by number and segregated by gender.
2. Information on plantation shall be extracted from CFMG record keeping Form 2: Seedling and Plantation Record, Plantation journals and plantation monitoring reports. The plantation area can be mapped either through drones or GPS.

Part D

Use of Timber, Fuel Wood, Non-Wood Forest Products, and all other Products from the Forest

AAC as per Plan (M ³)	Product Type	Timber Harvested from Within CF									Timber Supplied from Outside of CF	Comments / Remarks
		Annual Demand (M ³)	Quantity for Own Use (Subsistence)			Quantity Sold		Total Volume Harvested from CF (M ³) [A+B]	Total Income (Nu.) [C+D]	Silviculture System Applied to Harvest	Total Volume (M ³)	
			Volume (m ³) [A]	Total Fees (Nu.) [C]	No. of Beneficiary HH	Volume (m ³) [B]	Income (Nu.) [D]					
	Drashing											
	Cham											
	Tsim											
	Dangchung											
	Flag post											
	Fencing post											
	Fire wood											
Total												

Non-wood Forest Products (NWFP)

Product Type/ Species	Quantity for Own Use (Subsistence)				Quantity Sold		Total Quantity Harvested [A+B]	Total Income (Nu.) [C+D]	As per Harvesting Guidelines of NWFP (Yes or No)	Comments/ Remarks
	Unit	Quantity [A]	Total Fees (Nu) [C]	No. of Beneficiary HH	Quantity [B]	Income (Nu) [D]				
Total										

Please briefly report (max. 5 sentences) on the most promising NWFP products for this CFMG

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Payment for Ecosystem Services (PES)

Type of PES	Start Year	Income Generated (Nu)	Comments/ Remarks

Ecotourism Activities/Programs

Type of Ecotourism Activities	Start Year	Income Generated (Nu)	Comments/ Remarks

Guidance for Completing Part D: Use of timber, fuel wood, non-wood forest products, and all other products from the forest form

The information for Part D form can be extracted from CFMP, Self-annual monitoring report (Form 1: Annual work plan and progress report, Form 5: Collection permit, Form 6: Record of forest utilization, Form 7: Money receipt, Form 8: Cash book and Form 9: Meeting minutes).

Timber

1. **AAC as per plan (m³):** Enter AAC as per the plan in m³. If the AAC is in cft, then convert it into m³ (1 cft = 0.0283168 m³). For CF established before the implementation of the Code in 2021, the AHL or AAC may be in numbers, then convert into m³ using the conversion factor from “*Royalty on Forests Produce – 2006*” or “*Local Volume Table*”. All CF established after the implementation of the Code should have AAC in m³ or cft.
2. **Product type:** The different product types are listed, against which relevant information under subsequent columns need to be entered.
3. **Annual demand (m³):** Based on the product type extract the Annual demand information from CFMP.
4. **Timber harvested from within the CF:**
 - ***Quantity for own use (subsistence):*** Enter the total volume of each product type for the reporting period with total fees collected and the no. of house hold beneficiary.
 - ***Quantity sold:*** Similarly, enter volume of each product and income for commercial or quantity sold.
 - ***Total Volume harvested from CF:*** Add quantity from subsistence use and quantity sold to determine total volume harvested. Similarly
 - ***Total Income from CF:*** Add total fees from subsistence use and total income from quantity sold to determine total income against each product type. *The sum of all product type shall be the total quantity and total income for the reporting period.*
 - ***Silviculture system applied to harvest:*** Enter the silvicultural system applied to harvest each product type. It is prescribed in the CFMP.
5. **Timber supplied outside from CF:** To determine timber supplied from outside of CF refer FIRMS, G2C etc.
6. **Comments:** Any observation or comments regarding the timber demand and supply from CF. Further, note why timber was allotted from outside CF, if allotted.

NWFP

1. **Product type/species:** Enter product type
2. **Quantity for own use (subsistence):** To determine total quantity of NWFP harvested for own use enter unit, quantity harvested, total fees collected and no. of HH beneficiary against each product type.
3. **Quantity Sold:** Similarly, to determine quantity sold (commercial), enter quantity sold and income generated through sale against each product type.
4. **Total quantity harvested and total income:** Add total quantity for subsistence and quantity sold. Similarly, add total fees collected from subsistence use and total income from quantity sold to determine total income for each product type. *The sum of all product type shall be the total quantity harvested and the total income through sale of NWFP for the reporting period.*
5. **As per harvesting guidelines of NWFP:** Mention whether the harvesting is done as per guidelines or not.
6. **Comments:** The monitoring team shall briefly describe the most important NWFP for the CFMG that maybe commercialized.

PES & Eco-tourism

Fill in information related to PES and Eco-tourism activities in the CF, if any,

1. If there is payment for ecosystem services (PES) inside CF, then enter the type of PES, starting year and income generated for the reporting year.
2. Similarly, if there is eco-tourism activities or programs inside CF, then enter type of eco-tourism, starting year and income generated for the reporting year.

Part E

Funds and Expenses

Source of Revenue	Amount (Nu.) [A]	Expenses	Amount (Nu.) [B]	Net Income (Nu.) [A-B]
Membership fees		Investment on CF (material, receipt, permit books, seedlings, labour etc.)		
Fees for Permits and products (trees or any timber products)				
Revenues from sale of timber		Expenses for harvesting forest products (machinery, transport, labor etc.)		
Revenues from sale of NWFP				
Payment from Ecosystem Services			Expenses related to forest product marketing (transport, transformation)	
Interest from loans and bank savings		Expenses for Community Development and Infrastructure		
Fines and penalties		Other expenditures* Annual meeting		
Ecotourism		Tax payment		
Others (Specify)				
Total		Total		

Total Capital

Balance: Cash in Hand (Nu.) [C]	Balance: In Bank Account (Nu.) [D]	Total Amount of Active Loans/Loans Given (Nu.) [E]	Total Capital (Nu.) [C+D+E]	Comments/ Remarks

Guidance for Completing the Part E: Funds and Expenses Form

The funds and expenses form can be filled in using the information from Self-annual monitoring report (Form 4: Record of fine and compensation, Form 5: Collection permit, Form 6: Record of forest utilization, Form 7: Money receipt, Form 8: Cash book, Form 10: Loan record, Form 12: Calculation of payables to group members from forest sales, Form 13: Calculation of payables to individual group members from the forest sales based on collection, Form 14: Calculation of payables to individual group members from the forest sales based on labor contribution, Form 15: Payable's form and Form 16: Receivable's form). The summarized information on revenue can also be collected from Part C and D above.

The CFMG making contributions or donations for any cause should be included as expenses. Similarly, it should be included as income if group receives donations. Different source of revenue and expense are listed against which the figures need to be updated.

1. Funds and Expenses (Source of Revenue)

- **Membership fees:** Shall account only for the members joining the reporting period.
- **Fees for Permits and products (trees or any timber products):** Include fees and all other total revenue generated against the source of revenue. Information for the same can be generated from Part D.
- **Revenues from sale of timber, NWFP and Ecosystem Services:** Include information on total revenue generated from sale of timber, NWFP and Ecosystem services from Part D.
- **Interest from loan and bank savings:** Enter information extracted from loan records and bank statements.
- **Others (Specify):** Add any other source of revenue in the row
- The sum of all the sources of revenue shall be the total revenue generated by the CFMG for the reporting period (A).

2. Funds and Expenses (Source of Expense)

Similarly, enter all the expenses incurred during the reporting period in the "**Expenses**" column. Any other additional expenses incurred in the group can be added as a new expense under the "**Expenses**" column. The sum of all the expenses shall be the total expenses for the reporting period.

3. Net Income: The Net income for the CFMG can be calculated by subtracting the total expense from the revenue.

4. Total Capital

1. **Balance: *Cash in hand (Nu.)*:** Enter the total amount of cash in hand if there is during the time of monitoring
2. **Balance: *In Bank account*:** Verify bank balance through bank statement and enter the amount
3. **Total amount of active loans / loans given:** Enter total amount of active loans from loan record
4. **The total capital of the group can be calculated as follows:**

Total capital = Total cash in hand + Total amount in bank + Total amount of active loans

Part F

Other Information

Topics	Frequency	Reasons	Management /Solution
Conflicts			
Illegal activities by CFMG members			
Illegal activities by other than CFMG members (illegal timber, NWFP, Poaching, Fishing, land related illegal activities, waste)			
Forest Fires			
Pest and diseases			
Other incidences (specify)			

Issues and Recommendations

Important Issues/Challenges	Recommendations

Guidance for Completing Part F

Other Information

1. Topics: This column list some of the topic/activities, which need to be accounted.
2. Column 2, 3 and 4 shall account the number of times, the reason and possible management and intervention required to manage the situation. Taking an example of topic 1 (conflict);
 - **Frequency:** Enter total number of incidences /occurrences of conflicts during the implementation of CFMP for the reporting period.
 - **Reasons:** Enter the cause of the conflict. The information can be extracted from complain reports, Self-annual monitoring report (Form 4: Record of Penalty and compensation, Form 9: Meeting minutes).
 - **Management /Solution:** Further, based on the type of conflict and the reasons for the conflict, enter how it can be solved in the “*Management /Solution*” column.Similarly, enter frequency, reasons and Management/ solutions for illegal activities, forest fires and pest and diseases.
3. If any other information is to be added can be included by adding a new row.

Issues and Recommendations

To fill in second table, consult and discuss with the CFMG members on important issues and challenges.

1. **Important issues/ challenges:** Add all issues and challenges including the observations of monitoring team.
2. **Recommendation:** Enter the recommendations based on the issues and challenges.

5.7.4. Assessment Sheet for Annual Monitoring

Indicator	Activities	Procedures	Score Table			Progress Score	Data Source
1. Sustainable harvesting and resource use strengthened	1. Sustainable harvesting of timber	1) Calculate total volume of timber based on AAC. 2) Compare total volume of timber allocated with total AAC for the reporting year.	Sl. No	AAC	Score		1. Community Forest management plan 2. Annual Work Plan 3. Self-annual monitoring report 4. Annual monitoring forms
			1	Harvested < AAC	2		
			2	Harvested as per AAC	1		
	3	Harvested > AAC	0				
	2. Harvest and allotment of NWFP as per AAC	1) Calculate total quantity of NWFP as per AAC in MP. 2) Compare total quantity of NWFP harvested with total quantity as per AAC in MP.	Sl. No	AAC	Score		
			1	Under harvested	2		
			2	Harvested as per AAC	1		
			3	Over harvested	0		
	3. Compliance with harvesting guidelines and regulation	1) Field verification. 2) Ensure timbers are not harvested from buffer or protection areas. 3) Ensure timbers and NWFPs are harvested following prescribed silvicultural system and harvesting guidelines from MP and code.	Sl. No	Compliance to sustainable harvesting	Score		
1			Compliance	1			
2			Non-compliance	0			
2. Economic benefits enhanced	4. Income generation through sales of timber, NWFPs, value	1) Total up income generation of CFMG for the reporting year. 2) Compare total income generated by the CFMG with	Sl. No	Income	Score		1. Account statement 2. Cash in hand 3. Loan out 4. Self-annual monitoring report
			1	Increased	2		
			2	No change	1		

	added products, loan interest, etc.	the total income during previous reporting year. 3) If the reporting year is for the first time than the baseline shall be considered zero.	3	Decreased	0		5. Annual monitoring forms
	5. Ecotourism activities	1) Verify income generated through ecotourism activities. 2) Examine whether the ecotourism activities are functioning or not after initiation. 3) If CFMG do not have any ecotourism activity than the activity shall not be rated.	Sl. No	Income	Score		1. Account statement 2. Money receipts 3. Annual monitoring report. 4. CFMP 5. Annual monitoring forms
			1	Income generated through ecotourism	1		
			2	Ecotourism initiated but no income generation	0		
	6. PES	1) Verify income generated through PES. 2) Examine whether PES is functioning or not after initiation. 3) If CFMG do not have PES than the activity shall not be rated.	Sl. No	Income	Score		1. Account statement 2. Money receipts 3. Annual monitoring report. 4. CFMP 5. Annual monitoring forms
			1	Income generated through PES	1		
			2	PES initiated but no income generation	0		
3. Forest Health and Biodiversity enhanced	7.Plantation establishment	1) This activity shall be scored based on findings from monitoring report for plantation. 2) Score based on the score table. 3) If there is no plantation inside CF than the activity shall not be rated.	Sl. No	Plantation establishment	Score		1. Annual monitoring report for plantation
			1	>90% (Excellent)	5		
			2	76-90% (Very Good)	4		
			3	51-75% (Good)	3		
			4	26-50% (Satisfactory)	2		
			5	<25% (Poor)	1		

	8. Forest pest and diseases (Incident report)	1) Determine the detection of pests and diseases and its management effectiveness. 2) Assess whether areas of pest and diseases have been mapped, monitored, and reported or not.	Sl. No	Incidents reports	Score		1. SMART Data 2. FIRMS Data 3. Reports 4. Drone/GPS maps		
			1	Incidents monitored and reported timely	2				
			2	Incidents reported late	1				
	3	Incidents not reported	0						
	9. Forest pest and diseases (Intervention)	1) Assess what kind of intervention has been taken. 2) Assess whether it has been contained or not with intervention.	Sl. No	Intervention	Score				1. Reports
			1	Action taken within stipulated time	2				
2			Action taken late	1					
3	No action taken	0							
4. Environmental impact assessed	10. Illegal activities	1) Refer fines and compensations, money receipts maintained by CFMG. 2) Compare the trend of illegal activities over the period.	Sl. No	Frequency	Score		1. Fines and Compensations records 2. Money receipts 3. Reports 4. Annul monitoring forms		
			1	Decreasing	2				
			2	No change	1				
	3	Increasing	0						
	11. Protection of water sources	1) Refer CFMP and AWP to identify planned activities for protection of water sources. 2) Verify implemented activities through Minutes of meetings, reports, cash books. 3) Over lay shapefiles of protection area, production area, water sources in Arc GIS/ Q-GIS/Google earth to verify.	Sl. No	Interventions in water source	Score				1. CFMP 2. AWP 3. Minutes of meetings 4. Reports 5. Cash book 6. Shapefiles
			1	Fencing and plantation in water source area	2				
2			Water source designated in protection area	1					
3	Water source designated in production area	0							

	12. Forest fire incidence and response	1) Compare forest fire incidents report, if available from self-annual monitoring report. 2) Determine the response time taken to respond to each forest fire incident. 3) The activity shall not be rated if there is no forest fire.	Sl. No	Response time	Score		1. Forest Fire Report 2. Annual monitoring forms 3. FIRMS 4. SMART 5. Self-annual monitoring report
			1	Response time within 1 hours	5		
			2	Response time 1-2 hours	4		
			3	Response time 2-3 hours	3		
			4	Response time 3-4 hours	2		
			5	Response time 4-6 hours	1		
			6	Response time after >6 hours	0		
	13. Post fire management	1) Compare forest fire incidents report, if available from self-annual monitoring report. 2) Determine what kind of post fire management has been taken after the fire. 3) The activity shall be rated only in times of forest fire.	Sl. No	Intervention	Score		1. Forest Fire Report 2. Post Fire Management Report 3. Self-annual Monitoring report
			1	Extraction initiated or not required	1		
			2	Extraction required but not initiated	0		
	14. Clear CF boundary demarcation	1) Over lay shapefile of CF boundary and verify whether it overlaps or not with any private land and other CFs.	Sl. No	Clear CF boundary	Score		1. Shapefiles of CF boundary, private land & all other neighboring CFs.
			1	Yes	1		
			2	No	0		
	15. Waste management	1) Determine the amount of waste collected on a yearly basis. 2) Determine waste collection trend over years.	Sl. No	Trend	Score		1. Cleaning campaign reports
			1	Decreasing	2		
			2	No change	1		
			3	Increasing	0		

		<p>3) Determine whether it's increasing or decreasing.</p> <p>4) Score the activity as per the score table.</p>																			
	16. Climate change mitigation and adaptation measures	<p>1) Assess the activities implemented or planned related to climate change mitigation and adaptation measures from CFMP, AWP etc.</p> <p>2) Determine the achievement status based on the reports and field verifications.</p> <p>3) Score the activity as per the score table.</p> <p>4) The activity shall not be rated if there is no planned or any activity implemented.</p>	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>Achievement status</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Achieved as per plan</td> <td>3</td> </tr> <tr> <td>2</td> <td>Underachieved</td> <td>2</td> </tr> <tr> <td>3</td> <td>In progress</td> <td>1</td> </tr> <tr> <td>4</td> <td>Not achieved</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Achievement status	Score	1	Achieved as per plan	3	2	Underachieved	2	3	In progress	1	4	Not achieved	0			<p>1. CFMP</p> <p>2. AWP</p> <p>3. Activity completion report</p> <p>4. Self-annual monitoring report</p>
Sl. No	Achievement status	Score																			
1	Achieved as per plan	3																			
2	Underachieved	2																			
3	In progress	1																			
4	Not achieved	0																			
5. Good governance enhanced	17. CFMG meeting conducted	<p>1) Determine the target number for CFMG meeting from CFMP and AWP.</p> <p>2) Verify the frequency of meeting conducted through minutes of meeting.</p> <p>3) Score the activity as per the score table.</p>	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>Frequency</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>More than By-laws</td> <td>2</td> </tr> <tr> <td>2</td> <td>As per By-laws</td> <td>1</td> </tr> <tr> <td>3</td> <td>Meeting not conducted</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Frequency	Score	1	More than By-laws	2	2	As per By-laws	1	3	Meeting not conducted	0			<p>1. Minutes of meeting</p> <p>2. CFMP</p> <p>3. AWP</p> <p>4. Self-annual monitoring report</p>			
Sl. No	Frequency	Score																			
1	More than By-laws	2																			
2	As per By-laws	1																			
3	Meeting not conducted	0																			
	18. Capacity building and training	<p>1) Determine the target number for trainings based on AWP.</p> <p>2) Verify the frequency of trainings. conducted based on training reports.</p>	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>Frequency</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>More than AWP</td> <td>2</td> </tr> <tr> <td>2</td> <td>As per AWP</td> <td>1</td> </tr> <tr> <td>3</td> <td>Training not conducted</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Frequency	Score	1	More than AWP	2	2	As per AWP	1	3	Training not conducted	0			<p>1. AWP</p> <p>2. Training report</p>			
Sl. No	Frequency	Score																			
1	More than AWP	2																			
2	As per AWP	1																			
3	Training not conducted	0																			

		3) Score the activity as per the score table.			
19. CF management committee have gender equality	1) Refer CFMP to verify the management committee of CFMG. 2) If there is re-election of CF management committee than verify through minutes of meeting. 3) Score the activity as per the score table.	Sl. No	Gender equality	Score	1. CFMP 2. Minutes of meeting
		1	Representative from both gender	1	
		2	Representative from only one gender	0	
20. Timely re-election of CF management committee	1) Refer CFMP for the tenure of CF management committee. 2) Verify through minutes of meeting if re-election is conducted. 3) Score the activity as per the score table.	Sl. No	Re-election	Score	1. CFMP 2. Minutes of meeting
		1	Re-election of CF management committee conducted timely	1	
		2	Re-election of CF management committee not conducted as per plan	0	
21. Transparent decision making	1) Determine whether all the activities implemented are well recorded or not in 16 different record keeping forms of CFMG. 2) The expenditure, income, bank balance, cash in hand should tally with the records maintained by the CFMG. 3) Score the activity as per the score table.	Sl. No	Decision making	Score	1. 16 record keeping forms of CFMG
		1	Transparent	1	
		2	No transparency	0	

22. Equity and benefit sharing	1) Refer By-laws in CFMP, minutes of meetings, Attendance register and cash book for benefit sharing. 2) Consult the CFMG members on equity and benefit sharing. 3) Score the activity as per the score table.	Sl. No	Equity & benefit sharing	Score		1. CFMP 2. Minutes of meeting 3. Attendance register 4. Cash book
		1	Benefits distributed fairly and in favour of disadvantage members	1		
		2	No equity and benefit sharing	0		
23. Annual work plan and progress report	1) Verify by referring annual work plan and progress report. 2) Score the activity as per the score table.	Sl. No	Status	Score		1. Annual work plan and progress report
		1	All up to date	1		
		2	Not maintained	0		
24. Seedling and plantation record	1) Verify by referring seedling and plantation record. 2) Score the activity as per the score table.	Sl. No	Status	Score		1. Seedling and plantation record
		1	All up to date	1		
		2	Not maintained	0		
25. Attendance register (Annual labour and marketing)	1) Verify by referring attendance register (Annual labour and marketing). 2) Score the activity as per the score table.	Sl. No	Status	Score		1. Attendance register (Annual labour and marketing)
		1	All up to date	1		
		2	Not maintained	0		
26. Records of fine and compensation	1) Verify by referring records of fine and compensation. 2) Score the activity as per the score table.	Sl. No	Status	Score		1. Records of fine and compensation
		1	All up to date	1		
		2	Not maintained	0		
27. Collection permit	1) Verify by referring collection permit. 2) Score the activity as per the score table.	Sl. No	Status	Score		1. Collection permit
		1	All up to date	1		
		2	Not maintained	0		

28. Record of forest utilization	1) Verify by referring record of forest utilization. 2) Score the activity as per the score table.	Sl. No	Status	Score		1. Record of forest utilization
		1	All up to date	1		
		2	Not maintained	0		
29. Money receipt	1) Verify by referring money receipt. 2) Score the activity as per the score table.	Sl. No	Status	Score		1. Money receipt
		1	All up to date	1		
		2	Not maintained	0		
30. Cash book	1) Verify by referring cash book. 2) Score the activity as per the score table.	Sl. No	Status	Score		1. Cash book
		1	All up to date	1		
		2	Not maintained	0		
31. Meeting minutes	1) Verify by referring meeting minutes. 2) Score the activity as per the score table.	Sl. No	Status	Score		1. Meeting minutes
		1	All up to date	1		
		2	Not maintained	0		
32. Loan record	1) Verify by referring loan record. 2) Score the activity as per the score table.	Sl. No	Status	Score		1. Loan record
		1	All up to date	1		
		2	Not maintained	0		
33. Stock register	1) Verify by referring stock register. 2) Score the activity as per the score table.	Sl. No	Status	Score		1. Stock register
		1	All up to date	1		
		2	Not maintained	0		
34. Calculation of payables to group members from forest sales	1) Verify by referring calculation of payables to group members from forest sales. 2) Score the activity as per the score table.	Sl. No	Status	Score		1. Calculation of payables to group members from forest sales
		1	All up to date	1		
		2	Not maintained	0		

	35. Calculation of payables to individual group members from the forest sales based on collection	1) Verify by referring calculation of payables to individual group members from the forest sales based on collection. 2) Score the activity as per the score table.	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>Status</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>All up to date</td> <td>1</td> </tr> <tr> <td>2</td> <td>Not maintained</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Status	Score	1	All up to date	1	2	Not maintained	0		1. Calculation of payables to individual group members from the forest sales based on collection
Sl. No	Status	Score												
1	All up to date	1												
2	Not maintained	0												
	36. Calculation of payables to individual group members from the forest sales based on labor contribution	1) Verify by referring calculation of payables to individual group members from the forest sales based on the labor contribution. 2) Score the activity as per the score table.	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>Status</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>All up to date</td> <td>1</td> </tr> <tr> <td>2</td> <td>Not maintained</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Status	Score	1	All up to date	1	2	Not maintained	0		1. Calculation of payables to individual group members from the forest sales based on labor contribution
Sl. No	Status	Score												
1	All up to date	1												
2	Not maintained	0												
	37. Payable form	1) Verify by referring payable form. 2) Score the activity as per the score table.	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>Status</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>All up to date</td> <td>1</td> </tr> <tr> <td>2</td> <td>Not maintained</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Status	Score	1	All up to date	1	2	Not maintained	0		1. Payable form
Sl. No	Status	Score												
1	All up to date	1												
2	Not maintained	0												
	38. Receivable form	1) Verify by referring receivable form. 2) Score the activity as per the score table.	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>Status</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>All up to date</td> <td>1</td> </tr> <tr> <td>2</td> <td>Not maintained</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Status	Score	1	All up to date	1	2	Not maintained	0		1. Receivable form
Sl. No	Status	Score												
1	All up to date	1												
2	Not maintained	0												
	39. Internal auditing conducted	1) Internal auditing shall be conducted by CFMG in collaboration with the concern field office during annual monitoring. 2) Refer annual monitoring report to verify. 3) Score the activity as per the score table.	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>Internal auditing conducted</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Yes</td> <td>1</td> </tr> <tr> <td>2</td> <td>No</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Internal auditing conducted	Score	1	Yes	1	2	No	0		1. Self-annual monitoring report 2. Annual monitoring forms
Sl. No	Internal auditing conducted	Score												
1	Yes	1												
2	No	0												

6. Social wellbeing and livelihood enhanced	40. HWC	<ol style="list-style-type: none"> 1) Get HWC incidents reports from SMART or FIRMS for previous and reporting years. 2) Compare the trend of incidents (increasing or decreasing) from year to year. 4) Give score based on score table. 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 60%;">Trend over the year</th> <th style="width: 30%;">Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Decreasing</td> <td>2</td> </tr> <tr> <td>2</td> <td>No change</td> <td>1</td> </tr> <tr> <td>3</td> <td>Increasing</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Trend over the year	Score	1	Decreasing	2	2	No change	1	3	Increasing	0	<ol style="list-style-type: none"> 1. SMART 2. FIRMS 3. HWC incidents reports
	Sl. No	Trend over the year	Score													
	1	Decreasing	2													
	2	No change	1													
3	Increasing	0														
41. Accessibility to resources	<ol style="list-style-type: none"> 1) Refer CFMP and determine availability of resources. 2) Examine whether there is import of timber and other forest produce from outside of CF despite its availability. 3) Consult the CFMG members on accessibility to resources over the period. 4) Give score based on score table. 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 60%;">Accessibility</th> <th style="width: 30%;">Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>More accessible</td> <td>2</td> </tr> <tr> <td>2</td> <td>No change</td> <td>1</td> </tr> <tr> <td>3</td> <td>Less accessible</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Accessibility	Score	1	More accessible	2	2	No change	1	3	Less accessible	0	<ol style="list-style-type: none"> 1. CFMP 2. G2C 3. FIRMS 4. OFS 	
Sl. No	Accessibility	Score														
1	More accessible	2														
2	No change	1														
3	Less accessible	0														
42. Impact to non-CF members	<ol style="list-style-type: none"> 1) Consult the CFMG members, concern field office and non-CF members on the impact to non-CF members after establishment of CF. 2) Give score based on score table. 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 60%;">Forest resources to non- CF members</th> <th style="width: 30%;">Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Not adequate</td> <td>2</td> </tr> <tr> <td>2</td> <td>No change</td> <td>1</td> </tr> <tr> <td>3</td> <td>Adequate</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Forest resources to non- CF members	Score	1	Not adequate	2	2	No change	1	3	Adequate	0	<ol style="list-style-type: none"> 1. Interviews and consultation meetings 	
Sl. No	Forest resources to non- CF members	Score														
1	Not adequate	2														
2	No change	1														
3	Adequate	0														
43. CFMG members provided with loan	<ol style="list-style-type: none"> 1) Verify from loan records whether loan is provided or not to CFMG members. 2) Give score based on score table. 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 60%;">Loan opportunities</th> <th style="width: 30%;">Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Yes</td> <td>1</td> </tr> <tr> <td>2</td> <td>No</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Loan opportunities	Score	1	Yes	1	2	No	0	<ol style="list-style-type: none"> 1. Loan records 				
Sl. No	Loan opportunities	Score														
1	Yes	1														
2	No	0														

	44. Donation and contribution	1) Verify donations and contributions from minutes of meetings and money receipts. 2) Give score based on score table.	Sl. No	Donation and contribution	Score		1. Minutes of meeting 2. Money receipts
			1	Yes	1		
			2	No	0		

Guidance for Completing the Assessment Sheet

- **Indicator:** The management activities are mainly divided into six indicators, into which 44 activities (Column III) are grouped into.
- **Procedures:** Ways and/or methods to verify the progress and updates for the activities.
- **Score Table and Progress Score:** The score table provides pre-defined score for each activity, against which the activity is weighed and a Progress score is assigned.
- **Data Sources:** Lists the probable data source for the activity.

5.7.5. Score Calculation Sheet for Annual Monitoring

Indicators	No. of Activity	Weightage (%)	Total Score	Percentage (%) Score
Indicator 1: Sustainable harvesting and resource use	3	20		
Indicator 2: Economic benefits	3	15		
Indicator 3: Forest Health and Biodiversity	3	15		
Indicator 4: Environmental impact	7	15		
Indicator 5: Governance	23	20		
Indicator 6: Social Well-being and Livelihoods	5	15		
Total	44	100		

Guidance for Completing the Score Calculation Sheet

As shown in the score calculation sheet, there are 6 indicators with a total of 44 activities. The weightage is assigned to each indicator based on the importance of indicators in achieving community forest objectives and goals. Total score and percentage (%) score are calculated as follows;

- i. **Total score:** Total score is the sum of all the activities under each indicator (Add score from assessment sheet).

Example: Indicator 1 has 3 activities with maximum score of 5 points. Let's assume i) Sustainable harvesting of timber scored 2 points, ii) Harvest and allotment of NWFP as per AAC scored 1 point and iii) Compliance with harvesting guidelines and regulation scored 1 point. The total score for the indicator 1: Sustainable harvesting and resource use shall be $(2+1+1) = 4$ points.

- ii. **Percentage (%) score:** The percentage score is the conversion of total score into percentage based on weightage % of each indicator.

Example: The weightage assigned to indicator 1 is 20 % while the maximum score from 3 activities under indicator 1 is $(2+2+1 = 5)$ 5 points. Therefore, the percentage score is calculated as follow:

$$\begin{aligned}
 \text{Percentage score} &= \text{Total score/Maximum score} \times \text{weightage \%} \\
 &= 4/5 * 20\% \\
 &= 16\%
 \end{aligned}$$

Hence, the percentage score for indicator 1 is 16%.

Similarly repeat the same steps for all the indicators and total up the percentage score. The sum of percentage score of all the indicators shall be counted as the total score for the annual monitoring.

5.7.6. Annual Monitoring Reporting Format

The concerned field office shall prepare annual monitoring report in the following format:

Introduction: Provide but not limited to a brief background on the CFMG and the monitoring team.

Objective: Shall list the objective of the monitoring.

Methodology: Explain in detail the methodology.

Observations and Recommendations: This section shall discuss all the activities under the different indicators; the observations, score, issues and challenges (if any) and the recommendations/observations by the monitoring team. For example:

Indicator 1: Sustainable harvesting and resource use

1. Sustainable harvesting of timber

Explain the activities implemented for the achievement of this activity as per AAC in management plan. The achievement shall be validated through the data/information provided by the concern field offices and also through field visits to selected sites. Accordingly, the team shall highlight the (i) issues and (ii) recommendation for each activity.

Similar approach shall be adopted for other activities under this indicator and for all 6 indicators.

Other Observations: The team may list any other observations which are not captured in the report above. These observations and recommendations shall help in improving the management of the CFMG. The team may also provide feedback on the monitoring forms.

Annexures: Duly filled annual monitoring forms in excel sheet, assessment sheet and minutes of meeting for monitoring.

The annual monitoring report shall be submitted to the FMID for compilation, synthesis and recommendation of intervention/management strategies.

5.8. Mid-term and Final Evaluation

The mid-term and final evaluation of CFMP shall be carried out in the 1st quarter of the 6th year and 1st quarter of the 10th year of the plan period respectively. The mid-term evaluation shall enable us to identify issues which can be incorporated in the following AWP while the final evaluation shall be an important input for preparation of the next 10-year CFMP. The mid-term and final evaluation shall be conducted by FMID and/or with relevant Functional/Field offices and representative of the Local Government.

5.8.1. Objectives of Evaluation

Objectives of Mid-term Evaluation

- To assess the progress
- To identify the challenges faced
- To assess adoption and learning
- To recommend corrective actions for remaining period
- To assess the governance (accountability & transparency in resource/fund utilization, equity, reporting, decision making process) and stakeholders' engagement

Objectives of Final Evaluation

- Assess impact and outcome of CFMP
- Assess the performance and results of CFMP
- To recommend corrective actions for revision of CFMP
- To assess the governance (accountability & transparency in resource/fund utilization, equity, reporting decision making process) and stakeholders' engagement

5.8.2. Mid-term and Final Evaluation Forms

The evaluation team shall enter information from Sheet 1 to 11 while carrying out mid-term and final evaluation of CFs. The evaluation team shall submit evaluation report based on mid-term and final evaluation reporting format within one to two weeks after completion of evaluation.

Mid-term and Final Evaluation Forms

Sheet 1

General Information

Date of Data Collection/Visit:		
Name of Village:		
Type of Evaluation:		
Name of Field Office:		
Range Office:		
Beat Office:		
Name of Evaluating Official	Designation	Office

The introduction section requires the evaluation team to fill in basic information about the evaluation, the team composition, the CF and its jurisdiction under which it falls.

Information on CF

CF Name	Dzongkhag	Gewog	Total No. of Management Committee Members		Total No. of CFMG Members During Time of Evaluation		Total CF Area	Management Plan Period	AAC (m3)	Remarks
			Male	Female	Male	Female				

Membership Details

Total New Member Households After Formation/Revision of CFMG	Resigned Member Households After Formation/Revision of CFMG

Guidance for Completing the Sheet 1

This sheet takes into account basic and general information on the CF, membership details and the evaluation team. It can be filled in by referring CFMP, minutes of meetings and annual monitoring reports (refer Part B).

1. Enter CF name, dzongkhag, gewog, total CF management committee members, total CF area, management plan period and AAC in m³ in the cells based on the information from CFMP
2. Count and enter the total number of CFMG members present (by gender) during the time of evaluation.
3. Add the total new member households from annual monitoring reports and determine total new members.
4. Similarly add all the member household who have resigned from annual monitoring reports and determine the total members who have resigned.

Sheet 2

Key Achievement for CFMG Activities

No. of Activities Conducted (Meetings, Maintenance, Fire Line, Surveillance, etc.)	Female Participants	Male Participants	Total Participants	No. of Records Available	No. of Unrecorded Activities

Trainings Supported by DoFPS

No. of Trainings/ Capacity Building Supported by DoFPS	Female Participants	Male Participants	Total Participants	No. of Records Available	No. of Unrecorded Activities

Guidance for Completing the Sheet 2

The sheet can be filled in by the information generated/collected in Part C of the annual monitoring reports. The summation of the information filled annually in Part D for each year shall be included and summed up for the Evaluation.

Key achievement sheet for CFMG activities

Enter the total activities conducted by CFMG during the plan period from annual monitoring form Part C and enter total participants, no. of recorded activities and no. of unrecorded activities for the plan period.

Similarly, repeat the same steps for entering the data for trainings/ capacity building supported by DoFPS.

Sheet 3

Key Achievement for Plantation

Year of Plantation	Total Area Newly Planted (Ha.)	Species Planted	Number of Seedlings	Average Plantation Establishment %	Comments
1					
2					
3					
4					
5					
6					
7					
8					
9					
Total					

Guidance for Completing Sheet 3

The table can be filled in by referring to annual monitoring forms and annual monitoring reports of plantations.

1. **Year of Plantation:** Enter Year 1 to Year 5 and Year 1 to Year 9 in case of mid-term and final evaluation respectively.
2. **Total area newly planted (ha.), Species planted and Number of seedlings:** For each year, enter the total area of plantation, species planted, number of seedlings planted from the annual monitoring forms.
3. **Average plantation establishment %:** Enter the average plantation establishment % based on the plantation M&E reports. You may leave this blank in case of new plantation.
4. **Comments:** Any comments on the plantation may be added under the Column “Comments”

Total up and enter total area planted, count the no. of species planted and the total number of seedlings planted in the CF.

Sheet 4

Forest, Biodiversity and Natural Resources

Forest Situation /Vegetation Type	Tree Density (Tick the box)	Regeneration (All species with tree life form less than 5cm diameter at breast height) (Average count)	Comments/Remarks	
	<10 trees/ha <input type="checkbox"/>			
	10-50 trees/ha <input type="checkbox"/>			
	>50 trees/ha <input type="checkbox"/>			
Soil Cover % (tick the box)	Canopy Density (tick the box)			
>80% of soils are covered by vegetation <input type="checkbox"/>	No forest = 0 -9% <input type="checkbox"/>			
60 - 79% of soils are covered by vegetation <input type="checkbox"/>	Open forest = 10% - 39% <input type="checkbox"/>			
40 - 59% of soils are covered by vegetation <input type="checkbox"/>	Moderately dense forest = 40% - 59% <input type="checkbox"/>			
20 - 39% of soils are covered by vegetation <input type="checkbox"/>	Dense forest = 60% - 69% <input type="checkbox"/>			
<19% of soils are covered by vegetation <input type="checkbox"/>	Very dense forest = 70% - 100% <input type="checkbox"/>			
List Protected Species (plant and animals)				

Presence of Wildlife (mention physically seen or evidence of any wildlife)	
Water Availability (More – less – no difference? Please explain shortly)	

Guidance for Completing Sheet 4

These sheet takes into account basic information on forest, biodiversity and natural resources. Information should be collected by the concerned CFMG and the field offices and hand over to the evaluation team during the time of evaluation. Information shall be collected as per the prescriptions in the code.

1. **Forest Situation/Vegetation Type:** Estimate tree density and soil cover % as per the prescription under the Code. Canopy cover density can be assessed following canopy cover assessment guideline.
2. **Protected species:** List the protected species of flora and fauna found inside the CF.
3. **Presence of wildlife:** List any wildlife physically observed or based on evidences during field assessment.
4. **Water availability:** Consult CFMG members to understand the trend of water availability over the years with the probable reasons.

Sheet 5

Key Achievement for Timber

AAC	Year	Timber Harvested from within CF								Timber Supplied from Outside of CF	Comments/Remarks
		Quantity for Own Use (Subsistence)			Quantity Sold		Total Volume Harvested from CF (m3) [A+B]	Total Income (Nu.) [C+D]	Silviculture System Applied to Harvest	Total Volume (m3)	
		Volume (m3) [A]	Total Fees (Nu) [C]	No. of Beneficiary HH	Volume (m3) [B]	Income (Nu) [D]					
	1										
	2										
	3										
	4										
	5										
	6										
	7										
	8										
	9										
	Total										

Guidance for Completing Sheet 5

The table can be filled in by the information generated /collected in Part D of the annual monitoring reports and other forms of the plan period. The sum of all the entries in Part D (Timber) for each year shall be total value for each year and shall be entered in the table.

1. **AAC:** Enter AAC as per the plan in m³. If the AAC is in cft than convert into m³ (1 cft = 0.0283168 m³). For CF established before the implementation of the Code in 2021, the AHL or AAC may be in nos. Then convert into m³ using the conversion factor from “*Royalty on Forests Produce – 2006*” or “*Local Volume Table*”. All CFs established after the implementation of the Code should have AAC in m³ or cft.
2. **Year:** Refers to the year for the monitoring. Data for year 1-5 should be filled in for the mid-term evaluation and 1-9 should be filled in for final evaluation.
3. **Timber harvested from within the CF:** For all years, enter the total volume, total fees, total no. of beneficiary HH for Subsistence use (Sum of all the product types for each year). Similarly, enter for the total quantity sold and income generated (commercial), total volume harvested from CF, total income, silviculture system applied and the total volume supplied from outside for each year from the annual monitoring reports.

Sum up the data for year 1-5 and 1 -9 of the plan periods to see the trend vis-à-vis the AAC and recommend interventions, if required.

4. **Comments/ Remarks:** Any comments or remarks on timber

Sheet 6

Non-wood Forest Products (NWFP)

Year	Product Type/ Species	Quantity for Own Use (Subsistence)				Quantity Sold		Total Quantity Harvested [A+B]	Total Income (Nu.) [C+D]	As per Harvesting Guidelines of NWFP (Yes or No)	Comments/ Remarks
		Unit	Quantity [A]	Total Fees (Nu) [C]	No. of Beneficiary HH	Quantity [B]	Income (Nu) [D]				
1											
2											
3											
4											
5											

6											
7											
8											
9											
Total											

Guidance for Completing Sheet 6

The table can be filled in by the information generated /collected in Part D; NWFP of the annual monitoring reports. The sum of all the entries in table for each year shall be entered in the table.

1. **Year:** Refers to the year for the monitoring. Data for year 1-5 should be filled in for the mid-term evaluation and 1-9 should be filled in for final evaluation.
2. **Product type/species:** Enter product type and year wise information on the quantity for own use, quantity sold, total quantity harvested, total income and whether they have harvested as per guidelines. These can be extracted from the “total” for NWFP under Part D of the monitoring form. Sum up the data for year 1-5 and 1 -9 of the plan periods to see the trend and recommend interventions, if required.

Sheet 7

Payment for Ecosystem Services (PES)

Type of PES	Year	Income Generated (Nu)	Comments/ Remarks
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	Total		

Sheet 8

Ecotourism Activities/Programs

Type of Ecotourism Activities	Year	Income Generated (Nu)	Comments/ Remarks
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	Total		

Guidance for Completing Sheet 7 and Sheet 8

The table can be filled in by the information generated /collected through the different Payment for Ecosystem Services (PES) scheme and Ecotourism activities as discussed in Part D of the annual monitoring reports.

1. **Type of PES and type of Ecotourism Activities:** Mention the type/name of the PES established during and before the plan period.
2. **Year:** Year for the monitoring. Data for year 1-5 should be filled in for the mid-term evaluation and 1-9 should be filled for final evaluation.
3. **Income Generated (Nu):** Enter the income generated for each year under the plan period for the PES and the ecotourism activities. The sum of income generated is the total income generated through PES and ecotourism activities for the plan period.

If there are more than 1 PES scheme and ecotourism activities, enter similar information for all PES schemes and ecotourism activities.

Sheet 9

Funds and Expenses

Year	Revenue Amount (Nu.) [A]	Expenses Amount (Nu.) [B]	Net Income (Nu.) [A-B]
1			
2			
3			
4			
5			
6			
7			
8			
9			
Total			

Total Capital

Balance: Cash in Hand (Nu.) [C]	Balance: In Bank Account [D]	Total Amount of Active Loans / Loans Given (Nu.) [E]	Total Capital [C+D+E]	Comments/ Remarks

Guidance for Completing the Sheet 9

The information for Sheet 9 can be generated from Part E: Funds and Expenses of the annual monitoring forms.

Funds and Expenses

1. **Year:** Refers to the year for the monitoring. Data for year 1-5 should be filled in for the mid-term evaluation and 1-9 should be filled for final evaluation.
2. **Revenue Amount (A) and Expense Amount (B):** Enter the total revenue and expense for each year.
3. **Net Income (A-B):** Difference between revenue and income for each year and can also be incorporated directly from the annual monitoring form. The net income of the CFMG for the plan period shall be the sum of net income from plan period.

Total capital

4. **Balance: Cash in hand:** Enter total amount of cash in hand, if there is any, during the time of evaluation.
5. **Balance: In Bank account:** Verify bank balance through bank statement and enter the amount during the time of evaluation.
6. **Total Amount of Active Loans / Loans given (Nu.):** Enter total amount of active loans from loan record.
7. **Total Capital:** The total capital of the group can be calculated by adding the total cash in hand, total amount in bank and the total amount of active loans

Sheet 10

Other Information

Topics	Frequency	Reasons	Management /Solution
Conflicts			
Illegal activities (illegal timber, NWFP, Poaching, Fishing, land related illegal activities, waste, etc.)			
Forest Fires			
Pest and diseases			
Other incidences (specify)			

Guidance for Completing the Sheet 10

The sheet 10 can be filled in by the information generated in Part F of the annual monitoring forms.

1. **Frequency:** Refer Part F of the annual monitoring forms and sum up the frequency for all the topics for Year 1-5 and Year 1-9 for mid-term and final evaluation respectively.
2. **Reason:** Similarly, list down probable reason for the conflicts and the probable management interventions required under “*Management /Solution*” column.

If any other information is to be added, add new rows.

Sheet 11

Issues and Recommendations

Important Issues/Challenges	Recommendations

Guidance for Completing the Sheet 11

1. Important Issues/ Challenges: Consult and discuss with the CFMG members on important issues and challenges. Add all issues and challenges including the observations of evaluation team.

2. Recommendations: Enter the recommendations based on the issues and challenges.

You may also refer the Annual Monitoring Reports to check whether it has been addressed. Otherwise, you may list and include recommendations.

5.8.3. Assessment Sheet for Mid-term and Final Evaluation

Indicator	Activities	Procedures	Score Table	Progress Score	Data Source												
1. Sustainable harvesting and resource use strengthened	1. Sustainable harvesting of timber	1) Calculate total volume of timber based on AAC. 2) Aggregate total volume of timber allocated over the period. 3) Compare total volume of timber allocated with total AAC over the period. 4) Any sanitation operation carried out inside the CF should be adjusted as per AAC within the plan period.	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>AAC</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Harvested < AAC</td> <td>2</td> </tr> <tr> <td>2</td> <td>Harvested as per AAC</td> <td>1</td> </tr> <tr> <td>3</td> <td>Harvested > AAC</td> <td>0</td> </tr> </tbody> </table>	Sl. No	AAC	Score	1	Harvested < AAC	2	2	Harvested as per AAC	1	3	Harvested > AAC	0		1. Community Forest management plan 2. Annual Work Plan 3. Annual monitoring report
	Sl. No	AAC	Score														
	1	Harvested < AAC	2														
2	Harvested as per AAC	1															
3	Harvested > AAC	0															
2. Harvest and allotment of NWFP as per AAC	1) Calculate total quantity of NWFP as per MP. 2) Aggregate total quantity of NWFP harvested over the period. 3) Compare total quantity of NWFP harvested with total quantity as per AAC.	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>AAC</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Under harvested</td> <td>2</td> </tr> <tr> <td>2</td> <td>Harvested as per AAC</td> <td>1</td> </tr> <tr> <td>3</td> <td>Over harvested</td> <td>0</td> </tr> </tbody> </table>	Sl. No	AAC	Score	1	Under harvested	2	2	Harvested as per AAC	1	3	Over harvested	0		1. Community Forest management plan 2. Annual Work Plan 3. Annual monitoring report	
Sl. No	AAC	Score															
1	Under harvested	2															
2	Harvested as per AAC	1															
3	Over harvested	0															
3. Compliance with harvesting guidelines and regulation	1) Field verification. 2) Ensure timbers are not harvested from buffer or protection areas. 3) Ensure timbers and NWFPs are harvested following prescribed silvicultural system and harvesting guidelines from MP and code.	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>Compliance to sustainable harvesting</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Compliance</td> <td>1</td> </tr> <tr> <td>2</td> <td>Non-compliance</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Compliance to sustainable harvesting	Score	1	Compliance	1	2	Non-compliance	0		1. Community Forest Management Plan 2. <i>Code</i>				
Sl. No	Compliance to sustainable harvesting	Score															
1	Compliance	1															
2	Non-compliance	0															

2. Economic benefits enhanced	4. Income generation through sales of timber, NWFPs, value added products, loan interest, etc.	<ol style="list-style-type: none"> 1) Calculate total income generation for each year. 2) Compare the trend of income generation over the period. 	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>Income</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Increasing</td> <td>2</td> </tr> <tr> <td>2</td> <td>No change</td> <td>1</td> </tr> <tr> <td>3</td> <td>Decreasing</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Income	Score	1	Increasing	2	2	No change	1	3	Decreasing	0	<ol style="list-style-type: none"> 1. Account statement 2. Cash in hand 3. Loan out 4. Annual monitoring report 5. Mid-term evaluation report 6. Final evaluation report
	Sl. No	Income	Score													
	1	Increasing	2													
2	No change	1														
3	Decreasing	0														
5. Ecotourism activities	<ol style="list-style-type: none"> 1) Verify income generated through ecotourism activities. 2) Examine whether the ecotourism activities are functioning or not after initiation. 3) If CFMG do not have any ecotourism activity than the activity shall not be rated. 	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>Income</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Income generated through ecotourism</td> <td>1</td> </tr> <tr> <td>2</td> <td>Ecotourism initiated but no income generation</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Income	Score	1	Income generated through ecotourism	1	2	Ecotourism initiated but no income generation	0	<ol style="list-style-type: none"> 1. Account statement 2. Money receipts 3. Annual monitoring report. 4. Evaluation report. 5. CFMP 				
Sl. No	Income	Score														
1	Income generated through ecotourism	1														
2	Ecotourism initiated but no income generation	0														
6. PES	<ol style="list-style-type: none"> 1) Verify income generated through PES. 2) Examine whether PES is functioning or not after initiation. 3) If CFMG do not have PES than the activity shall not be rated. 	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>Income</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Income generated through PES</td> <td>1</td> </tr> <tr> <td>2</td> <td>PES initiated but no income generation</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Income	Score	1	Income generated through PES	1	2	PES initiated but no income generation	0	<ol style="list-style-type: none"> 1. Account statement 2. Money receipts 3. Annual monitoring report. 4. Evaluation forms. 5. CFMP 				
Sl. No	Income	Score														
1	Income generated through PES	1														
2	PES initiated but no income generation	0														
3. Forest Health and Biodiversity enhanced	7. Tree density	1) The information for tree density shall be available from Sheet 4: Forest, biodiversity, and natural resources of mid-term and final evaluation forms.	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>Tree density</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Increased</td> <td>2</td> </tr> <tr> <td>2</td> <td>No change</td> <td>1</td> </tr> </tbody> </table>	Sl. No	Tree density	Score	1	Increased	2	2	No change	1	<ol style="list-style-type: none"> 1. CFMP 2. Resource assessment report from field office 3. Evaluation forms 			
Sl. No	Tree density	Score														
1	Increased	2														
2	No change	1														

		<p>2) Assessment for sheet 4 shall be conducted by concern field office based on code and findings shall be made available to evaluation team.</p> <p>3) For mid-term evaluation compare current tree density with the tree density during last final evaluation.</p> <p>4) For final evaluation compare current tree density with tree density during mid-term evaluation.</p> <p>5) If the mid-term evaluation is for the first time than the baseline shall be considered during the establishment of CF.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: center;">3</td> <td style="width: 80%; text-align: center;">Decrease</td> <td style="width: 10%; text-align: center;">0</td> </tr> </table>	3	Decrease	0									
3	Decrease	0													
8. Species diversity	<p>1) The information for species diversity shall be available from Sheet 4: Forest, biodiversity, and natural resources of mid-term and final evaluation forms.</p> <p>2) Assessment for sheet 4 shall be conducted by concern field office based on code and findings shall be made available to evaluation team.</p> <p>3) For mid-term evaluation compare current species diversity with the species</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 60%;">Species diversity</th> <th style="width: 30%;">Score</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">Increased</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">No change</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">Decreased</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>	Sl. No	Species diversity	Score	1	Increased	2	2	No change	1	3	Decreased	0	<p>1. CFMP</p> <p>2. Resource assessment report from field offices</p> <p>3. Evaluation report</p>
Sl. No	Species diversity	Score													
1	Increased	2													
2	No change	1													
3	Decreased	0													

		<p>diversity during last final evaluation.</p> <p>4) For final evaluation compare current species diversity with species diversity during mid-term evaluation.</p> <p>5) If the mid-term evaluation is for the first time than the baseline shall be considered during establishment of CF.</p>															
	<p>9. Assessment of canopy density</p>	<p>1) The information for canopy density shall be available from Sheet 4: Forest, biodiversity, and natural resources of mid-term and final evaluation forms.</p> <p>2) Assessment for sheet 4 shall be conducted by concern field office based on code and findings shall be made available to evaluation team.</p> <p>3) For mid-term evaluation compare current canopy density with the canopy density during last final evaluation.</p> <p>4) For final evaluation compare current species diversity with species diversity of mid-term evaluation.</p> <p>5) If the mid-term evaluation is for the first time than the</p>	<table border="1" style="width: 100%; border-collapse: collapse; margin-top: 20px;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 50%;">Canopy density</th> <th style="width: 40%;">Score</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Increased</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">2</td> <td>No change</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">3</td> <td>Decreased</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>	Sl. No	Canopy density	Score	1	Increased	2	2	No change	1	3	Decreased	0	<p>1. CFMP</p> <p>2. Resource assessment report from field office</p> <p>3. Evaluation report</p>	
Sl. No	Canopy density	Score															
1	Increased	2															
2	No change	1															
3	Decreased	0															

		baseline shall be considered during establishment of CF.					
	10. Presence of wildlife species	1) Compare wildlife survey reports. 2) Consult the CFMG members to assess the trend of change over the time.	Sl. No	Presence of wildlife	Score		1. CFMP 2. Survey reports. 3. Evaluation report
			1	Increased	2		
			2	No change	1		
			3	Decreased	0		
	11. Natural regeneration	1) The information for natural regeneration shall be available from Sheet 4: Forest, biodiversity, and natural resources of mid-term and final evaluation forms. 2) Assessment for sheet 4 shall be conducted by concern field office based on code and findings shall be made available to evaluation team. 3) The regeneration survey shall be based on regeneration survey guidelines as follows: i. Adequate (Regeneration >2000 per hectare) ii. Doubtful (Regeneration 1000 – 2000 per hectare) iii. Poor (Regeneration < 1000 per hectare)					1. CFMP 2. Resource assessment report from field office 3. Evaluation reports
			Sl. No	Natural regeneration	Score		
			1	Adequate	5		
			2	Doubtful	3		
			3	Poor	1		
	12. Soil cover %	1) The information for soil cover % shall be available from Sheet 4: Forest, biodiversity, and natural resources of mid-	Sl. No	Soil cover %	Score		1. CFMP 2. Resource assessment report from field office 3. Evaluation reports
			1	Increased	2		
			2	No change	1		

		<p>term and final evaluation forms.</p> <p>2) Assessment for sheet 4 shall be conducted by concern field office based on code and findings shall be made available to evaluation team.</p> <p>3) For mid-term evaluation compare soil cover % with the soil cover % during last final evaluation.</p> <p>4) For final evaluation compare current soil cover % with soil cover % during mid-term evaluation.</p> <p>5) If the mid-term evaluation is for the first time than the baseline shall be considered during establishment of CF..</p>	3	Decreased	0		
	13. Plantation establishment	<p>1) This activity shall be scored based on findings from M&E report for plantation.</p> <p>2) Score based on the score table.</p> <p>3) If there is no plantation inside CF than the activity shall not be rated.</p>	Sl. No	Plantation establishment	Score		<p>1. Annual monitoring report for plantation</p> <p>2. Mid-term and final Evaluation report for plantation</p>
			1	>90% (Excellent)	5		
			2	76-90% (Very Good)	4		
			3	51-75% (Good)	3		
			4	26-50% (Satisfactory)	2		
			5	<25% (Poor)	1		

	14. Forest pest and diseases (Incident report)	1) Determine the detection of pests and diseases and its management effectiveness. 2) Assess whether areas of pest and diseases have been mapped, monitored, and reported or not.	Sl. No	Incidents reports	Score		1. SMART Data 2. FIRMS Data 3. Reports 4. Drone/GPS maps
			1	Incidents monitored and reported timely	2		
			2	Incidents reported late	1		
			3	Incidents not reported	0		
	15. Forest pest and diseases (Intervention)	1) Assess what kind of intervention has been taken. 2) Assess whether it has been contained or not with intervention.	Sl. No	Intervention	Score		1. Reports
			1	Action taken within stipulated time	2		
			2	Action taken late	1		
			3	No action taken	0		
4. Environmental impact assessed	16. Illegal activities	1) Refer fines and compensations, money receipts maintained by CFMG. 2) Compare the trend of illegal activities over the period.	Sl. No	Frequency	Score		1. Fines and Compensations records 2. Money receipts 3. Reports
			1	Decreasing	2		
			2	No change	1		
			3	Increasing	0		
	17. Protection of water sources	1) Refer CFMP and AWP to identify planned activities for protection of water sources. 2) Verify implemented activities through Minutes of meetings, reports, cash books. 3) Over lay shapefiles of protection area, production area, water sources in Arc GIS/Q-GIS/Google earth to verify.	Sl. No	Interventions in water source	Score		1. CFMP 2. AWP 3. Minutes of meetings 4. Reports 5. Cash book 6. Shapefiles
			1	Fencing and plantation in water source area	2		
			2	Water source designated in protection area	1		
			3	Water source designated in production area	0		

	18. Forest fire incidence and response	1) Compare forest fire incidents report, if available from annual monitoring report. 2) Determine the response time taken to respond to each forest fire incident. 3) The activity shall not be rated if there is no forest fire	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>Response time</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Response time within 1 hours</td> <td>5</td> </tr> <tr> <td>2</td> <td>Response time 1-2 hours</td> <td>4</td> </tr> <tr> <td>3</td> <td>Response time 2-3 hours</td> <td>3</td> </tr> <tr> <td>4</td> <td>Response time 3-4 hours</td> <td>2</td> </tr> <tr> <td>5</td> <td>Response within 4-6 hours</td> <td>1</td> </tr> <tr> <td>6</td> <td>Response time after >6 hours</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Response time	Score	1	Response time within 1 hours	5	2	Response time 1-2 hours	4	3	Response time 2-3 hours	3	4	Response time 3-4 hours	2	5	Response within 4-6 hours	1	6	Response time after >6 hours	0		1. Forest Fire Report 2. Annual monitoring report 3. FIRMS 4. SMART
Sl. No	Response time	Score																								
1	Response time within 1 hours	5																								
2	Response time 1-2 hours	4																								
3	Response time 2-3 hours	3																								
4	Response time 3-4 hours	2																								
5	Response within 4-6 hours	1																								
6	Response time after >6 hours	0																								
	19. Post fire management	1) Compare forest fire incidents report, if available from annual monitoring report. 2) Determine what kind of post fire management has been taken after the fire. 3) The activity shall be rated only in times of forest fire.	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>Intervention</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Extraction initiated or not required</td> <td>1</td> </tr> <tr> <td>2</td> <td>Extraction required but not initiated</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Intervention	Score	1	Extraction initiated or not required	1	2	Extraction required but not initiated	0		1. Forest Fire Report 2. Post Fire Management Report 3. Annual Monitoring report												
Sl. No	Intervention	Score																								
1	Extraction initiated or not required	1																								
2	Extraction required but not initiated	0																								
	20. Clear CF boundary demarcation	1) Over lay shapefile of CF boundary and verify whether it overlaps or not with any private land and other CFs.	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>Clear CF boundary</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Yes</td> <td>1</td> </tr> <tr> <td>2</td> <td>No</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Clear CF boundary	Score	1	Yes	1	2	No	0		1. Shapefiles of CF boundary, private land & all other neighboring CFs.												
Sl. No	Clear CF boundary	Score																								
1	Yes	1																								
2	No	0																								
	21. Waste management	1) Determine the amount of waste collected on a yearly basis.	<table border="1"> <thead> <tr> <th>Sl. No</th> <th>Trend</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Decreasing</td> <td>2</td> </tr> <tr> <td>2</td> <td>No change</td> <td>1</td> </tr> </tbody> </table>	Sl. No	Trend	Score	1	Decreasing	2	2	No change	1		1. Cleaning campaign report												
Sl. No	Trend	Score																								
1	Decreasing	2																								
2	No change	1																								

		2) Determine waste collection trend over years. 3) Determine whether it's increasing or decreasing. 4) Score the activity as per the score table.	3	Increasing	0																	
	22. Climate change mitigation and adaptation measures	1) Assess the activities implemented or planned related to climate change mitigation and adaptation measures from CFMP, AWP etc. 2) Determine the achievement status based on the reports and field verifications. 3) Score the activity as per the score table. 4) The activity shall not be rated if there is no planned or any activity implemented.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">Sl. No</th> <th style="width: 60%;">Achievement status</th> <th style="width: 35%;">Score</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Achieved as per plan</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Underachieved</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">3</td> <td>In progress</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">4</td> <td>Not achieved</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>			Sl. No	Achievement status	Score	1	Achieved as per plan	3	2	Underachieved	2	3	In progress	1	4	Not achieved	0		1. CFMP 2. AWP 3. Activity completion report 4. Annual monitoring reports
Sl. No	Achievement status	Score																				
1	Achieved as per plan	3																				
2	Underachieved	2																				
3	In progress	1																				
4	Not achieved	0																				
5. Good governance enhanced	23. CFMG meeting conducted	1) Determine the target number for CFMG meeting from CFMP and AWP. 2) Verify the frequency of meeting conducted through minutes of meeting. 3) Score the activity as per the score table	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">Sl. No</th> <th style="width: 60%;">Frequency</th> <th style="width: 35%;">Score</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>More than By-laws</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">2</td> <td>As per By-laws</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">3</td> <td>Meeting not conducted</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>			Sl. No	Frequency	Score	1	More than By-laws	2	2	As per By-laws	1	3	Meeting not conducted	0		1. Minutes of meeting 2. CFMP 3. AWP 4. Annual monitoring report			
Sl. No	Frequency	Score																				
1	More than By-laws	2																				
2	As per By-laws	1																				
3	Meeting not conducted	0																				

	24. Capacity building and training	<ol style="list-style-type: none"> 1) Determine the target number for trainings based on AWP. 2) Verify the frequency of trainings. conducted based on training reports. 3) Score the activity as per the score table. 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 60%;">Frequency</th> <th style="width: 30%;">Score</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>More than AWP</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">2</td> <td>As per AWP</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">3</td> <td>Training not conducted</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>	Sl. No	Frequency	Score	1	More than AWP	2	2	As per AWP	1	3	Training not conducted	0		<ol style="list-style-type: none"> 1. AWP 2. Training report
Sl. No	Frequency	Score															
1	More than AWP	2															
2	As per AWP	1															
3	Training not conducted	0															
	25. CF management committee have gender equality	<ol style="list-style-type: none"> 1) Refer CFMP to verify the CF management committee of CFMG. 2) If there is re-election of CF management committee members than verify through minutes of meeting. 3) Score the activity as per the score table. 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 60%;">Gender equality</th> <th style="width: 30%;">Score</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Representative from both gender</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Representative from only one gender</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>	Sl. No	Gender equality	Score	1	Representative from both gender	1	2	Representative from only one gender	0		<ol style="list-style-type: none"> 1. CFMP 2. Minutes of meeting 			
Sl. No	Gender equality	Score															
1	Representative from both gender	1															
2	Representative from only one gender	0															
	26. Timely re-election of CF management committee	<ol style="list-style-type: none"> 1) Refer CFMP for the tenure of CF Management committee members. 2) Verify through minutes of meeting if re-election is conducted. 3) Score the activity as per the score table. 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 60%;">Re-election</th> <th style="width: 30%;">Score</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Re-election of CF management committee members conducted timely</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Re-election of CF management committee members not conducted as per plan</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>	Sl. No	Re-election	Score	1	Re-election of CF management committee members conducted timely	1	2	Re-election of CF management committee members not conducted as per plan	0		<ol style="list-style-type: none"> 1. CFMP 2. Minutes of meeting 			
Sl. No	Re-election	Score															
1	Re-election of CF management committee members conducted timely	1															
2	Re-election of CF management committee members not conducted as per plan	0															

	27. Transparent decision making	1) Determine whether all the activities implemented are well recorded or not in 16 different record keeping forms of CFMG. 2) The expenditure, income, bank balance, cash in hand should tally with the records maintained by the CFMG. 3) Score the activity as per the score table.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 60%;">Decision making</th> <th style="width: 30%;">Score</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Transparent</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">2</td> <td>No transparency</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>	Sl. No	Decision making	Score	1	Transparent	1	2	No transparency	0		1. 16 record keeping forms of CFMG
Sl. No	Decision making	Score												
1	Transparent	1												
2	No transparency	0												
	28. Equity and benefit sharing	1) Refer By-laws in CFMP, minutes of meetings, Attendance register and cash book for benefit sharing. 2) Consult the CFMG members on equity and benefit sharing. 3) Score the activity as per the score table.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 60%;">Equity & benefit sharing</th> <th style="width: 30%;">Score</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Benefits distributed fairly and in favour of disadvantage members</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">2</td> <td>No equity and benefit sharing</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>	Sl. No	Equity & benefit sharing	Score	1	Benefits distributed fairly and in favour of disadvantage members	1	2	No equity and benefit sharing	0		1. CFMP 2. Minutes of meeting 3. Attendance register 4. Cash book
Sl. No	Equity & benefit sharing	Score												
1	Benefits distributed fairly and in favour of disadvantage members	1												
2	No equity and benefit sharing	0												
	29. Annual work plan and progress report	1) Verify by referring annual work plan and progress report. 2) Score the activity as per the score table.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 60%;">Status</th> <th style="width: 30%;">Score</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>All up to date</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Not maintained</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>	Sl. No	Status	Score	1	All up to date	1	2	Not maintained	0		1. Annual work plan and progress report
Sl. No	Status	Score												
1	All up to date	1												
2	Not maintained	0												
	30. Seedling and plantation record	1) Verify by referring seedling and plantation record. 2) Score the activity as per the score table.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 60%;">Status</th> <th style="width: 30%;">Score</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>All up to date</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Not maintained</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>	Sl. No	Status	Score	1	All up to date	1	2	Not maintained	0		1. Seedling and plantation record
Sl. No	Status	Score												
1	All up to date	1												
2	Not maintained	0												
	31. Attendance register (Annual)	1) Verify by referring attendance register (Annual labour and marketing).	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 60%;">Status</th> <th style="width: 30%;">Score</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>All up to date</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Not maintained</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>	Sl. No	Status	Score	1	All up to date	1	2	Not maintained	0		1. Attendance register (Annual labour and marketing)
Sl. No	Status	Score												
1	All up to date	1												
2	Not maintained	0												

	labour and marketing)	2) Score the activity as per the score table.				
	32. Records of fine and compensation	1) Verify by referring records of fine and compensation. 2) Score the activity as per the score table.	Sl. No	Status	Score	1. Records of fine and compensation
1			All up to date	1		
2			Not maintained	0		
	33. Collection permit	1) Verify by referring collection permit. 2) Score the activity as per the score table.	Sl. No	Status	Score	1. Collection permit
1			All up to date	1		
2			Not maintained	0		
	34. Record of forest utilization	1) Verify by referring record of forest utilization. 2) Score the activity as per the score table.	Sl. No	Status	Score	1. Record of forest utilization
1			All up to date	1		
2			Not maintained	0		
	35. Money receipt	1) Verify by referring money receipt. 2) Score the activity as per the score table.	Sl. No	Status	Score	1. Money receipt
1			All up to date	1		
2			Not maintained	0		
	36. Cash book	1) Verify by referring cash book. 2) Score the activity as per the score table.	Sl. No	Status	Score	1. Cash book
1			All up to date	1		
2			Not maintained	0		
	37. Meeting minutes	1) Verify by referring meeting minutes. 2) Score the activity as per the score table.	Sl. No	Status	Score	1. Meeting minutes
1			All up to date	1		
2			Not maintained	0		
	38. Loan record	1) Verify by referring loan record. 2) Score the activity as per the score table.	Sl. No	Status	Score	1. Loan record
1			All up to date	1		
2			Not maintained	0		

39. Stock register	1) Verify by referring stock register. 2) Score the activity as per the score table.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 50%;">Status</th> <th style="width: 40%;">Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>All up to date</td> <td>1</td> </tr> <tr> <td>2</td> <td>Not maintained</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Status	Score	1	All up to date	1	2	Not maintained	0	1. Stock register
Sl. No	Status	Score										
1	All up to date	1										
2	Not maintained	0										
40. Calculation of payables to group members from forest sales	1) Verify by referring calculation of payables to group members from forest sales. 2) Score the activity as per the score table.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 50%;">Status</th> <th style="width: 40%;">Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>All up to date</td> <td>1</td> </tr> <tr> <td>2</td> <td>Not maintained</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Status	Score	1	All up to date	1	2	Not maintained	0	1. Calculation of payables to group members from forest sales
Sl. No	Status	Score										
1	All up to date	1										
2	Not maintained	0										
41. Calculation of payables to individual group members from the forest sales based on collection	1) Verify by referring calculation of payables to individual group members from the forest sales based on collection. 2) Score the activity as per the score table.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 50%;">Status</th> <th style="width: 40%;">Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>All up to date</td> <td>1</td> </tr> <tr> <td>2</td> <td>Not maintained</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Status	Score	1	All up to date	1	2	Not maintained	0	1. Calculation of payables to individual group members from the forest sales based on collection
Sl. No	Status	Score										
1	All up to date	1										
2	Not maintained	0										
42. Calculation of payables to individual group members from the forest sales based on labor contribution	1) Verify by referring calculation of payables to individual group members from the forest sales based on the labour contribution. 2) Score the activity as per the score table.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 50%;">Status</th> <th style="width: 40%;">Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>All up to date</td> <td>1</td> </tr> <tr> <td>2</td> <td>Not maintained</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Status	Score	1	All up to date	1	2	Not maintained	0	1. Calculation of payables to individual group members from the forest sales based on labor contribution
Sl. No	Status	Score										
1	All up to date	1										
2	Not maintained	0										

	43. Payable form	1) Verify by referring payable form. 2) Score the activity as per the score table.	Sl. No	Status	Score		1. Payable form	
			1	All up to date	1			
			2	Not maintained	0			
		44. Receivable form	1) Verify by referring receivable form. 2) Score the activity as per the score table.	Sl. No	Status	Score		1. Receivable form
				1	All up to date	1		
				2	Not maintained	0		
	45. Internal auditing conducted	1) Internal auditing shall be conducted by CFMG in collaboration with the concern field office during annual monitoring. 2) Refer annual monitoring report to verify. 3) Score the activity as per the score table.	Sl. No	Internal auditing conducted	Score		1. Annual monitoring report	
			1	Yes	1			
			2	No	0			
6. Social wellbeing and livelihood enhanced	46. HWC	1) Get HWC incidents reports from SMART or FIRMS for different years. 2) Compare the trend of incidents (increasing or decreasing) from year to year. 3) Give score based on score table.	Sl. No	Trend over the period	Score		1. SMART 2. FIRMS 3. HWC incidents reports	
			1	Decreasing	2			
			2	No change	1			
			3	Increasing	0			

47. Accessibility to resources	<ol style="list-style-type: none"> 1) Refer CFMP and determine availability of resources. 2) Examine whether there is import of timber and other forest produce from outside of CF despite its availability. 3) Consult the CFMG members on accessibility to resources over the period. 4) Give score based on score table. 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 60%;">Accessibility</th> <th style="width: 30%;">Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>More accessible</td> <td>2</td> </tr> <tr> <td>2</td> <td>No change</td> <td>1</td> </tr> <tr> <td>3</td> <td>Less accessible</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Accessibility	Score	1	More accessible	2	2	No change	1	3	Less accessible	0		<ol style="list-style-type: none"> 1. CFMP 2. G2C 3. FIRMS 4. OFS
Sl. No	Accessibility	Score														
1	More accessible	2														
2	No change	1														
3	Less accessible	0														
48. Impact to non-CF members	<ol style="list-style-type: none"> 1) Consult the CFMG members, concern field office and non-CF members on the impact to non-CF members after establishment of CF. 2) Give score based on score table. 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 60%;">Forest resources to non- CF members</th> <th style="width: 30%;">Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Not adequate</td> <td>2</td> </tr> <tr> <td>2</td> <td>No change</td> <td>1</td> </tr> <tr> <td>3</td> <td>Adequate</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Forest resources to non- CF members	Score	1	Not adequate	2	2	No change	1	3	Adequate	0		<ol style="list-style-type: none"> 1. Interviews and consultation meetings
Sl. No	Forest resources to non- CF members	Score														
1	Not adequate	2														
2	No change	1														
3	Adequate	0														
49. CFMG members provided with loan	<ol style="list-style-type: none"> 1) Verify from loan records whether loan is provided or not to CFMG members. 2) Give score based on score table. 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 60%;">Loan opportunities</th> <th style="width: 30%;">Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Yes</td> <td>1</td> </tr> <tr> <td>2</td> <td>No</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Loan opportunities	Score	1	Yes	1	2	No	0		<ol style="list-style-type: none"> 1. Loan records 			
Sl. No	Loan opportunities	Score														
1	Yes	1														
2	No	0														
50. Donation and contribution	<ol style="list-style-type: none"> 1) Verify donations and contributions from minutes of meetings and money receipts. 2) Give score based on score table. 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sl. No</th> <th style="width: 60%;">Donation and contribution</th> <th style="width: 30%;">Score</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Yes</td> <td>1</td> </tr> <tr> <td>2</td> <td>No</td> <td>0</td> </tr> </tbody> </table>	Sl. No	Donation and contribution	Score	1	Yes	1	2	No	0		<ol style="list-style-type: none"> 1. Minutes of meeting 2. Money receipts 			
Sl. No	Donation and contribution	Score														
1	Yes	1														
2	No	0														

Guidance for Completing the Assessment Sheet for Mid-term and Final Evaluation

- **Indicator:** The management activities are mainly divided into six indicators, into which 50 activities (Column III) are grouped into.
- **Procedures:** Ways and/or methods to verify the progress and updates for the activities.
- **Score Table and Progress Score:** The score table provide pre-defined score for each activity, against which the activity is weighed and a Progress score is assigned.
- **Data Sources:** Lists the probable data source for the activity.

5.8.4. Score Calculation Sheet for Mid-term and Final Evaluation

Indicators	No. of Activity	Weightage (%)	Total Score	Percentage (%) Score
Indicator 1: Sustainable harvesting and resource use	3	20		
Indicator 2: Economic benefits	3	15		
Indicator 3: Forest Health and Biodiversity	9	15		
Indicator 4: Environmental impact	7	15		
Indicator 5: Governance	23	20		
Indicator 6: Social Well-being and Livelihoods	5	15		
Total	50	100		

Guidance for Completing the Score Calculation Sheet

As shown in the score calculation sheet, there are 6 indicators with a total of 50 activities. The weightage is assigned to each indicator based on the importance of indicators in achieving community forest objectives and goals. Total score and percentage (%) score are calculated as follows;

- i. **Total score:** Total score is the sum of all the activities under each indicator (Add score from assessment sheet).

Example: Indicator 1 has 3 activities with maximum score of 5 points. Let's assume i) Sustainable harvesting of timber scored 2 points, ii) Harvest and allotment of NWFP as per AAC scored 1 point and iii) Compliance with harvesting guidelines and regulation scored 1 point. The total score for the indicator 1: Sustainable harvesting and resource use shall be $(2+1+1) = 4$ points.

- ii. **Percentage (%) score:** The percentage score is the conversion of total score into percentage based on weightage % of each indicator.

Example: The total weightage for the indicator 1 is 20% while the maximum score from 3 activities under indicator 1 is $(2+2+1 = 5)$ 5 points. Therefore,

$$\begin{aligned} \text{Percentage score} &= \text{Total score/Maximum score} \times \text{weightage \%} \\ &= 4/5 * 20\% \\ &= 16\% \end{aligned}$$

Hence, the percentage score for indicator 1 is 16%.

Similarly, repeat the same steps for all the indicators and total up the percentage score. The sum of the percentage score of all the indicators shall be counted as the total score for the evaluation.

Accordingly, the CF shall be categorized into one of the 6 categories described in Table 5.2 and accordingly, management intervention shall be prescribed to improve management of the CF.

5.8.5. Mid-term and Final Evaluation Reporting Format

The evaluation team shall prepare a summarized CF evaluation report based on reporting format below:

Introduction: Provide but not limited to a brief background on the CFMG and the evaluation team.

Objective: Shall list the objective of the evaluation.

Methodology: Explain in detail the methodology.

Observations and Recommendations: This section shall discuss all the activities under the different indicators; the observations, score, issues and challenges (if any) and the recommendations/observations by the evaluation team. For example:

Indicator 1: Sustainable harvesting and resource use

1. Sustainable harvesting of timber

Explain the activities implemented for the achievement of this activity as per AAC in management plan. The achievement shall be validated through the data/information provided by the concern field offices and also through field visits to selected sites. Accordingly, the team shall highlight the (i) issues and (ii) recommendation for each activity.

Similar approach shall be adopted for other activities under this indicator and for all 6 indicators.

Other Observations: The team may list any other observations which are not captured in the report above. These observations and recommendations shall help in improving the management of the CFMG. The team may also provide feedback on the evaluation forms.

Annexures: Duly filled mid-term and final evaluation forms in excel sheet, assessment sheet and minutes of meeting for evaluation.

The evaluation team shall then submit the report to along with the Evaluation Sheet 1 – Sheet 11 for further review and submission to the Head of the Department with recommendations and interventions required.

5.9. Annexures

5.9.1. Annexure 1: Self-annual Monitoring Forms

Form 1: Annual Work Plan and Progress Report								
ལོ། Year:		གྲོངས་ལྗེ་ནགས་ཚལ་གྱི་མིང། Community Forest Name:					རྫོང་ཁག། Dzongkhag:	
ལོ་རྒྱུས་འཆར་གཞི། Annual Work Plan						ལོ་རྒྱུས་འགྲུབ་འབྲས་རྣམས་ཀྱི་གྲུ། Annual Progress Report		
དམིགས་ལུགས། Objective	ཇུང་། SI. No	ལུ་རིགས། Activity	ས་གནས་ཡང་ན་ས་མྱོག། Block or location	ལ་གྲུངས། Quantity	ལྗེ་ཐོན་ Unit	རྒྱུ་ལུགས། Month	འགྲུབ་འབྲས་ཚད་གཞི། Quantity achieved	དྲན་གསལ། Remarks
Add more rows if required								

ཁྱིམ་འཛིན། (Chairperson)

འཛིན་པ། (Secretary)

Form 2. Seedling and Plantation Record										
ཤིང་ལྷང་དང་འཕྲོགས་སྐྱོང་གི་ཐོག་། Seedling and Plantation Record										
Name of CF:						རྫོང་ཁག། Dzongkhag:				
Gewog:						ལོ། Year:				
ཟླ་མ། Month	ས་གནས་ཡང་ས་ ཁོངས། Location or Block	འཕྲོགས་སྐྱོང་གི་དབྱེ་ཁག། Category of plantation	ཤིང་རིགས། Species	ཤིང་བཅུགས་པའི་ས་ཁོངས་རྒྱ་ ཚད། Area planted (ha)	ལྷང་གྱི་གྲངས་། ཁ། Number of seedlings	འཛིན་སྐྱོང་གི་རིང་གོང་། ཉེན་ལེ་རྒྱང་། Plantation Costs (Cash only, not in-kind)				རྫོན་གསོ། Remarks
						ལྷང་གྱི་རིང་གོང་། Seedling cost	བསྐྱེད་འགྲེན་གྱི་ རིང་གོང་། Transport cost	རིང་གོང་གཞན། Other Costs	རིང་གོང་ལོངས་ བསྐྱེད་ལེ། Total cost	
Add more rows if required										

ཉམས་འཛིན། (Chairperson)

ཉམས་ཞེན། (Secretary)

Form 5: Collection Permit						
བསྐྱུ་ལེན་ཚོག་ཐུག་ལག་ Collection Permit						
ཡང་། No.				ལྷན་ཚོགས་ལུགས་ Date:		
ཚོག་ཐུག་ལག་འཇུག་པོའི་མིའི་ལོ་ལྟར་། Name of permit holder:						
གཞི་རྒྱུ་། Village:				རྫོང་ཡོངས་། Gewog:		
Dzongkhag:				Permit No:		
རྒྱུ་ལེན་གྱི་རྒྱུ་། Duration	འཇུག་པོའི་ལུང་ལུང་། Details of products	ས་གནས་ཡང་ན་ས་ཚོགས་། Location or Block	ཚད་གཞི། Quantity	རིང་ལོང་། རྒྱུ་ལེན་གྱི་ལུང་། Rate (Nu)	རྒྱུ་ལེན་གྱི་ལུང་ལུང་། Total amount	བྲན་གསུམ། Remarks

ལྷན་ཚོགས་ལུགས་ (Chairperson)

རྒྱུ་ལེན་ལུགས་ (Secretary)

Form 6: Record of Forest Utilization in Volume																				
Record of Forest Utilization in Volume																				
Name of CF:													Dzongkhag:							
Gewog:													Year:							
Sl. No.	Date	Name of CFMG member	House No.	Permit No.	Drashing		Cham		Tsim		Dangchung		Posts		Firewood		Others		Total Fee	
					Quantity	Fee Paid	Quantity	Fee Paid	Quantity	Fee Paid	Quantity	Fee Paid	Quantity	Fee Paid	Quantity	Fee Paid	Quantity	Fee Paid		
Total																				

Chairperson (Chairperson)

Secretary (Secretary)

Form 7. Money Receipt

འཚོན་རྟགས Money Receipt

ཨང་ No. _____	ས་ཁོངས་དང་དབྱིན་ཚེས་ Place, date: _____
---------------	---

ཕྱི་ཚན་གྱི་མིང་། Name of CF Group: _____		
སློང་མིའི་(རོ་མིང་) Received from (name) _____ དངུལ་གྲུ་ the amount of Ngultrum		
_____	དངུལ་གྲུ་ Nu.	_____

དངུལ་རྒྱང་གི་ཐོག་ལས་ཡང་ན་དངུལ་འཛིན་ཨང་ By cash/cheque/cash warrant/demand draft No. _____

དངུལ་སློང་པའི་གནད་དོན། As a payment for		
༡/1 _____		
༢/2 _____		
༣/3 _____		
དངུལ་གྲུ་ཡོངས་བསྟོར། Total Nu. _____		

མིང་དང་གོ་གནས་ Name & designation: _____

མཚན་རྟགས། Signature: _____

Form 8. Cash Book									
Cash book									
ཕྱི་ཚན་གྱི་མིང། Name of CFMG Group: _____									
ཚེས་གྲངས། Date	ཚོང་བཟང། RECEIPT			ཕྱོད་བཟང། PAYMENT				རྣམ་པར་གྱི་སྲིད། BALANCE	བྲིས་ཐུགས། REMARKS
	གནད་དོན། Particulars	རི་ཏྲུག་མུ་མེད། Ref No	དུལ་ཀྲམ་ བཟོམས། Amount (Nu)	ཚེས་གྲངས། Date	གནད་དོན། Particulars	རི་ཏྲུག་མུ་མེད། Ref No	དུལ་ཀྲམ་ བཟོམས། Amount (Nu)	དུལ་ཀྲམ་ བཟོམས། Amount (Nu)	

འཁྲི་ལོ་ཚོན་པོ། (Chairperson)

འཁྲི་ལོ་ཚོན་པོ། (Secretary)

Form 9: Meeting Minutes		
འཛུགས་འདུ་ གྲོས་ཚད། Meeting Minutes		
ཕྱི་ཚན་གྱི་མིང། Name of CFMG Group: _____		
འཛུགས་འདུ་ གྲོས་ཚད། Date of meeting:	འཛུགས་འདུ་ གྲོས་ཚད་འབྲི་མི། Minutes taker (name):	
འཛུགས་འདུ་ གྲུ་མཚན། Purpose of meeting:		
འོང་ཡོད་པ་པའི་འཕུས་མི། Total number of members (Member Households) present:	སྐོ་ཡོངས་བསྟོན་མཁས། Number of Female participants:	
	སྐོ་ཡོངས་བསྟོན་མཁས། Number of Male participants:	
མགྲོན་མ་ཡང་ན་ འགོ་དཔོན་གྱི་མི་དང་གོ་གནས། Names and designation of guests/officials present:		
ཨང། Sl. No	གོ་བསྟུར་འབད་ནི་གི་གནད་དོན་དང་དཀའ་ངལ། Issues/points of discussion	འཛུགས་འདུ་གྲོས་ཚད། འགན་ཁུར་འབག་མི་ག་མོ།? ནམ་འཛུགས་འདུ་རྒྱབ་ཅི? ག་ཉེ་ལུ་འབད་རྒྱབ་ཅི? Meeting resolutions (Describe actions: By whom? When? Where?)

སྐོ་འཛིན། (Chairperson)

སྐོ་བྲིས་མཁས། (Secretary)

Form 10. Loan Record							
ལྷན་འགྲུལ་ཐོ་ཡིག་རྒྱུ་ ལོན་རེལ་ལྟར་ ལོན་རེལ་ལྟར་ ལོན་རེལ་ལྟར་ Loan record form							
མིང་ Name: རྒྱུ་ལྷན་ལྟར་མང་ CID No: ལ་བུར་ Address:		ལྷན་འགྲུལ་དུལ་བཟོ་མཉམ་ Loan amount (Nu): ལོ་བརྒྱུད་ལྷན་རྒྱུ་ Annual interest rate: ལྷན་འགྲུལ་དུལ་ལྷན་ Loan period in years:			ལྷན་འགྲུལ་ལེན་མིའི་ Signature of borrower:		
ལྷན་འགྲུལ་འགོ་བཙུགས་ཚེས་ལྟར་ Start date of the loan: ལོ་བརྒྱུད་དུལ་སྤྱོད་ལྷན་གྱི་ལ་བུར་ Number of payments per year: ལྷན་འགྲུལ་དུལ་སྤྱོད་དུལ་ Schedule payments:		ལྷན་འགྲུལ་ལོན་མཉམ་ Total interest (Nu): ལྷན་འགྲུལ་མཉམ་གྱི་ལེན་མིའི་ཚེས་ལྟར་ Liquidation date:			ལྷན་འགྲུལ་དུལ་འཛིན་གྱི་མཚན་ Signature of sanctioning authority of the group:		
ལྷན་རེལ་ Date	ལྷན་འགྲུལ་མ་ཚང་ Principal amount (Nu)	ལྷན་འགྲུལ་ལོན་མཉམ་ Interest amount (Nu)	དུལ་སྤྱོད་མཉམ་ Total amount (Nu)	དུལ་སྤྱོད་ལྷན་གྱི་ Period instalment payment (Nu)	ལྷན་འགྲུལ་ལོན་མཉམ་ Balance total amount (Nu)	ལྷན་འགྲུལ་ལེན་མིའི་ Signature of the borrower	ལྷན་འགྲུལ་ལེན་མིའི་ Signature of the office holder in charge

Form 12. Calculation of Payables to Group Members from Forest Sales					
འགན་ཚུན་ཐོན་སྐྱོད་ཀྱི་ཚོང་རྒྱུ་ལས་ཚོགས་པ་ལ་སློབ་དགོ་པའི་རེ་ཅིས། Calculation of payables to group members from forest product sales					
མང་ Sl. No	གནད་དོན་ Particulars	ཐེ་ཕན་ Unit	ཁ་གྲུབ་ Quantity	གོང་ཚད་ Rate (Nu)	དུལ་ཀྱིས་ཡོངས་བསྡོམས་ Total Amount (Nu)
	ཐོན་སྐྱོད་བཟོང་ལས་འོང་འབབ། Revenues from selling products				
ཀ A	འོང་འབབ་ཡོངས་བསྡོམས། Total revenues				
	ཚོང་འབྲེལ་གྱི་འགྲོ་སྤོང་། Expenses for marketing products				
ཁ B	འགྲོ་སྤོང་ཡོངས་བསྡོམས། Total expenses				
ག C	འབབ་པོ་ལྷོད། Net Income (A-B)				

Note: གསོག་འཛོག་བཞག་མི་ལུ་གཞི་བཞག་ཞིན་ན་ ཚོགས་པའི་འབྲུག་མི་རེ་རེ་བཞིན་དུ་ལུ་སློབ་དགོ་པའི་ཚུས། Calculation of rate to be paid to individual group members based on collection, ཚོགས་པའི་འབྲུག་མི་ལུ་སློབ་དགོ་པའི་ཡོངས་བསྡོམས་/ ཚོགས་པ་གིས་གསོག་འཛོག་འབད་མེད་ཁེད་ཁ་གྲུབ། Total payables to group members/ total quantity collected by the group, ཚོགས་པའི་འབྲུག་མི་ལུ་ཉེན་གྲངས་ལས་མི་ལུ་གཞི་བཞག་ཞིན་ན་ སློབ་དགོ་པའི་ཚུས། Calculation of rate to be paid to individual group members based on labour days, ཚོགས་པའི་འབྲུག་མི་ལུ་སློབ་དགོ་པའི་ཡོངས་བསྡོམས་/ ཚོགས་པ་གིས་ལྷ་འབད་ཡོད་པའི་ཉེན་གྲངས། Total payables to group members/ total labour days invested by the group.

Form 13. Calculation of Payables to Individual Group Members from the Forest Sales Based on Collection

ནགས་ཚལ་ཚོན་སྐྱོད་ཀྱི་ཚོང་རྒྱུ་ལས་ཚོགས་པའི་འཐུས་མི་རེ་རེ་བཞིན་དུ་ལུ་སྤྱོད་དགོ་བའི་ཚུལ།
Calculation of payables to individual group members from forest product sales based on collection

མང་ Sl. No	མིང་ Name	ཚོན་སྐྱོད་ Product	བསྐྱུ་གཤམ་ཡོད་པའི་ཁ་གྲུབ་ཀུ་ཇི། Qty. collected (kg)	གོང་ཚད་ཀུ་ཇི་རེ་ལུ་ དུལ་ གྲས། Rate (Nu/kg)*	ཡོངས་བསྐྱོན་མཉམ་ Total (Nu)	དུལ་ཚོབ་མི་གི་སྐྱག་ལཱ། Signature of recipient upon payment

* ཚོགས་པའི་འཐུས་མི་རེ་རེ་བཞིན་དུ་ལུ་སྤྱོད་དགོ་བའི་གོང་ཚད་མིན། བར་ཚོང་པ་གིས་སྤྱོད་མི་གོང་ཚད་འདི་མིན། Rate as calculated to be paid to the individual group members; not the same as the rate paid by the traders

Form 14. Calculation of Payables to Individual Group Members from the Forest Sales Based on Labor Contribution

ནགས་ཚལ་ཚོན་སྐྱེད་གྱི་ཚོང་རྒྱུ་ལས་ཚོགས་པའི་འཕུས་མི་རེ་རེ་ལ་འཚོན་དུ་ཕྱིན་གང་གླ་འཕུས་ཞི་བཞག་སྒྲོན་དགོ་པའི་ཚེས།
Calculation of payables to individual group members from forest product sales based on labour contribution

གར་ Sl. No	མི་ Name	ཚོན་སྐྱེད་ Product	ལ་འབད་པའི་ཉིན་མ་གྲངས་། No. of Labour Days	གོང་ཚད་དུ་འཕུས་ཀྱི་ Rate per day (Nu)*	དུས་ལོངས་བསྡོམས་། Total (Nu)	དུས་ཚོད་མི་གི་རྟགས། Signature of recipient upon payment

* གོང་ཚད་འདི་འཕུས་མིའི་གོས་ཚད་ལྟར་དུ་སྒྲོན་དགོ་བ། Rate per Labour Day as calculated to be paid to the individual group members; not the same as government labour day rates.

Form 16. Receivables Form							
ལེན་མིའི་དྲི་ཚིག་གི་ཁུངས་གཏུག་ལེན་མིའི་དྲི་ཚིག་གི་ཁུངས་གཏུག་							
Receivables form							
ཨང་ Sl. No	ལེན་མིའི་མིང་དང་འགྲུབ་ Receivable from (name & address)	ཁ་གསལ་ Description	འཛིན་ཚིག་གི་ཚེས་ཀྱི་ལུས་ Date (of invoice)	འཛིན་ཚིག་གི་ཚུན་ལོའི་དུས་ཚིག་ Due date (of invoice)	འཛིན་ཚིག་གི་ཨང་ Invoice no.	བརྗོད་ཚིག་ Amount (Nu)	བྲིས་ཚིག་ Remarks

5.9.2. Annexure 2: Annual Monitoring Forms

Part A

Date of Data Collection/Visit:		
Reporting Period:		
Name of Dzongkhag:		
Name of Gewog:		
Name of Village:		
Name of the CFMG:		
CFMP Translated into Dzongkhag (Y/N):		
Name of Field Office:		
Range Office:		
Beat Office:		
Name of Monitoring Officials	Designation	Office

General Information

Objectives of CF: (Refer CFMP)
1.....
2.....
3.....

Extract from the Community Forest Management Plan

Year of CF Approval	CF Area (Ha.)	Year of MP Revision	Forest Type	CF Block Number	Basal Area m ² /ha.	Comments/Remarks

Very short (max. 5 sentences) description of the changes related to group and resources management

.....

.....

.....

Part B

Member Households and Composition of the CFMG

Total Member Households	New Member Households (Since Last Record)	Review New Membership Eligibility Criteria (Yes/No)	Resigned Member Households (Since Last Record)	Comments/ Remarks (Mention Reason of Resignation and Date)

CFMG Management Committee Composition

Name	Sex	Age	Responsibilities	Year	Qualification	Contact No#	Remarks

Very short thought (max. 5 sentences) on the empowerment of the group and disadvantaged groups including women and young persons.

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Part C

Community Forest Management Group Activities

Date of Activities Conducted	Activities Conducted Since Last Visit (Meetings, Maintenance, Fire Line, Surveillance, etc.)	Female Participants	Male Participants	Total Participant	Records Available? (Minutes of Meeting, Attendance Lists) Y/N	Comments/ Remarks

Trainings Supported by DoFPS

Date of Activities Conducted	Trainings/ Capacity Building Supported by DoFPS	Female Participants	Male Participants	Total Participant	Records Available? (Minutes of Meeting, Attendance Lists) Y/N	Comments/ Remarks

Plantation

Date of Plantation	Total Area Newly Planted (Ha.)	Species Planted	Number of Seedlings	Geo-coordinates of Area	Comments	Plantation Area Map (Mapping Using Drone/ GPS)

Part D

Use of Timber, Fuel Wood, Non-Wood Forest Products and All Other Products from the Forest

AAC As Per Plan (M ³)	Product Type	Timber Harvested from within CF									Timber Supplied from Outside of CF	Comments/Remarks
		Annual Demand (M ³)	Quantity for Own Use (Subsistence)			Quantity Sold		Total Volume Harvested from CF (M ³) [A+B]	Total Income (Nu.) [C+D]	Silviculture System Applied to Harvest			Total Volume (M^{3})
			Volume (M ³) [A]	Total Fees (Nu.) [C]	No. of Beneficiary HH	Volume (M ³) [B]	Income (Nu.) [D]					
	Drashing											
	Cham											
	Tsim											
	Dangchung											
	Flag post											
	Fencing post											
	Fire wood											
Total												

Non-wood Forest Products (NWFP)

Product	Quantity for Own Use (Subsistence)	Quantity Sold	Total Quantity	Total Income	As Per Harvested	Co
---------	------------------------------------	---------------	----------------	--------------	------------------	----

	Unit	Quantity [A]	Total Fees (Nu) [C]	No. of Beneficiary HH	Quantity [B]	Income (Nu) [D]				
Total										

Please briefly report (max. 5 sentences) on the most promising NWFP products for this CFMG

.....

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.....

.....

.....

Payment for Ecosystem Services (PES)

Type of PES	Start Year	Income Generated (Nu)	Comments/ Remarks

Ecotourism Activities/Programs

Type of Ecotourism Activities	Start Year	Income Generated (Nu)	Comments/ Remarks

Part E

Funds and Expenses

Source of Revenue	Amount (Nu.) [A]	Expenses	Amount (Nu.) [B]	Net Income (Nu.) [A-B]
Membership fees		Investment on CF (material, receipt, permit books, seedlings, labour etc.)		
Fees for Permits and products (trees or any timber products)				
Revenues from sale of timber		Expenses for harvesting forest products (machinery, transport, labor etc.)		
Revenues from sale of NWFP				
Payment from Ecosystem Services		Expenses related to forest product marketing (transport, transformation)		
Interest from loans and bank savings		Expenses for Community Development and Infrastructure		
Fines and penalties		Other expenditures* Annual meeting		
Ecotourism		Tax payment		
Others (Specify)				
Total		Total		

Total Capital

Part F

Balance: Cash in Hand (Nu.) [C]	Balance: In Bank Account [D]	Total Amount of Active Loans/Loans Given (Nu.) [E]	Total Capital [C+D+E]	Comments/ Remarks

Other Information

Topics	Frequency	Reasons	Management /Solution
Conflicts			
Illegal activities by CFMG members			
Illegal activities by other than CFMG members (illegal timber, NWFP, Poaching, Fishing, land related illegal activities, waste)			
Forest Fires			
Pest and diseases			
Other incidences (specify)			

Issues and Recommendations

Important Issues/Challenges	Recommendations

5.9.3. Annexure 3: Mid-term and Final Evaluation Forms

Sheet 1

General Information

Name of Data Collector/Forestry Official:	
Date of Data Collection/Visit:	
Name of Village:	
Type of Evaluation:	

Name of Field Office:		
Range Office:		
Beat Office:		
Name of Evaluating Officials	Designation	Office

The introduction section requires the evaluation team to fill in basic information about the evaluation, the team composition, the CF and its jurisdiction under which it falls.

Information on CF

CF Name	Dzongkhag	Gewog	Total No. of Management Committee Members		Total No. of CFMG Members During Time of Evaluation		Total CF Area	Management Plan Period	AAC (m3)	Remarks
			Male	Female	Male	Female				

Membership Details

Total New Member Households After Formation/Revision of CFMG	Resigned Member Households After Formation/Revision of CFMG

Sheet 2

Key Achievement for CFMG Activities

No. of Activities Conducted (Meetings, Maintenance, Fire Line, Surveillance, etc.)	Female Participants	Male Participants	Total Participants	No. of Records Available	No. of Unrecorded Activities

Trainings Supported by DoFPS

No. of Trainings/ Capacity Building Supported by DoFPS	Female Participants	Male Participants	Total Participants	No. of Records Available	No. of Unrecorded Activities

Sheet 3

Key Achievement for Plantation

Year of Plantation	Total Area Newly Planted (Ha.)	Species Planted	Number of Seedlings	Average Plantation Establishment %	Comments
1					
2					
3					
4					
5					
6					
7					
8					
9					
Total					

Sheet 4

Forest, Biodiversity and Natural Resources

Forest Situation /Vegetation Type	Tree Density (Tick the box)	Regeneration (All species with tree life form less than 5cm diameter at breast height) (Average count)	Comments/ Remarks
	<10 trees/ha <input type="checkbox"/>		
	10-50 trees/ha <input type="checkbox"/>		
	>50 trees/ha <input type="checkbox"/>		

	Soil Cover % (tick the box)	Canopy Density (tick the box)	
	>80% of soils are covered by vegetation <input type="checkbox"/>	No forest = 0 -9% <input type="checkbox"/>	
	60 - 79% of soils are covered by vegetation <input type="checkbox"/>	Open forest = 10% - 39% <input type="checkbox"/>	
	40 - 59% of soils are covered by vegetation <input type="checkbox"/>	Moderately dense forest = 40% - 59% <input type="checkbox"/>	
	20 - 39% of soils are covered by vegetation <input type="checkbox"/>	Dense forest = 60% - 69% <input type="checkbox"/>	
<19% of soils are covered by vegetation <input type="checkbox"/>	Very dense forest = 70% - 100% <input type="checkbox"/>		
List Protected Species (plant and animals)			
Presence of Wildlife (mention physically seen or evidence of any wildlife)			
Water Availability (More – less – no difference? Please explain shortly)			

Sheet 5

Key Achievement for Timber

AAC	Year	Timber Harvested from Within CF								Timber Supplied from Outside of CF	Comments/ Remarks
		Quantity for Own Use (Subsistence)			Quantity Sold		Total Volume Harvested from CF (m3) [A+B]	Total Income (Nu.) [C+D]	Silviculture System Applied to Harvest	Total Volume (m3)	
		Volume (m3) [A]	Total Fees (Nu) [C]	No. of Beneficiary HH	Volume (m3) [B]	Income (Nu) [D]					
	1										
	2										

	3										
	4										
	5										
	6										
	7										
	8										
	9										
	Total										

Sheet 6

Non-wood Forest Products (NWFP)

Year	Product Type/ Species	Quantity for Own Use (Subsistence)				Quantity Sold		Total Quantity Harvested [A+B]	Total Income (Nu.) [C+D]	As per Harvesting Guidelines of NWFP (Yes or No)	Comments/ Remarks
		Unit	Quantity [A]	Total Fees (Nu) [C]	No. of Beneficiary HH	Quantity [B]	Income (Nu) [D]				
1											
2											
3											
4											
5											
6											
7											
8											
9											
Total											

Sheet 7

Payment for Ecosystem Services (PES)

Type of PES	Year	Income Generated (Nu)	Comments/ Remarks
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	Total		

Sheet 8

Ecotourism Activities/Programs

Type of Ecotourism Activities	Year	Income Generated (Nu)	Comments/ Remarks
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	Total		

Sheet 9

Funds and Expenses

Year	Revenue Amount (Nu.) [A]	Expenses Amount (Nu.) [B]	Net Income (Nu.) [A-B]

1			
2			
3			
4			
5			
6			
7			
8			
9			
Total			

Total Capital

Balance: Cash in Hand (Nu.) [C]	Balance: In Bank Account [D]	Total Amount of Active Loans / Loans Given (Nu.) [E]	Total Capital [C+D+E]	Comments/ Remarks

Sheet 10

Other Information

Topics	Frequency	Reasons	Management /Solution
Conflicts			
Illegal activities (illegal timber, NWFP, Poaching, Fishing, land related illegal activities, waste, etc.)			
Forest Fires			
Pest and diseases			
Other incidences (specify)			

Sheet 11

Issues and Recommendations

Important Issues/Challenges	Recommendations



Plantation

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6. Monitoring and Evaluation of Plantation

6.1 Introduction

Plantation program in Bhutan has long history and has been one of the priority programs across the all-five-year development plans. Forest plantation maybe categorized into industrial plantation, avenue plantation, roadside plantation, community plantation, ceremonial plantation, etc. However, all types of plantations fall under one three broad categories of afforestation, reforestation and enrichment planation, as the primary objectives of plantation is to rehabilitate degraded forest, protect water catchment areas, improve aesthetics values, restock degraded and harvested forests and improve the existing stocks.

The forest plantation impacts assessment report March 2022 shows that the Department of Forests and Park Services (DoFPS) and other agencies has carried out plantation in 54,782.38 acres of land from 1951 to 2012 excluding reforestation in Forest Management Units (SFED, 2022). As per the report, about 62.2% of the plantations have failed with 4,388.06 acres (8.08%) of them were complete failure, and another 14,722.06 acres (24.84%) plantation were non-traceable. The average survival percent of existing plantations up to 2012 are 57.96% while only about 37.8% (20,705.29 acres) are likely to successfully established as forests.

Further, DoFPS has invested in additional plantation of 3436.03 ha between 2013 to 2023 (Forest Facts and Figures 2014; 2015; 2016, 2017; 2018 & 2019; Annual Forestry Statistics (2020, 2021, 2022 & 2023). However, the status of these plantations could not be determined with limited access to information.

The poor success rate of the plantation and lack of up-to-date data on plantations are mainly attributed to limited funding for plantation maintenance, natural calamities, poor site and species selection, weak monitoring, unfavorable climatic conditions, besides limited and adhoc plantation Monitoring and Evaluation (M&E) conducted in the past. Therefore, the DoFPS developed a “*Guidelines for Monitoring and Evaluation of Plantations and Forest Nursery*” in 2019 which was later updated and incorporated into Forest and Nature Conservation Code of Best Management Practices of Bhutan (hereinafter referred to as the “*Code*”), 2021. Therefore, this plantation M&E framework builds on *Code* and existing practice to strengthen and streamline the process by simplifying the content and incorporating assessment methods and tools for implementation. This framework shall be used in conjunction with existing plantation guidelines and strategy defined in the *Code*.

6.2 Objectives of Monitoring and Evaluation

M&E for plantation are very essential processes for sustainable forest management and conservation. It provides vital data for assessing the health and performance of the plantation as well as strengthening plantation programs in future. The general objectives of M & E are to:

1. Verify whether the plantations are carried out as per the technical estimates and specification;
2. Evaluate the status and survivability of the plantation;
3. Assess the growth and development of the plantation;
4. Update the plantation record on an annual/periodic basis;
5. Asses social, economic, and environmental impacts of plantation;
6. Strengthen current and future plantation programs;
7. Assess areas under afforestation, reforestation, and any other type of plantation; and to
8. Assess the impact of plantations.

6.3 Types of Monitoring & Evaluation

Plantation monitoring and evaluation is categorized into three categories based on the frequency and time of the monitoring and evaluation. These categories are;

1. Annual monitoring
2. Mid-term evaluation
3. Final evaluation

However, plantations may also be subject to long term M&E to understand the growth and development in future. Figure 6.1 shows the types of monitoring, periodicity, and season for each activity.

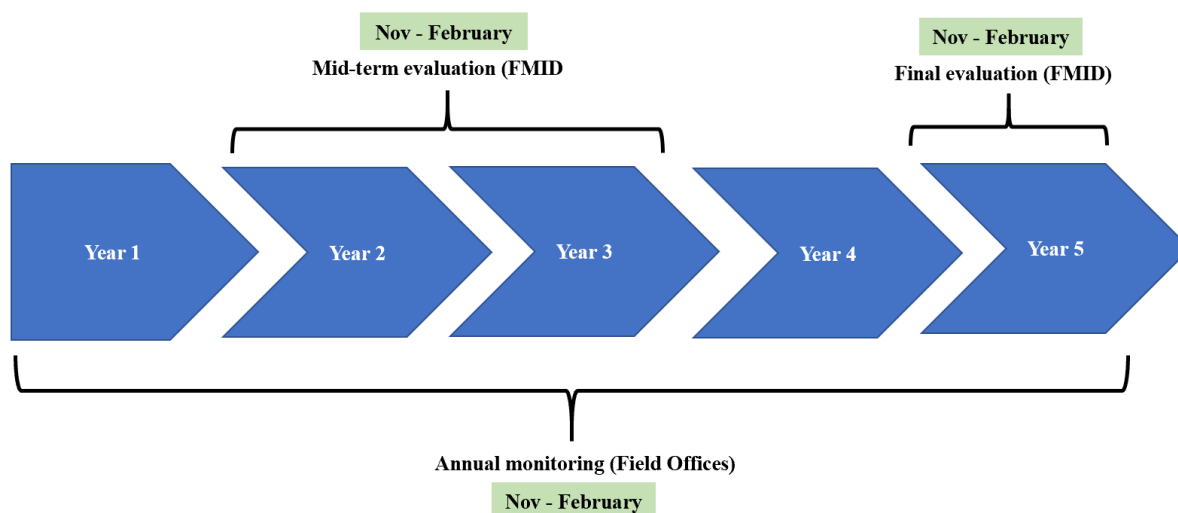


Figure 6.1. Monitoring & Evaluation Process

6.4 Roles and Responsibilities

Forest plantation in Bhutan is a multi-sectoral approach involving different actor or players at different stages of the plantation. Therefore, M&E shall consider all relevant stakeholders as described in Table 6.1 with their roles and responsibilities at different stages of plantation and M&E.

Table 6.1. Roles and Responsibilities

Sl. No	Activities	Lead	Collaborator	Objectives
1	Determine and set annual plantation target as per FYP, prepare annual plan and provide target to FMID to plan for M&E	FPRMD	Field Offices, NRDCL, GBCL, BBPL, FMID	<ul style="list-style-type: none"> Prepare plan and set target
2	Plantation creation	Field offices /NRDCL/ GBCL	FRPMD, NRDCL, GBCL, BBPL, FMID	<ul style="list-style-type: none"> Ensure the plantations are carried out as per activity plan in point 1 Maintain the plantation journals
3	Annual monitoring of the plantation	Concern CFO	FRPMD, NRDCL, GBCL, BBPL, FMID	<ul style="list-style-type: none"> To assess the success of the plantation
4	Mid-term evaluation	FMID	FRPMD, NRDCL, GBCL, BBPL	<ul style="list-style-type: none"> To assess the success of the plantation
5	Final evaluation	FMID	FRPMD, NRDCL, GBCL, BBPL	<ul style="list-style-type: none"> To assess the success of the plantation Recommend need for further maintenance of the plantation
6	Long-term M&E	FMID and field offices	FRPMD, NRDCL, GBCL, BBPL	<ul style="list-style-type: none"> To determine the success of the plantation

*Forest Resources Planning and Management Division (FPRMD), Natural Resources Development Cooperation Limited (NRDCL), Forest Monitoring and Information Division (FMID), Green Bhutan Cooperation Limited (GBCL), Bhutan Board Products Limited (BBPL)

6.5 Monitoring and Evaluation Method

6.5.1 Monitoring and Evaluation Plan

FMID and the concerned field offices shall prepare annual monitoring and evaluation plan and regularly update the mid-term evaluation and final evaluation targets and intimate to the field offices.

6.5.2 Equipment and Materials

Plantation M&E entails detailed field assessment through sampling. Therefore, the monitoring and evaluation team shall draw the detail assessment plan and obtain the following references/equipment for timely and smooth conduct of M&E.

6.5.3 Reference Documents

The following documents and reference shall be made available to the monitoring team.

- a) **Plantation Journal:** This is a single most important document about the history of the plantation and monitoring/evaluation team be provided an access to this document by site in-charge. Plantation journal shall be maintained by agency executing the plantation with technical support from field offices under Department.
- b) **Plantation Maintenance Report:** The plantation is maintained annually. All type of maintenance report but not limited to following shall be made accessible to monitoring and evaluation team, Annual plantation maintenance report: Casualty replacement report; Weeding reports 2 for conifer zones and 3 for broad leaved forest and, Fencing maintenance report.
- c) **Past Monitoring and Evaluation Reports:** FMID shall provide a copy of past annual monitoring and evaluation reports to the monitoring and/or evaluation team for subsequent M& E program.
- d) **Plantation Map and Location:** M&E team shall collect a copy of plantation map and location details (site coordinate) of the plantation area from FMID or field offices concerned prior to field visit.

6.5.4 Equipment

The following important equipment must be carried at the time of field visit for plantation monitoring and evaluation.

- a) **GPS** for navigation to plantation sites using plantation map or site location. GPS may also be used for plantation maps.
- b) **Drone** for plantation mapping and growth monitoring if available.
- c) **Clinometer** for slope measurement.
- d) **Compass** for direction.
- e) **Measuring tape** for laying out the sample plots, measurement of seedling height, measurement of girth at collar region and girth at breast height (1.37 m). Measuring tape is also used for laying out the line transect.
- f) **Calculator** for mathematical calculations.
- g) **Diameter tape** for measurement of diameter at breast height and collar region.
- h) **Smart phone** for data recording, photography.
- i) **Camera** for photography if available.

6.5.5 Forms

There are total of eight forms for plantation M&E depending on the monitoring and evaluation functions/ process described in section 6.3 and Figure 6.1. The forms are available both in hard copy and excel based electronic forms. The monitoring or evaluation team may use either of the forms as may be desirable. These forms are:

PME 1: Plantation Information for M&E form for compilation of general information about the plantation.

PME 2: Species list form for listing the species planted in the given plantation site.

PME 3: Tally sheet for quantitative field assessment or plot data collection form for field recording and measurement.

PME 4: Plot Summary Form for compiling plot wise summary from PME 3.

PME 5: Summary result form for compiling results of PME 3 and PME 4.

PME 6: Annual Monitoring Form for compilation and recording to assess the status of plantation annually.

PME 7: Evaluation Form for assessing the status of plantation during mid-term and final evaluation.

PME 8: Monitoring/Evaluation Report Form- structure of the M&E report.

6.6 Plantation Monitoring and Evaluation Indicators

The success and failure as well as its social, economic, and environmental impacts must be measured against some indicators. A set of interlinked M&E criteria indicators are described in Table 6.2 and 6.3 respectively.

6.6.1 Plantation Monitoring Criteria and Indicators

Three main indicators and eighteen sub-indicators have been developed for the annual monitoring of the plantations.

Table 6.2. Plantation Monitoring Criteria and Indicators

Criteria/Indicators	Descriptions	Data/Source/ Assessment Method
1. Administration, Governance, and Management		
1.1 Plantation maintenance conducted	Whether or not plantation maintenance is carried out	Field observation/ plantation journal
1.2 Casualty replacement	Record of causality replacement	Field observation/ plantation journal
1.3 Percent of causality refilling	Percentage of casualty replacement	Field observation/ plantation journal
1.4 Quality of fencing	Quality of fencing	Field observation/ plantation journal
1.5 Extent coverage of fencing	Coverage of the fencing around the plantation area	Field observation/ plantation journal
1.6 Number of weeding/tending operations?	Number of weeding/ tending operation carried out in one year	Field observation/ plantation journal
2. Plantation Growth & Development		
2.1 Overall survival percent	Percent of living seedlings against total seedlings planted for all the species	PME5
2. 2 Species wise survival percent	Percent of living seedlings by species. Survival percent for different species	PME5

2.3 Percentage of seedlings established	Percent of seedling which are at least 2m in height measured against number of seedlings in the sample plot which are alive at the time of field assessment	PME5
2.4 Percentage of seedlings unestablished	Percent of seedling which are at less than 2m in height measured against number of seedlings in the sample plot which are alive at the time of field assessment	PME5
2.5 Average collar diameter of all species	Average collar diameter of all seedlings which are alive	PME5
2.6 Average species wise collar diameter	Average species wise collar diameter for each species. Only alive seedlings shall be considered	PME5
3. Disturbance		
3.1 Grazing pressure	Presence and absence of grazing	Field observation
3.2 Illicit felling	Presence and absence of illegal felling evidence	Field observation
3.3 Waste dumping	Presence and absence of waste	Field observation
3.4 Developmental activities	Presence developmental activities	Field observation
3.5 Fencing damage	Presence damage to fencing	Field observation
3.6 Enhanced growth of invasive species	Presence growth of invasive species	Field observation
3.7 Damage by forest fire	Presence and absence of forest fire evidence	Field observation
5.8 Damage by pest and diseases	Presence and absence of pest and disease evidence	Field observation

6.6.2 Plantation Evaluation Criteria and Indicators

Five broad indicators are developed for mid-term and final evaluation of the plantation, and to assess the success and failure of the plantation.

- i. Administration, governance, and management indicator
- ii. Plantation growth and development indicators
- iii. Environmental indicators
- iv. Social indicators
- v. Disturbance indicator.

For each of these main indicators, a few sub-indicators or activities are developed for assessment during mid-term and final evaluations. Table 6.3 provides the list of indicators and a description of each indicator and methods of assessment.

Table 6.3. Plantation Evaluation Criteria and Indicators

Criteria/Indicators	Descriptions	Data/Source/Assessment Method
1. Administration, Governance, and Management		
1.1 Plantation Journal up to date	Plantation journal of the plantation.	1. Verify if the plantation journal is maintained 2. Verify whether plantation journal is up to date including all activities carried out in the plantation areas since initial creation
1.2 No. of annual monitoring conducted	Number of annual plantation monitoring conducted at the time of evaluation. Concerned CFO are required to conduct at least annual monitoring every year	1. Refer plantation journal to verify the number of annual monitoring conducted 2. Past annual monitoring reports
1.3 No. of evaluation conducted	A number of plantation evaluations were conducted at the time of current evaluation. FMID is required to conduct mid-term evaluation, final evaluation, and long-term evaluation	1. Refer plantation journal to verify the number of evaluations conducted 2. Past evaluation reports
1.4 Plantation map developed	Plantation map	1. Plantation Journal and plantation maintenance report 2. Check the availability of the spatial data
1.5 Plantation maintenance conducted	Whether or not plantation maintenance is carried out in terms of weeding, casualty replacement, fencing repair, etc.	1. Plantation Journal and plantation maintenance report 2. Field observation
1.6 Site selection	Suitability of the site on which plantation is carried out in terms of soil, climate, etc.	1. Visual observation 2. Relationship with survival percent
1.7 Species selection	Suitability of the species on which plantation is carried out. If local/native species are used.	1. Visual observation 2. Relationship with survival percent
2. Plantation Growth and Development		
2.1 Percentage of seedlings established	Percentage of seedling which are at least 2m in height measured against number of seedlings in the sample plot which are alive at the time of field assessment	PME5
2.2 Percentage of seedlings unestablished	Percentage of seedling which are at less than 2m in height measured against number of seedlings in the sample plot which are alive at the time of field assessment	PME5

2.3 Percentage composition of native species	Number of native species against the different types of species planted	PME5
2.4 Overall survival percent	Percent of living seedlings against total seedlings planted for all the species	PME5
2.5 Species wise survival percent	Percent of living seedlings by species. Survival percent for different species	PME5
2.6 Average collar diameter of all species	Average collar diameter of all seedlings which are alive	PME5
2.7 Average species wise collar diameter	Average species wise collar diameter for each species. Only alive seedlings shall be considered	PME5
2.8 No. of seedlings with height $\geq 2m$	No. of seedlings with height more than or equal to 2 m	PME5
2.9 Average diameter of seedlings	Average Diameter at breast height (DBH) of seedlings.	PME5
2.10 Seedling density	Average density of the seedling based on field assessment	PME5
3. Environmental Impacts		
3.1 Improved Forest cover	If the plantation brought about increase in forest area	If plantation has turned into forest
3.2 Evidence of wild fauna improved	Presence or absence of wildlife in the plantation area	Perception survey/visual observation
3.3 Barren/degraded area restored	Presence or absence of wildlife in the plantation area	Perception survey/visual observation
3.4 Provided protection to water resources	Evidence of water source protection	Perception survey/visual observation
3.5 Enhanced growth of invasive species	Presence and absence of waste	Perception survey/visual observation
3.5 Waste dumping	Presence and absence of waste	Perception survey/visual observation
4. Social Impacts		
4.1 Reduced existing grazing lands	Whether or not plantation has led to decrease in grazing area	Perception survey/visual observation
4.2 Enhanced availability of commonly collected NWFPs	Presence and absence of waste	Perception survey/visual observation
4.3 Improved aesthetics value	Evidence and/or perception recreational values	Perception survey/visual observation
4.4 Enhanced access to timber resources	Potential for increasing timber production	Perception survey/visual observation
5. Disturbance		
5.1 Grazing pressure	Presence and absence of grazing	Perception survey/visual observation

5.2 Illicit felling	Presence and absence of illegal felling evidence	Perception survey/visual observation
5.3 Damage by pest and diseases	Presence and absence of pest and disease evidence	Perception survey/visual observation
5.4 Damage by forest fire	Presence and absence of forest fire evidence	Perception survey/visual observation

The evaluation of the plantation shall be carried out periodically to assess and determine the successfulness of the plantation. The *Code* recommends mid-term evaluation at 2nd or 3rd year of plantation and final evaluation at the end of the 5th year as described below. However, many plantations shall not be fully established at the age of 5 years and require continuous monitoring and evaluation not only to ensure that the plantations are successful but also to track the growth and development of the plantations. Therefore, the following are proposed under this framework.

- a) Continuous long-term monitoring and evaluation once every 3-5 years for plantations which are fully established at the end of final evaluation.
- b) Continuous annual monitoring of the plantation beyond 5 years if plantation is not fully established after five years from the date of initial plantation.

6.7 Conducting Plantation Monitoring & Evaluation

Plantation monitoring and evaluation involves careful planning and preparation. Step wise approach shall be used for plantation M & E in three different stages and each of these stages shall be implemented in sequence.

6.7.1 Stage 1: Desk Assessment

During the desk assessment, the M&E team shall carry out the following task in collaboration with FMID and concerned field offices.

- Plan for plantation monitoring/evaluation including date for such activity.
- Develop survey/field assessment sample design to reduce any potential bias during the field assessment as described below or refer *Code* for the sampling design
- Collect all relevant information from the concerned office (Field offices/FMID) and complete the plantation M&E form PME1 and PME2
- Liaise with concerned field office.
- Review past annual monitoring reports and evaluation reports.
- Review plantation journals.
- Prepare a list of species planted.

6.7.1.1 Sampling Design for Field Assessment

The field assessment of the plantation shall be carried following the method described in the *Code 2021*. The Code recommends using line transect sampling method or systematic/random sampling method for field assessment of the plantation. Figure 6.2 and Figure 6.3 show diagrammatic illustration of line transect, systematic/random sample design for plot layout in plantation assessment.



Figure 6.2: Line Transect Sampling and Layout of Sample Plots

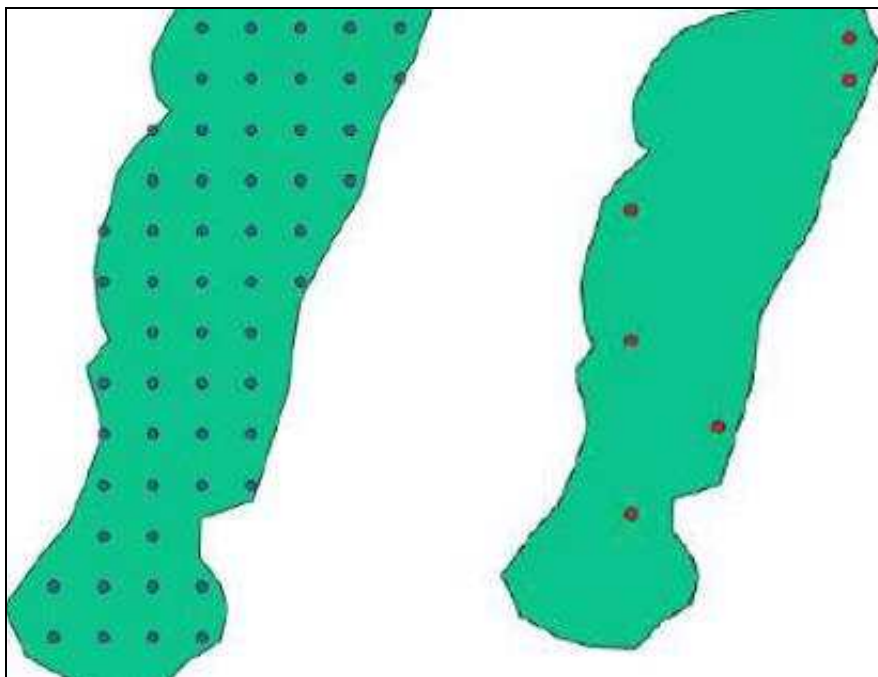


Figure 6.3: Systematic/Random Sampling Design for Plantation Assessment

6.7.1.2 Sampling Intensity

The code recommends sampling at least 2 to 5% of plantation area for monitoring and evaluation respectively depending on the area of the plantation. Higher percent of area is recommended for small area plantation and vice versa. Table 6.12 shows the minimum number of sample plots to be used for field assessment of the plantations.

Table 6.4: Minimum Number of Sample Plots

Area (Ha)	Sample Plot
1-4	3
5-10	6 or 2% of plantation area which ever is higher
Above 10	9 or 2% of plantation area which ever is higher

6.7.1.3 Plot Design

The minimum sampling plot size is 15 m x 15 m square plot for all plantation sites except for the plantation along the cable corridors in the Forest Management Units (FMU). For the plantation along the cables, a plot size of 25 m x 9 m rectangular plot (Figure 6.5) shall be adopted expanding 2.5 m on both side of the center of cable corridor, where length of the plot shall be parallel to cable cruise line and width perpendicular to the cruise line. One sample plot shall be laid inside the group opening, which shall be centrally located and dimension of plot shall be 15m x 15 m (Figure 6.4). The sampling design and minimum number of plots required for field assessment as recommended in the *Code* is reproduced below:

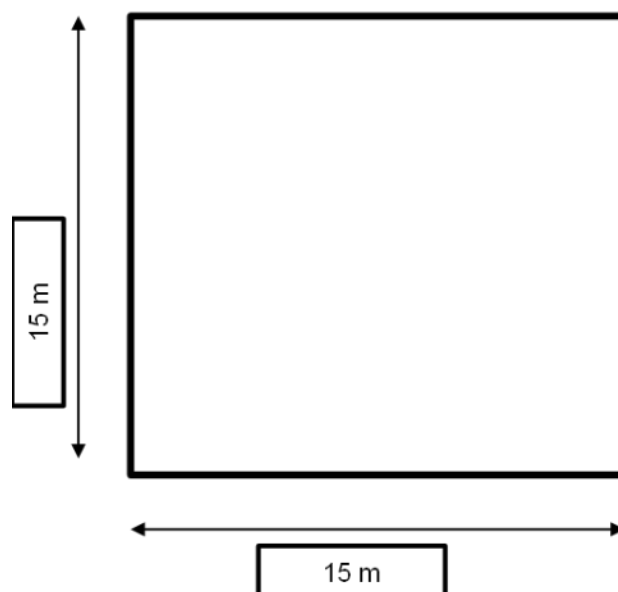


Figure 6.4: General Plot Design

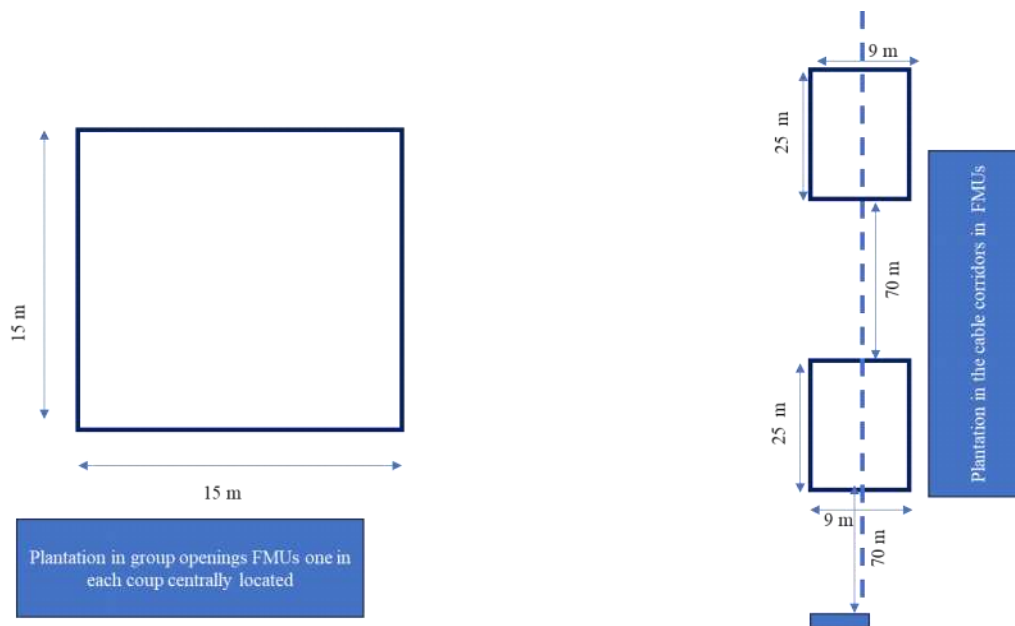


Figure 6.5: Plot Design for Plantation Assessment in FMU

6.7.2 Stage 2: Field Assessment

The monitoring or evaluation team shall make the field visit and carry out the following works in the field:

- Field visit for field validation.
- Survey and assessment growth and development of plantation.
- Conduct perception surveys or expert judgement on environmental, social, and economic impacts.
- Carry out plantation mapping using drone or other technologies.
- Identify field issues and challenges.

6.7.2.1 Data Collection

The quantitative assessment of plantation may involve total enumeration or survey depending on the acreage or plantation type (e.g., linear plantation) at the time of monitoring or evaluation. Using the sampling and plot design developed during the desk review, the monitoring and evaluation team shall collect the data using PME3.

6.7.2.2 Data Analysis

The data collected from the sample plot shall be used for computation of estimates to assess the status of the plantations. Some of the important plot and species level estimates are;

- i. Number of seedlings planted in each sample plot (A) $Estimated\ No.\ of\ seedlings\ in\ plot = \frac{Plot\ Area}{Grid\ Area}$

Where, Plot Area is sample plot area (m²) and Grid Area is area presented each seedling planted (i.e., L x W, where L and W are plantation spacing).

- ii. Number of live seedlings (B) = sum of live seedlings in the sample plot
- iii. Number of dead seedlings (C) = A – B

- iv. Survival Percent (D) = $B \times 100 / A$
- v. Average Collar Diameter (E) = Sum of collar diameter / B
- vi. Number of seedlings with height ≥ 2 m (F) = total count of number of seedlings with height more than or equal to 2 m in sample plot
- vii. Number of seedlings with height < 2 m (G) = $B - F$
- viii. Percent of seedlings established (H) = $F \times 100 / B$
- ix. Mean bh diameter (I) = Sum of DBH / F
- x. Average density (J) = B/ plot area

Using the same equations, A-J estimates shall be generated at species level to complete the plantation monitoring and evaluation form PME 4.

6.7.3 Stage 3: Reporting

Upon completion of the desk review and the field assessment, the M&E team shall develop a detail monitoring or evaluation report using the prescribed format (PME 8). The monitoring report shall consist of PME 1-6 along with detailed report in PME 8. Similarly, the plantation evaluation report shall consist of PME 1-5 and PME 7 along with detail report in PME 8. FMID shall produce a synthesis report of annual monitoring report identifying the key challenges/issues and provide recommendations for improvement.

6.8 Procedures and Forms for Plantation M&E

6.8.1 Plantation Information

Plantation monitoring team or FMID shall compile the general information on the plantation area designated for monitoring as per form PME1.

PME 1: Plantation Information for M&E

1. Name of Plantation:					
2. Objectives of Plantation:					
	<input type="checkbox"/>	Protect, rehabilitate, and manage critical and degraded watersheds for sustained flow of good quality water			
	<input type="checkbox"/>	Improve aesthetic values through development and beautification of landscapes;			
	<input type="checkbox"/>	Protect and promote native and local species;			
	<input type="checkbox"/>	Climate change mitigation			
	<input type="checkbox"/>	Others, specify			
3. General Information					
Date of Plantation (dd/mm/yyyy)		Financial Year:			
Area (ha):		Altitude:		Aspect:	
Slope percent:		Soil types:		Fund source:	
Dzongkhag:		Division/PA:		Expenditure (Nu.):	

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Gewog:		Range name:		Location Name	
Agency Name *				* Agency name means name of Agency who carried out plantation	
Plantation spacing (m x m)		Length		Width	
Plantation method		Northing (Y)		Easting (X)	
1. Direct seeding- Thalís <input type="checkbox"/> 2. Direct seeding- Line/terraces <input type="checkbox"/> 3. Direct seeding- Dibbling <input type="checkbox"/> 4. Direct seeding- seed broadcasting <input type="checkbox"/> 5. Seedling planting- Entire planting <input type="checkbox"/> 6. Seedling planting- Ploy pot seedling <input type="checkbox"/> 7. Seedling planting- Earth ball <input type="checkbox"/> 8. Seedling planting- Stump planting <input type="checkbox"/> 9. Seedling planting- Rhizomes <input type="checkbox"/>					
Is plantation journal available?	Yes <input type="checkbox"/>	No <input type="checkbox"/>			
Is plantation journal updated?	Yes <input type="checkbox"/>	No <input type="checkbox"/>			
Is plantation Mapped?	Yes <input type="checkbox"/>	No <input type="checkbox"/>			
If plantation is mapped	1. Drone Mapping <input type="checkbox"/>		2. GPS Mapping <input type="checkbox"/>		
3. Both <input type="checkbox"/> 4. Others <input type="checkbox"/> Specify:					
If plantation is not mapped, why?	1.				
	2.				
	3.				
4. Plantation Type (Tick only one)					
Afforestation <input type="checkbox"/>	Plantation subcategory				
	Normal <input type="checkbox"/>	Rehabilitation <input type="checkbox"/>	Industrial <input type="checkbox"/>	Institutional <input type="checkbox"/>	Community <input type="checkbox"/>
	Private <input type="checkbox"/>	Urban/avenue <input type="checkbox"/>	Compensatory <input type="checkbox"/>	Watershed <input type="checkbox"/>	Agroforestry <input type="checkbox"/>
Ceremonial* <input type="checkbox"/> Pay and Plant <input type="checkbox"/> Commemorative* <input type="checkbox"/> Avenue <input type="checkbox"/>					
Reforestation <input type="checkbox"/>	Plantation subcategory				
	Industrial <input type="checkbox"/>	Institutional <input type="checkbox"/>	Community <input type="checkbox"/>	Private <input type="checkbox"/>	Urban/avenue <input type="checkbox"/>
	Compensator y <input type="checkbox"/>	Watershed <input type="checkbox"/>	Agroforestry <input type="checkbox"/>	Ceremonial* <input type="checkbox"/>	Pay and Plant <input type="checkbox"/>
Enrichment Plantation <input type="checkbox"/>	Plantation subcategory				
	Industrial <input type="checkbox"/>	Institutional <input type="checkbox"/>	Community <input type="checkbox"/>	Private <input type="checkbox"/>	Urban/avenue <input type="checkbox"/>
	Compensator y <input type="checkbox"/>	Watershed <input type="checkbox"/>	Agroforestry <input type="checkbox"/>	Ceremonial* <input type="checkbox"/>	Pay and Plant <input type="checkbox"/>
* Remarks (Short description)					
5. Forest types in the vicinity					
Subtropical Forest <input type="checkbox"/>			Warm Broadleaved Forest <input type="checkbox"/>		

of plantation	Evergreen Oak Forest <input type="checkbox"/>	Cool Broadleaved Forest <input type="checkbox"/>			
	Blue Pine Forest <input type="checkbox"/>	Spruce Forest <input type="checkbox"/>			
	Hemlock Forest <input type="checkbox"/>	Fir Forest <input type="checkbox"/>			
	Juniper Rhododendron Forest <input type="checkbox"/>				
6. Species planted	Name	Number		Name	Number
	1.			6	
	2.			7	
	3.			8	
	4.			9	
	5.			10	
Brief description of the plantation site					
Remarks on new plantation					
<p>Guidance for completing the form PME2 (All except a few information should be available from plantation journal)</p> <ol style="list-style-type: none"> 1. Enter the name of the plantation site. 2. Tick the relevant plantation objectives from the given list. If the plantation objective is not listed, select other and specify. 3. Complete the general information about the plantation such as date of plantation, financial year, Area, Soil type, Funding Source, Dzongkhag, Division/PA, Expenditure, Gewog name, Range Name, Location name. 4. The northing and easting of the plantation shall be recorded from the center of the plantation area using GPS or smart phone. 5. Tick relevant plantation method from the list provided. 6. Verify whether plantation journal is maintained or not and indicate, Yes or No. 7. Verify if the plantation journal is updated on a regular basis. Most updated plantation journals should have information regarding the activities implemented in the plantation, updated record of field monitoring, field visit by any individuals/agencies. Accordingly indicate in the relevant cell. 8. Verify whether the plantation area is mapped? If mapped verify the method of mapping and if not ask the reasons why plantation area could not be mapped and note down in the appropriate cell. 9. Determine the plantation type such as Afforestation, Reforestation and Enrichment Plantation and tick the appropriate plantation type. Subsequently select relevant plantation subcategory. 10. Select appropriate forest type in the locality of the plantation area. 11. Make a list of species planted in the plantation and note total number of each species planted. 12. Provide any additional description of the plantation site. 					

6.8.2 Preparation of Species List

FMID or the concerned field office shall prepare a list of species planted in each plantation site using form PME2. The list of species can be obtained from the plantation journal or PME1.

PME 2: Species List

Sl. No	Species Name	Species code
1		1
2		2
3		3
4		4
5		5
6		6
7		7
8		8
9		9
10		10
11		11
12		12
13		13
14		14
15		15
16		16
17		17
18		18
19		19
20		20

Guidance for Completing Form PME2.

1. Prepare a list of species planted in the given plantation site.
2. Enter the species listed in step 1 into this Form by typing the name of the species in the *Species Name* column. The species can be entered in any order in this table or directly copy and paste from PME 1.
3. Species code is **unique identification code** assigned to each species. In subsequent tables we shall only use the species code or both.

Note: This species list containing species code shall be used throughout the monitoring or evaluation of plantation site. Species code cannot be changed from one form to another.

6.8.3 Tally Sheet for Quantitative Field Assessment of Plantation

The data from each sample plot shall be collected using the PME3: Tally sheet. One tally sheet should be used for each sample plot for M&E. The total number of tally sheet should be equal to the number of sample plots.

PME 3: Tally Sheet for Quantitative Field Assessment or Plot Data Collection Form

Name of Plantation:							
Plantation spacing (m)		Length		Width		Sample Plot No.	
Sample plot size		Length		Width			
Estimated number of seedlings planted (in sample plot)				Date			
Plantation Area (ha)							
Sl. No	Species Name	Species Code	Count (No.)	Avg. Height (m)	Avg. Collar diameter (cm)	Avg. dbh (cm)	No. of seedlings with height ≥ 2 m
Number of live seedlings				No. of seedlings with height ≥ 2m			
Number of dead seedlings				No. of seedlings with height < 2m			
Survival percent				% of seedlings established			
Mean Height				Mean dbh diameter (cm)			
Average Collar Diameter				Average density (Live seedling/plot area)			

Guidance for Completing the Form PME3.

1. Type the name of the plantation site in relevant cell.
2. Enter the plantation spacing in the relevant cells. If the plantation spacing is 2.5 m x 2.5 m, then enter accordingly in the dedicated cell.
3. Determine the sampling plot size. Depending on sample plot size/dimension of 15 m x 15 m square plot or 20 m x 15 m rectangular plot, plot dimensions in may be entered.
4. Estimate the number of seedlings planted in each sample plot. Number of seedlings in each sample plot can be determined as follows:

$$\text{Estimated No. of seedlings in plot} = \frac{\text{Plot Area}}{\text{Grid Area}}$$

For eg.,

- a) Sample plot area = 15 m x 15 m = 225 m²
- b) Area occupied by plantation spacing/ grid area = 2.5 m x 2.5 m = 6.25 m²
- c) Number of seedlings in plot

$$\begin{aligned} \text{Estimated No. of seedlings in plot} &= \frac{225}{6.25} \\ &= 36 \end{aligned}$$

Enter this estimated number of seedlings in the relevant cell.

5. Enter the date of monitoring in relevant cell.
6. Enter the plantation area in hectares.
7. Enter the sample plot number, say, *Plot1, Plot2, Plot3, Plot_n*, in relevant cells or columns in the table (***Sample Plot No.***).
8. Copy the name of species planted in the plantation and paste here or manually enter them in ***Species Name*** column. Enter the species code in the ***Species Code*** column, corresponding to the species name as per the species list table (PME 2).
9. Count the number of **live** seedlings of species, e.g., *Pinus wallichiana* and enter it in the relevant column (***Count***). Measure the height of all live seedlings of this species using measuring tape, average it and enter in the ***Average Height*** column in meters. Then measure the collar diameter of all live seedlings of this species, average it and enter in ***Average Collar diameter*** column, measure DBH of all live seedlings of this species, which are 2 m or more in height, average it and enter in the ***Average DBH*** column and finally count the trees with height more than 2 m and enter in the column ***Number of seedlings with height >= 2m.***
10. Repeat Step 9 above for all the species recorded in the sample plot.

Each plot should have one tally sheet each. For the total number of tally sheet refer Annexure II, where sampling intensity plantation M&E is described by plantation area.

6.8.4 Plot Summary Form

PME 4 consists of six forms of summary of a) live seedlings, b) dead seedling, c) collar diameter, d) dbh, e) height and f) established seedlings. The information in these should be compiled from PME3 except for PME 4 (b) Summary of dead seedlings count by species), which shall be determined using the procedure described below.

PME 4: Plot Summary Form

a) Summary of live seedlings count by species												
Species code	Species Name	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Total
1												
2												
3												
b) Summary of dead seedlings count by species												
Species code	Species Name	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Total
1												
2												
3												
c) Summary of collar diameter of live seedlings by species												
Species code	Species Name	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Average
1												
2												
3												
d) Summary of average dbh of live seedlings by species												
Species code	Species Name	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Average
1												
2												
3												
e) Summary of average height of live seedlings by species												
Species code	Species Name	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Average
1												
2												
3												
f) Summary of established seedlings (count of seedlings >= 2 m height)												
Species code	Species Name	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Average
1	0											
2	0											
3	0											
<p>Note: Number of sample plot in this form is only 10. However, based on the area of the plantation site, the number of sample plots may be lower or higher than 10 sample plots. Actual no. of plots shall be used instead of 10, wherever applicable.</p>												

Guidance for Completing Form PME 4

1. From the tally sheet, transfer the data into summary table a, b, c, d, e and f.
2. Summary table a, c, d, e and f is directly copied and pasted from the tally sheet.
3. Since the number of dead seedlings are not counted, it may be difficult to determine the number of dead seedlings by species. In this case, use the proportion of live seedlings in each plot to determine the number of dead seedlings by species in the same plot. The proportion shall be calculated as follows.

No. of dead seedling species (X) = Proportion of live seedlings of species (A) x Total number of dead seedlings in a sample plot

Total Number of Dead Seedlings in Sample Plot = Total estimated number of seedlings in sample plot – Total number of live seedlings counted

Proportion of live seedlings by species = No of live seedling (X) / Total number of live seedlings recorded in sample plot

Example: If sample plot size is 15 m x 15 m and Plantation spacing is 2.5 m x 2.5 m, the total seedling planted shall be 36 [(15 m x 15 m) / (2.5 m x 2.5 m)]. Assuming, we have recorded three species A, B and C with live seedling count of 7, 12 and 11 respectively in the sample plot. Then, the total live seedling is 30 (7+12+11) and total dead seedling is 6 (36-30). Accordingly,

Proportion of Live Seedlings of Each Species

$$\text{Proportion of live seedling of species A} = \frac{7}{30} = 0.23$$

$$\text{Proportion of live seedling of species B} = \frac{12}{30} = 0.40$$

$$\text{Proportion of live seedlings of species C} = \frac{11}{30} = 0.37$$

Number of Dead Seedlings by Species

$$\text{No. of dead seedling of species A} = 0.23 \times 6 = 1.38 = 1$$

$$\text{No. of dead seedling of species B} = 0.40 \times 6 = 2.40 = 2$$

$$\text{No. of dead seedling of species C} = 0.37 \times 6 = 2.22 = 2$$

The sum number of dead seedlings when rounded to the nearest whole number by species is 5 against the total estimated number of 6. Under such circumstances, species with highest proportion shall be rounded upward (although against the principles of mathematics). Thus, the number of dead seedlings of species B shall be 3, while species A and C shall be 1 and 2 respectively. This on the basis of assumption that the species with higher frequency is more likely to have more causality in absolute terms than others.

6.8.5 Summary Result of Quantitative Assessment

Compile the results from the PME4 in summary result of quantitative assessment in PME5.

PME 5: Summary Result of Quantitative Assessment

Species code	Species Name	Survival percent	Average collar diameter	Average dbh	Average height	Established seedling (%)	Unestablished seedling (%)
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
	Overall average						

Guidance to Complete Summary Results

1. Type the name of the species in the species name column following species code.
2. Estimate the survival percent of each species.

$$\text{Survival percent of species X} = \frac{\text{No. of live seedlings of species X}}{\text{Total number of species X planted}} \times 100$$

Where the total number of species X planted is sum of live and dead seedling of species X from summary plot table a and b.

Note: Estimate survival percent for all species. Note that some species shall not be recorded in all sample plots.

3. Enter the average collar diameter by species from summary plot table c.
4. Enter the average dbh by species from summary plot table d.
5. Enter the average height by species from summary plot table e.
6. Enter the percent of established and unestablished seedlings from summary plot f and calculations thereof.
7. Estimate the overall survival percent, average collar diameter, average dbh and average height and enter in the row corresponding the row name “**Overall average**”.

6.8.6 Annual Monitoring Form

The plantation annual or regular monitoring shall be completed in PME6 using the information collected in the PME1 to PME5.

PME 6: Regular/Annual Monitoring Form

1. Name of Plantation site		Plantation area				
2. Year of Plantation		Plantation spacing				
3. Gewog Name		Total seedlings planted				
4. Dzongkhag Name		Total live seedlings				
5. Office Name		Initial seedling density				
6. Date of Monitoring (dd/mm/yyyy)		Plantation type				
		a) Afforestation <input type="checkbox"/> b) Reforestation <input type="checkbox"/> c) Enrichment plantation <input type="checkbox"/>				
7. Type of annual monitoring	1st <input type="checkbox"/>	2nd <input type="checkbox"/>	3rd <input type="checkbox"/>	4th <input type="checkbox"/>	5th <input type="checkbox"/>	
8. Plantation maintenance	Yes <input type="checkbox"/>	No <input type="checkbox"/>				
9. Cost of maintenance						
10. Estimated number of established seedlings (height >=2m)						
11. Estimated number of unestablished seedlings (height < 2m)						
PME.1. Plantation Management						
PME.1.1 Plantation journal maintained and updated	Yes <input type="checkbox"/>	No <input type="checkbox"/>				
PME.1.2 Casualty replacement	Yes <input type="checkbox"/>	No <input type="checkbox"/>				
PME.1.3 Percent of casualty refilling	90-100% <input type="checkbox"/>	80-90% <input type="checkbox"/>	70-80% <input type="checkbox"/>	60-70% <input type="checkbox"/>	<60% <input type="checkbox"/>	
PME.1.4 Quality of fencing	Intact/no damage <input type="checkbox"/>	Damaged <input type="checkbox"/>	No fencing <input type="checkbox"/>			
PME.1.5 Extent coverage of fencing	Whole area <input type="checkbox"/>	3/4 fencing <input type="checkbox"/>	1/2 fencing <input type="checkbox"/>	1/4 fencing <input type="checkbox"/>	No fencing <input type="checkbox"/>	
PME. 1.6 Number of weeding /tending operations?	Thrice a year <input type="checkbox"/>	Twice a year <input type="checkbox"/>	Once a year <input type="checkbox"/>			
PME. 1.7 Plantation signage?	Yes <input type="checkbox"/>	No <input type="checkbox"/>				
PME.2 Plantation Growth and Development						
Survival percent of plantation	Percent	Rating (1-5 scale)				
PME.2.1 Overall survival percent			Rating Criteria 1. Excellent (>90%) 2. Very good (76-90%) 3. Good (51-75) 4. Satisfactory (26-50) 5. Failure/Poor (= <25%)			
PME.2.2 Species wise survival percent						

PME.2.3 Established seedling percent (ht >=2m)		%	<i>Summary result from PME5</i>
PME.2.4 Unestablished seedling percent (ht <2m)		%	<i>Summary result from PME5</i>
PME.2.5 Average collar diameter of all species		cm	<i>Summary result from PME5</i>
PME.2.6 Average dbh of all species		cm	<i>Summary result from PME5</i>
PME.3 Disturbance Indicator			
<i>PME 3.1 Evidence of anthropogenic pressure?</i>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<i>Photographic evidence.</i>
PME.3.1.1 Evidence of grazing pressure	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
PME.3.1.2 Evidence of illicit felling/felling	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
PME.3.1.3 Evidence of waste dumping	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
PME.3.1.4 Evidence of developmental activities	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
PME.3.1.5 Evidence of fencing damage	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
<i>PME.3.2 Evidence of natural disturbance?</i>			<i>These indicators can be both man-made or natural for the reporting purpose, it is recoded as natural disturbance</i>
PME.3.2.1 Evidence of forest fire/threats?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
PME.3.2.2 Evidence of pest/diseases?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
PME.3.2.3 Evidence of invasive plant species?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Comments/Observation			
Monitoring team members:			
1			
2			
3			
4			

Guidance to complete Regular/ Annual Monitoring Form

1. Enter the plantation site, year of plantation, Gewog name, Dzongkhag name, date of monitoring, area of plantation, plantation spacing, total seedlings planted in the relevant cells.
2. Estimate the number of live seedlings based on the Plot Summary Form PME4 as follows.

No. of live seedlings

$$= \frac{\text{Avg.No. live seedling in sample plots}}{\text{No.of seedlings planted in one sample plot}} \times \text{Total seedlings planted}$$

For example, from PME 4, average live seedlings are 30 and total seedlings planted in one sample plot is 36 and total seedling planted in plantation area is 1600 (PME 1), estimated number of live seedlings in plantation is

$$= \frac{30}{36} \times 1600 = 1333$$

Enter the estimated number of live seedlings in the relevant cell

3. Estimate the initial seedling density as described below and enter in the relevant column.

Initial seedling density =

$$\frac{\text{No. of seedlings planted}}{\text{Plantation area}}$$

For example, if 4000 seedlings were planted in 2 hectares, then initial seedling density is

$$\frac{4000}{2} = 2000 \text{ seedlings per ha}$$

4. Select the plantation type from the list and tick either Afforestation, reforestation or enrichment plantation.
5. Indicate type of monitoring and tick relevant option.
6. Verify whether or not plantation maintenance is executed in the year of monitoring and indicate accordingly.
7. Estimate the number of established seedling and enter accordingly

$$\frac{\text{sum of no. of seedlings with ht } \geq 2 \text{ in all sample plots}}{\text{Sum of no. of live seedlings in all sample plot}} \times \text{No. of live seedlings}$$

For example, there are 30 seedlings with height ≥ 2 m in 5 sample plots and 100 total live seedlings in 5 sample plots. The estimated number of live seedlings in plantation is 250 as in step 2 above, then number of established seedings is:

$$= \frac{30}{100} \times 250 = 75$$

8. Estimate the number of unestablished seedling and enter accordingly
Estimated live seedlings – established seedlings
Accordingly, the unestablished seedling is

$$250 - 75 = 175$$

9. Review the plantation management based on the plantation journal and the field observation.
- a) Verify the update on the plantation journal. Should contain all information up to latest maintenance works and field visit.
 - b) Verify from the plantation journal whether the casualty replacement is conducted. If yes, carry out the field assessment. Percent of casualty replacement may be estimated as :

$$\frac{\text{No. of seedlings replanted}}{\text{Total of dead seedling}} \times 100$$

The number of seedlings planted for casualty replacement should be provided in the plantation journal., lets say 100 and if number of dead seedlings is 300, then the percent of casualty replacement is:

$$\frac{100}{300} \times 100 = 33.33\%$$

- c) Observe the quality and quantity of fencing and accordingly qualify the quality of fencing and coverage of the fencing.
 - d) From the plantation journal record the number of tending operations carried out.
10. Plantation growth and development information may be extracted from PME 5 or relevant forms.
- a) From PME5 copy, type the overall survival and species wise survival percent in the percent column and rating of 1-5 from the rating column. Rating is based on the survival percent, wherein survival percent of >90% is rated as Excellent (1), 76-90% is Very Good (2), 51-75% is Good (3), 26-50% is satisfactory (4) and 25 and below is failure/poor (5).
 - b) Estimate the percent of established and unestablished seedlings using information estimated in step 7 and 8 above.
 - c) Average collar diameter and dbh be copied from PME5.
11. Observe the evidence of any disturbance in the plantation site excluding site clearing and preparation for plantation and record presence absence information.

6.8.7 Plantation Evaluation

The plantation evaluation shall be conducted using the evaluation from PME 7 using the information collected in the PME1 to PME 5 and annual monitoring report and form (PME6).

PME 7: Plantation Evaluation

1. Name of Plantation Site			Plantation Area (ha)			
2. Year and date of Plantation (dd/mm/yyyy)			Plantation Spacing (L x W)			
3. Gewog Name			Total Seedlings Planted			Nos.
4. Dzongkhag Name			Total Live Seedlings			Nos.
5. Office Name			Initial Seedling Density			no/ha
6. Date of Evaluation (dd/mm/yyyy)			Plantation Type			
7. Agency Name *			* it means the name of agency carrying out plantation			
8. Evaluation Phase	<i>Mid-Term Evaluation</i> <input type="checkbox"/>	<i>Final Evaluation</i> <input type="checkbox"/>		<i>Long-Term Evaluation</i> <input type="checkbox"/>		
9. Administration, Governance, and Management						
9.1 Plantation Journal up to date	Yes <input type="checkbox"/>	No <input type="checkbox"/>				
9.2 No. of annual monitoring conducted	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
9.3 No. of evaluation conducted	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
9.4 Plantation map developed	Yes <input type="checkbox"/>	No <input type="checkbox"/>				
9.5 Plantation maintenance conducted	Yes <input type="checkbox"/>	No <input type="checkbox"/>				
9.6 Site selection	Good <input type="checkbox"/>	Poor <input type="checkbox"/>				
8.7 Species selection	Good <input type="checkbox"/>	Poor <input type="checkbox"/>				
10. Plantation Growth and Development						
10.1 Percentage of seedlings established						
10.2 Percentage of seedlings unestablished						
9.3 Percentage relative composition of native species						
Survival Percent	Percent	Unit	Rating (in scale of 1-5)			

9.4 Overall survival percent		%		<u>Rating Criteria</u> 1. Excellent (>90%) 2. Very good (76-90%) 3. Good (51-75) 4. Satisfactory (26-50) 5. Failure/Poor (= <25%)		
9.4.2 Species wise survival percent		%				
		%				
		%				
		%				
		%				
		%				
		%				
		%				
		%				
		%				
9.5 Average collar diameter of all species (cm)						
9.6 Average species wise collar diameter (cm)						
9.6.1		List the species from 9.7.1 to 9.7.10 as per the sequence in the species list form (PME 2)				
9.6.2						
9.6.3						
9.6.4						
9.6.5						
9.6.6						
9.6.7						
9.6.8						
9.6.9						
9.6.10						
9.7 Average dbh of seedlings						
9.8 Average dbh of seedlings by species						
9.8.1		List the species from 9.9.1 to 9.9.10 as per the sequence in the species list form (PME 2)				
9.8.2						
9.8.3						

9.8.4			
9.8.5			
9.8.6			
9.8.7			
9.8.8			
9.8.9			
9.8.9			
9.8.10			
9.8.11 Seedling density			
10. Environmental Impacts	Yes	No	
10.1 Improved Forest cover			
10.2 Evidence of wild fauna improved			
10.3 Barren/degraded area restored			
10.4 Provided protection to water resources			
10.5 Enhanced growth of invasive species			
10.6 Waste dumping			
11. Social Impacts	Yes	No	
11.1 Reduced existing grazing lands			
11.2 Enhanced availability of commonly collected NFWPs			
11.3 Improved aesthetics value			
11.4 Enhanced access to forest resources			
12. Disturbance			
12.1 Grazing pressure			
12.2 Illicit felling			
12.3 Damage by pest and diseases			
12.4 Forest fires			

Comments/Observation						
Evaluation team members:						
Name	Designation	Office	Contact No.	Email address		

Guidance to Complete Evaluation Form

1. Enter the plantation site, year of plantation, gewog name, dzongkhag name, date of evaluation, area of plantation, plantation spacing, total seedlings planted in the relevant cells.
2. Estimate the number of live seedlings based on the Plot Summary Form PME4 as follows:

No. of live seedlings

$$= \frac{\text{Avg. No. live seedling in sample plots}}{\text{No. of seedlings planted in one sample plot}} \times \text{Total seedlings planted}$$

For example, from PME 4, average live seedlings are 30 and total seedlings planted in one sample plot is 36 and total seedling planted in plantation area is 1600 (PME 1), then the *estimated number of live seedlings* in plantation is

$$= \frac{30}{36} \times 1600 = 1333$$

Enter the estimated number of live seedlings in the relevant cell.

3. Estimate the initial seedling density as described below and enter in the relevant column.

Initial seedling density =

$$\frac{\text{No. of seedlings planted}}{\text{Plantation area}}$$

For example, if 4000 seedlings were planted in 2 hectares, then initial seedling density is

$$\frac{4000}{2} = 2000 \text{ seedlings per ha}$$

4. Select the plantation type from the list and tick either Afforestation, reforestation, or enrichment plantation.
5. Indicate the type of evaluation (mid-term, final or long-term evaluation).
6. Indicate type of monitoring and tick relevant option or no. of monitoring conducted from the plantation up until evaluation date.
7. Verify whether plantation maintenance is executed in the year of monitoring and indicate accordingly.
8. Verify whether plantation is mapped, plantation maintenance, site selection and species selection.
9. Estimate the percentage of established seedling and enter accordingly.

$$\frac{\text{sum of no. of seedlings with ht } \geq 2 \text{ in all sample plots}}{\text{Sum of no. of live seedlings in all sample plot}} \times 100$$

For example, there are 30 seedlings with height \geq 2m in 5 sample plots and 100 total live seedling in 5 sample plots. The percentage of established seedling is.

$$= \frac{30}{100} \times 100 = 30\%$$

10. Estimate the percent of unestablished seedling and enter accordingly.

$$100 - \textit{Percentage of established seedling}$$

From the above example, unestablished seedling is

$$100 - 30 = 70\%$$

11. Estimate the percentage composition of native species based on information compiled on PME1

$$= \frac{\textit{No. of native species planted}}{\textit{Total species planted}} \times \frac{\textit{Sum of no. of seedlings of native species planted}}{\textit{Total number of seedling planted}} \times 100$$

For example, in a particular plantation site, 6 different species were planted such 4 species were native to locality and 2 are exotic. A total of 1600 seedling were planted in the plantation site, where 600 seedlings comprise of 4 native species and 1000 seedlings were from two exotic species. Then the relative percent composition of native is

$$= \frac{4}{6} \times \frac{600}{1600} \times 100 = 25\%$$

12. Plantation growth and development information may be extracted from PME 5 or relevant forms.

- a. From PME5 copy and type overall survival and species wise survival percent in the percent column and rating of 1-5 from the rating column. Rating is based on the survival percent, wherein survival percent of >90% is rated as Excellent (1), 76-90% is Very Good (2), 51-75% is Good (3), 26-50% is satisfactory (4) and 25 and below is failure/poor (5).
- b. Estimate the percent of established and unestablished seedlings using information estimated in step 7 and 8 above.
- c. Average collar diameter and dbh to be copied from PME5.
- d. Average collar diameter and dbh by species to be copied from PME5 respective species.

13. Observe the evidence of environmental and social impacts resulting from the plantation.

14. Observe the evidence of any disturbance in the plantation site excluding site clearing and preparation for plantation and record presence absence information.

6.8.8 Plantation Evaluation Report Format

Upon completion of the plantation evaluation, the evaluation team shall prepare the report in standard format PME 8.

PME 8: Plantation Monitoring and Evaluation Report Format

Section of Report	Content
1. Background	Introduction, objectives, M&E date
2. Findings	
2.1. Plantation Creation	Brief write-up based on reporting format for plantation creation from Table 6.5 as shown below.
2.2. Plantation Maintenance	Brief write-up based on reporting format for plantation maintenance from Table 6.6 as shown below.
2.3. Plantation Survivability Assessment	Brief write-up based on reporting format for plantation evaluation from the Table 6.7 as shown below.
2.4 Plantation growth and development	
2.4.1 Height of the plantation	
2.4.2 Collar Diameter of plantation	
2.4.3 DBH of plantation	
3. Problems and constraints	Problems and constraints observed and received during the process of implementation.
4. Lessons learnt and feedback.	Lessons learnt and feedback from the implementation.
5. Recommendations	
6. Way forward suggestions and recommendations	
7. Annexure	1. PME 1 to PME6/7 as may be relevant 2. Additional photographs

Table 6.5: Reporting for Plantation Creation

Reporting for Plantation Creation														
Division/ PA	Dzongkhag	Gewog	Name of Plantation	Location Name	Range/PA Name	Type of Plantation	Area (ha.)	Creation Cost (Nu.)	Fund Source	Creation Year (DMY)	Implementer	Remarks	Point Reference	
													Northing	Easting

Table 6.6: Reporting for Plantation Maintenance

Reporting for Plantation Maintenance													
Division/ PA	Dzongkhag	Gewog	Name of Plantation	Location Name	Range/PA Name	Type of Plantation	Area (ha.)	Maintenance Cost (Nu.)	Fund Source	Maintenance Year (DMY)	Implementer	Remarks	

Table 6.7: Reporting for Plantation Evaluation

Reporting for Plantation Evaluation												
Division/PA	Dzongkhag	Gewog	Location Name	Range/PA Name	Type of Plantation	Area (ha.)	Creation Year (DMY)	Assessment Year (DMY)	Survival Percent	Outcome	Impact	Remarks

6.9 Annexures

6.9.1 Annexure 1: Plantation Monitoring and Evaluation Forms

PME 1: Plantation Information

1. Name of Plantation:					
2. Objectives of plantation:					
	<input type="checkbox"/>	Protect, rehabilitate, and manage critical and degraded watersheds for sustained flow of good quality water			
	<input type="checkbox"/>	Improve aesthetic values through development and beautification of landscapes;			
	<input type="checkbox"/>	Protect and promote native and local species;			
	<input type="checkbox"/>	Climate change mitigation			
	<input type="checkbox"/>	Others, specify			
3. General Information					
Date of Plantation (dd/mm/yyyy)				Financial Year:	
Area (ha):		Altitude:		Aspect:	
Slope percent:		Soil types:		Fund source:	
Dzongkhag:		Division/PA:		Expenditure (Nu.):	
Gewog:		Range name:		Location Name	
Agency Name *				* Agency name means name of Agency who carried out plantation	
Plantation spacing (m x m)		Length		Width	
Plantation method		Northing (Y)		Easting (X)	
2. Direct seeding- Thalis <input type="checkbox"/>		2. Direct seeding- Line/terraces <input type="checkbox"/>			
3. Direct seeding- Dibbling <input type="checkbox"/>		4. Direct seeding- seed broadcasting <input type="checkbox"/>			
5. Seedling planting- Entire planting <input type="checkbox"/>		6. Seedling planting- Ploy pot seedling <input type="checkbox"/>			
7. Seedling planting- Earth ball <input type="checkbox"/>		8. Seedling planting- Stump planting <input type="checkbox"/>			
9. Seedling planting- Rhizomes <input type="checkbox"/>					
Is plantation journal available?		Yes <input type="checkbox"/>	No <input type="checkbox"/>		
Is plantation journal updated?		Yes <input type="checkbox"/>	No <input type="checkbox"/>		
Is plantation Mapped?		Yes <input type="checkbox"/>	No <input type="checkbox"/>		
If plantation is mapped		1. Drone Mapping <input type="checkbox"/>		2. GPS Mapping <input type="checkbox"/>	
3. Both <input type="checkbox"/>		4. Others <input type="checkbox"/> Specify:			
If plantation is not mapped, why?		1.			
		2.			
		3.			
4. Plantation Type (Tick only one)					
Afforestation <input type="checkbox"/>		Plantation subcategory			
		Normal <input type="checkbox"/>	Rehabilitation <input type="checkbox"/>	Industrial <input type="checkbox"/>	Institutional <input type="checkbox"/>
				Community <input type="checkbox"/>	

	Private <input type="checkbox"/>	Urban/avenue <input type="checkbox"/>	Compensatory <input type="checkbox"/>	Watershed <input type="checkbox"/>	Agroforestry <input type="checkbox"/>
	Ceremonial* <input type="checkbox"/>	Pay and Plant <input type="checkbox"/>	Commemorative* <input type="checkbox"/>	Avenue <input type="checkbox"/>	
Reforestation					
<input type="checkbox"/>	Plantation subcategory				
	Industrial <input type="checkbox"/>	Institutional <input type="checkbox"/>	Community <input type="checkbox"/>	Private <input type="checkbox"/>	Urban/avenue <input type="checkbox"/>
	Compensatory <input type="checkbox"/>	Watershed <input type="checkbox"/>	Agroforestry <input type="checkbox"/>	Ceremonial* <input type="checkbox"/>	Pay and Plant <input type="checkbox"/>
Enrichment Plantation					
<input type="checkbox"/>	Plantation subcategory				
	Industrial <input type="checkbox"/>	Institutional <input type="checkbox"/>	Community <input type="checkbox"/>	Private <input type="checkbox"/>	Urban/avenue <input type="checkbox"/>
	Compensatory <input type="checkbox"/>	Watershed <input type="checkbox"/>	Agroforestry <input type="checkbox"/>	Ceremonial* <input type="checkbox"/>	Pay and Plant <input type="checkbox"/>
* Remarks (Short description)					
5. Forest types in the vicinity of plantation		Subtropical Forest <input type="checkbox"/>		Warm Broadleaved Forest <input type="checkbox"/>	
		Evergreen Oak Forest <input type="checkbox"/>		Cool Broadleaved Forest <input type="checkbox"/>	
		Blue Pine Forest <input type="checkbox"/>		Spruce Forest <input type="checkbox"/>	
		Hemlock Forest <input type="checkbox"/>		Fir Forest <input type="checkbox"/>	
		Juniper Rhododendron Forest <input type="checkbox"/>			
6. Species planted	Name	Number		Name	Number
	1.			6	
	2.			7	
	3.			8	
	4.			9	
	5.			10	
Brief description of the plantation site					
Remarks on new plantation					

PME 2: Species List

Species Code	Species Name	Species Code
1		1
2		2
3		3
4		4
5		5
6		6
7		7
8		8
9		9
10		10
11		11
12		12
13		13
14		14
15		15
16		16
17		17
18		18
19		19
20		20

PME 3: Tally Sheet for Quantitative Field Assessment of Plantation

Name of Plantation:							
Plantation spacing (m)	Length		Width			Sample Plot No.	
Sample plot size	Length		Width				
Estimated number of seedlings planted (in sample plot)				Date			
Plantation Area (ha)							
Sl. No	Species Name	Species Code	Count (No.)	Avg. Height (m)	Avg. Collar diameter (cm)	Avg. dbh (cm)	No. of seedlings with height >=2 m
Number of live seedlings				No. of seedlings with height >=2m			
Number of dead seedlings				No. of seedlings with height < 2m			
Survival percent				% of seedlings established			
Mean Height				Mean dbh diameter (cm)			
Average Collar Diameter				Average density (Live seedling)			

PME 4: Plot Summary Form

a) Summary of Live Seedlings Count by Species												
Species code	Species Name	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Total
1												
2												
3												
a) Summary of dead seedlings count by species												
Species code	Species Name	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Total
1												
2												
3												
b) Summary of collar diameter of live seedlings by species												
Species code	Species Name	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Average
1												
2												

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3													
c) Summary of average DBH of live seedlings by species													
Species code	Species Name	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Average	
1													
2													
3													
d) Summary of average height of live seedlings by species													
Species code	Species Name	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Average	
1													
2													
3													
f) Summary of established seedlings (count of seedlings \geq 2 m height)													
Species code	Species Name	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Average	
1	0												
2	0												
3	0												
<p>Note: Number of sample plot in this form is only 10. However, based on the area of the plantation site, the number of sample plots may be lower or higher than 10 sample plots. Actual no. of plots shall be used instead of 10, wherever applicable.</p>													

PME 5: Summary Result of Quantitative Assessment

Species code	Species Name	Survival percent	Average collar diameter	Average dbh	Average height	Established seedling (%)	Unestablished seedling (%)
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
	Overall average						

PME 6: Regular/Annual Monitoring Form

PME 6: Regular /Annual Monitoring Form					
1. Name of Plantation Site		Plantation Area			
2. Year of Plantation		Plantation spacing			
3. Gewog Name		Total seedlings planted			
4. Dzongkhag Name		Total live seedlings			
5. Office Name		Initial seedling density			
6. Date of Monitoring (dd/mm/yyyy)		Plantation type			
		d) Afforestation e) Reforestation f) Enrichment plantation			
7. Type of Annual Monitoring	1 st <input type="checkbox"/>	2 nd <input type="checkbox"/>	3 rd <input type="checkbox"/>	4 th <input type="checkbox"/>	5 th <input type="checkbox"/>
8. Plantation Maintenance	Yes <input type="checkbox"/>	No <input type="checkbox"/>			
9. Cost of Maintenance	Funding source				
10. Estimated number of established seedlings (height >=2m)					
11. Estimated number of unestablished seedlings (height < 2m)					
PME.1. Plantation Management					
PME.1.1 Plantation journal maintained and updated	Yes	No			
PME.1.2 casualty replacement	Yes	No			
PME.1.3 Percent of casualty refilling	90-100%	80-90%	70-80%	60-70%	<60%
PME.1.4 Quality of fencing	Intact/no damage (2)	Damaged (1)	No fencing (0)		
PME.1.5 Extent coverage of fencing	Whole area (5)	3/4 fencing (4)	1/2 fencing (3)	1/4 fencing (2)	No fencing (1)
PME. 1.6 Number of weeding /tending operations?	Thrice a year (3)	Twice a year (2)	Once a year (1)		
PME. 1.7 Plantation signage?	Yes	No			
PME.2 Plantation, Growth and Development					
Survival percent of plantation	Percent	Rating (1-5 scale)			
PME.2.1 Overall survival percent			Rating Criteria 6. Excellent (>90%) 7. Very good (76-90%) 8. Good (51-75)		
PME.2.2 Species wise survival percent					

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PME.2.2.1			9. Satisfactory (26-50) 10. Failure/Poor (=<25%)
PME.2.2.2			
PME.2.2.3			
PME.2.2.4			
PME.2.2.5			
PME.2.2.6			
PME.2.2.7			
PME.2.2.8			
PME.2.2.9			
PME.2.2.10			
PME.2.3 Established seedling percent (ht >=2m)		%	Summary result from PME5
PME.2.4 Unestablished seedling percent (ht <2m)		%	Summary result from PME5
PME.2.5 Average collar diameter of all species		cm	Summary result from PME5
PME.2.6 Average dbh of all species		cm	Summary result from PME5
PME.3 Disturbance Indicator			
PME 3.1 Evidence of anthropogenic pressure?	Yes	No	<i>Photographic evidence</i>
PME.3.1.1 Evidence of grazing pressure	Yes	No	
PME.3.1.2 Evidence of illicit felling/felling	Yes	No	
PME.3.1.3 Evidence of waste dumping	Yes	No	
PME.3.1.4 Evidence of developmental activities	Yes	No	
PME.3.1.5 Evidence of fencing damage	Yes	No	
PME.3.2 Evidence of natural disturbance			These indicators can be both man-made or natural. For the reporting purpose, it is recoded as natural disturbance
PME.3.2.1 Evidence of forest fire/ threats?	Yes	No	
PME.3.2.2 Evidence of pest/diseases?	Yes	No	
PME.3.2.3 Evidence of invasive plant species?	Yes	No	
Comments/Observation			
Monitoring team members:			
1			
2			
3			

PME 7: Plantation Evaluation

1. Name of Plantation Site			Plantation Area	ha		
2. Year and date of Plantation (dd/mm/yyyy)			Plantation Spacing (L x W)			
3. Gewog Name			Total seedlings planted		Nos.	
4. Dzongkhag Name			Total live seedlings		Nos.	
5. Office Name			Initial seedling density		No/ha	
6. Date of Evaluation (dd/mm/yyyy)			Plantation type			
7. Agency Name *			* It means the name of agency carrying out plantation			
8. Evaluation Phase	<i>Mid-term Evaluation</i> <input type="checkbox"/>	<i>Final Evaluation</i> <input type="checkbox"/>	<i>Long-term Evaluation</i> <input type="checkbox"/>			
9. Administration, Governance, and Management						
9.1 Plantation Journal up to date	Yes	No				
9.2 No. of annual monitoring conducted	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
9.3 No. of evaluation conducted	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
9.4 Plantation map developed	Yes <input type="checkbox"/>	No <input type="checkbox"/>				
9.5 Plantation maintenance conducted	Yes <input type="checkbox"/>	No <input type="checkbox"/>				
9.6 Site selection	Good <input type="checkbox"/>	Poor <input type="checkbox"/>				
8.7 Species selection	Good <input type="checkbox"/>	Poor <input type="checkbox"/>				
10. Plantation Growth and Development						
10.1 Percentage of seedlings established						
10.2 Percentage of seedlings unestablished						
9.3 Percentage relative composition of native species						
Survival Percent	Percent	Unit	Rating (in scale of 1-5)			
9.4 Overall survival percent		%		<u>Rating Criteria</u>		
9.4.2 Species wise survival percent		%		6. Excellent (>90%)		

9.4.1		%		7. Very good (76-90%) 8. Good (51-75) 9. Satisfactory (26-50) 10. Failure/Poor (= <25%)		
9.4.2		%				
9.4.3		%				
9.4.4		%				
9.4.5		%				
9.4.6		%				
9.4.7		%				
9.4.8		%				
9.4.9		%				
9.4.10		%				
9.5 Average collar diameter of all species (cm)						
9.6 Average species wise collar diameter (cm)						
9.6.1		List the species from 9.7.1 to 9.7.10 as per the sequence in the species list form (PME 2)				
9.6.2						
9.6.3						
9.6.4						
9.6.5						
9.6.6						
9.6.7						
9.6.8						
9.6.9						
9.6.10						
9.7 Average dbh of seedlings						
9.8 Average dbh of seedlings by species						
9.8.1		List the species from 9.9.1 to 9.9.10 as per the sequence in the species list form (PME 2)				
9.8.2						

9.8.3					
9.8.4					
9.8.5					
9.8.6					
9.8.7					
9.8.8					
9.8.9					
9.8.9					
9.8.10					
9.8.11 Seedling density					
10. Environmental Impacts	Yes	No			
10.1 Improved Forest cover					
10.2 Evidence of wild fauna improved					
10.3 Barren/degraded area restored					
10.4 Provided protection to water resources					
10.5 Enhanced growth of invasive species					
10.6 Waste dumping					
11. Social Impacts	Yes	No			
11.1 Reduced existing grazing lands					
11.2 Enhanced availability of commonly collected NFWPs					
11.3 Improved aesthetics value					
11.4 Enhanced access to forest resources					
12. Disturbance					
12.1 Grazing pressure					
12.2 Illicit felling					

12.3 Damage by pest and diseases					
12.4 Forest fires					
Comments/Observation					
Evaluation team members:					
Name	Designation	Office	Contact No.	Email address	

6.9.2 Annexure 2: Guidance for Completing Electronic Forms if the Monitoring Team Prefers to Use

PME 1: Complete the form as per the description in annexure. Directions to complete the form are given as notes adjacent to the respective cells in the form.

- Type manually in the cells highlighted in Light Pink as appropriate.
- Select from the drop-down menu for the cells highlighted Light Green as appropriate.

PME 2: Species List: Prepare a species list. It is a copy of all species listed in the PME1, where species planted in the plantation site are listed. Species Code are simply a serial number starting from one and has no upper limit. The upper limit is determined by different types of species planted. All other forms are accompanied by PME 2: Species list. For all forms complete the species list form by copying the list of species planted as recorded in PME 1 and pasting in same order.

PME 3 to PME 7. The Species code and species names are designed to populate itself in other forms.

- Type manually names of the species planted in the cells highlighted in Light Pink as appropriate or copy and paste from the PME 1 in the same order for all forms.

PME 3: Tally Sheet for quantitative field assessment or plot data collection

The number of tally sheets should be equal to the number of sample plots for quantitative field assessment.

- Type manually in the cells highlighted in Light Pink as appropriate.
- Select from the drop-down menu for the cells highlighted Light Green as appropriate.
- Information for cells shaded in Light Blue shall populate itself.

PME 4: Plot Summary: In general, the data shall populate automatically. If is not directly populated, follow the following.

- Type manually in the cells highlighted in Light Pink as appropriate using the information collected in PME 3.
- Information for cells shaded in Light Blue shall populate itself.

If more than ten plots used in the field assessment, the plot summary may be prepared in separate sheet.

PME 5: Summary results shall be auto generated, and entry is required.

PME 6:

- Type manually in the cells highlighted in Light Pink as appropriate.
- Select from the drop-down menu for the cells highlighted Light Green as appropriate.
- Information for cells shaded in Light Blue shall populate itself.
- In order that the data linked from one cell to the other, all forms are placed in the sequence in workbooks for auto-calculation of the estimates.

PME 7:

- Type manually in the cells highlighted in Light Pink as appropriate.
- Select from the drop-down menu for the cells highlighted Light Green as appropriate.

Non-Wood Forest Products Management



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7. Monitoring and Evaluation of Non-wood Forest Products Management

7.1 Introduction

"NWFP consists of goods of biological origin other than wood derived from forests, other wooded land and trees outside the forest" (FAO, 1999). There are hundreds of Non-wood Forest Products (NWFPs) in Bhutan such as medicinal and aromatic plants, wild vegetables, mushrooms, incense, dyes, gums, fruits, essential oils, fibers, ferns, cane, and bamboo, etc. NWFP can be freely collected for local use while nominal royalty is charged for commercial use and trade.

For the overall community benefit, NWFP resource management is encouraged on community based rather than issuing individual permits to collectors, traders, or exporters. The sustainable management of NWFP in Bhutan shall be guided by the prescription of the Forest and Nature Conservation Code of Best Management Practices of Bhutan 2021 (hereinafter referred to as the "*Code*"). The *Code* also emphasize on the importance of the Monitoring and Evaluation (M&E) of the NWFP plans and on the need of the incorporation of the NWFP plans into the bigger area-based plans.

7.2 Objective of Monitoring and Evaluation

M&E is done to gather information on the performance of a group, its products & production, and provide suggestions for improvement of management in the future. The main objective of M&E of NWFP plans and programs is to:

1. Examine whether the goals/ objectives of sustainable management and marketing of NWFPs have been achieved;
2. Assess livelihood benefits derived from the harvest and sale of NWFPs;
3. Determine beneficial and hindering factors associated with the harvest, sale, and management of NWFP resources;
4. Evaluate the status or availability of wild resources and determine the need for cultivation;
5. Provide recommendations wherever possible and appropriate for better implementation of planned activities in future and for planners in preparing the next NWFP management plan; and to
6. Assess the extent of community participation in NWFP management.

7.3 Types of Monitoring and Evaluation

For the purpose of NWFP group and plans established before the *Code* in 2021, the M&E shall be conducted in two types; annual monitoring and final evaluation. The final evaluation shall be conducted in the 1st quarter of the 3rd or 5th years depending on the plan period. However, for plans established after 2021, mid-term and final evaluation shall be conducted in the 1st quarter of the 6th and 10th year respectively. The NWFP plans shall be monitored and evaluated alongside the evaluation of the main area-based plan, unless the NWFP site is independent and does not fall under any area-based plan.

7.4 Thematic areas for Monitoring and Evaluation

The NWFP Management Plan shall be assessed by grouping all activities under the 3 broad thematic indicators:

1. **Non-wood Forest Product Management:** This indicator tracks progress in the realm of resource management, harvesting procedures, and sustainability. This indicator asks questions on activities such as; were the NWFPs harvested according to guidelines, was plantation/ cultivation of NWFPs carried out, etc.
2. **Non-Wood Forest Product Marketing and Fund Utilization:** This indicator gauges the progress of the management group with proper utilization of funds accumulated through the sale of NWFPs. It highlights activities such as whether the group sold NWFPs during plan period as per by-laws and sales target, how much of the collected NWFPs have been sold, is the price received by the NWFP-MG satisfactory, etc.
3. **Group Governance:** This indicator assesses group membership dynamics and the effectiveness of the group. It asks questions such as whether general meetings have held according to by-laws, how are members participation reflected in general meetings, is there equitable sharing of benefits as per the by-laws, etc.

7.5 Performance Assessment and Rating

The Annual Monitoring Forms are compiled and tallied in the Annual Monitoring Summary Sheet for the purpose of evaluation. The annual monitoring report shall be categorized into three thematic areas; the details and description for tallying the sheet is summarized below and used for scoring different. activities and indicators in Evaluation Score Sheet. Based on the score received from the final assessment, the performance of the NWFP Management & Marketing Group can be categorized into the following.

Table 7.1: Performance Assessment and Rating

Performance Percentage	Category	Description
90-100%	Exceptional	The group has exceeded in all thematic areas; NWFP management is exemplary, funds are generated sustainably and utilized properly, members are happy and actively participating in all group activities.
75-90	Good	The group is well managed in regard to all thematic areas, however, there is still room for improvement.
60-75	Acceptable	The group's performance is satisfactory considering all thematic areas, however, there is much room for improvement.
45-60	Moderate	The group's performance is middling or average. There is a lot of room for improvement.
30-45	Poor	The group's performance is below average. Certain themes of NWFP management require immediate attention to course correct.
<30	Unacceptable	The group's performance is not up to standard. Immediate corrective action is required, or the dissolution of the group is recommended.

7.6 Annual Monitoring

Field Offices shall monitor the implementation of the NWFP management interventions annually (Nov-Dec). The monitoring shall focus on the implementation of the planned activities, and outputs, as well as a rapid resource assessment to verify the availability of remaining stock. Monitoring of NWFP Management & Marketing Groups must be done in order to track the performance of the group over the year.

The main elements that are to be monitored are whether the group has functioned according to the management plan, whether the by-laws have been followed, if harvesting guidelines were followed or not during collection, etc. It is also imperative to ascertain how the status of community participation is and what the gender breakup of the involved community members, as well as the condition of marketing aspects and if any lessons were learned over the time being monitored.

Data for monitoring shall be primarily collected as per the *Annual Monitoring Form* by interviewing the Group and Committee Members.

Step 1. Initial Information Gathering.

Designated forestry officials shall present on the NWFP Plan (participatory map, objective, membership, by-laws, financial workout, monitoring plan, etc.). The presence of group members is required during the presentation. Group members must present the following records: *minutes of meetings, Income records, collection permits, Cash book, etc.*

Step 2: Main Information Gathering.

The monitoring team will use Annual Monitoring Forms, to gather information on NWFP management and collection, group governance, resources condition, income & quantity of NWFPs harvested, fund status, group member status and community participation efforts. The Annual Monitoring Form has following parts:

- Form 1: Summary of NWFP Group
- Form 2: NWFP management and collection
- Form 3: NWFP marketing and benefit sharing
- Form 4: Group governance
- Form 5: Membership dynamics
- Form 6: Executive membership details
- Form 7: NWFP Group Activities undertaken
- Form 8: NWFP Management Fund balance
- Form 9: Issues and recommendation

Step 3: Recommendations

The monitoring team will provide recommendations to the NWFP MG for smooth implementation of the management plan and rectify deficiencies. Recommendations will be incorporated and implemented by NWFP MG; designated forestry official of Range office will ensure implementation of all recommendations.

Step 4: Report Submission to FMID on Annual Basis

Concerned CFO will submit an Annual Monitoring report to FMID in the month of January annexed with Annual Monitoring Form (excel form)

7.6.1 Annual Monitoring Form

Form 1. Summary of NWFP Management & Marketing Group

Name of Group	Village	Gewog	Dzongkhag	Range/ Beat Office	NWFPs Available	Common Name	Start of Plan Period (MM/YY)	Last Plan Renewal	End period of Plan (MM/ YY)	Remarks	Data Source
											Management Plan

Form 2. NWFP Management and Collection

Data Required	NWFP 1	NWFP 2	NWFP 3	Remarks	Data Source
Species name					Permits/ Records
Was this NWFP harvested on the prescribed time?					Permits/ Records
Were the harvesting guidelines followed or not?					Collection minutes/ records
Number of male harvesters					Collection minutes/ records
Number of female harvesters					Collection minutes/ records
Was cultivation of NWFP necessary?					Interview/ Consultation
If yes, was cultivation carried out?					Field verification
If not, why?					Interview/ Consultation
Location of cultivation area (Easting/ Northing)					Field verification
Size of cultivation area in acres					Field verification
Frequency of patrolling conducted by NWFP MG members					Minutes
Experience of groups in managing NWFPs					Interview/ Consultation
Resource abundance in the collection area					Field verification
If decreasing, list out possible reasons					Interview/ Consultation
Measures taken to address these issues					Minutes

Form 3. NFWP Marketing and Benefit Sharing

Data Required	NFWP 1	NFWP 2	NFWP 3	Remarks	Data Source
Name of species collected					Collection minutes/ records
Quantity collected					Collection minutes/ records
Have the group members sold NFWPs this year? Yes/No					Permits/ Bookkeeping
Quantity sold in raw form (fresh wet)					Collection minutes/ records
Quantity sold in raw form (after drying)					
Quantity Sold after value addition					Collection minutes/ records
Type of value addition if any					Receipts/ Interviews
Rate per unit (Specify dry/ fresh/ value added)					Receipts/ Interviews
To whom were the products sold?					Receipts/ Interviews
Price setting is done by: - Individual collector/groups/buyer/trader					Interviews
Are the sellers satisfied with the price: - Yes/No					Interviews
Who chooses the traders for the group: Committee member/general members					Interviews
Have the book and record keepings been properly maintained?					Records
If not, why?					Interviews
Funds in a savings account: Yes/No					Records
Has the group shared or utilized its fund so far: Yes/No					Records
Cash in hand					Bank statement/ records
Is there any payment made for executive members? (How much?)					Records
How much was collected as membership fees?					Records
Active loans					Records/ interviews

Any loan defaulters: Yes/No			Records/ interviews
Has the group followed the management practice set in by-laws? Yes/No			Records/ interviews
Type of sharing modes highlighted in the by-laws			Records/ interviews

Form 4. Group Governance

Data Required	Input	Remarks	Data Source
No. of general meetings held annually			Minutes of meeting (MoM)
No. of committee meetings held annually			MoM
Total participants attended meetings			MoM
No. of male attendees			MoM
No. of female attendees			MoM
Who decides on sharing of resources and benefits derived from sales of NFWPs?			MoM

Form 5. Membership Dynamics

Name of Group	Total Member Households	New Member Households	Resigned Member Households	Reasons for Resigning	Remarks	Data Source
						Records

Form 6. Executive Membership Details

Name of Member	Chairperson			Treasurer			Secretary			Data Source
	CID no.	Age	Gender	CID no.	Age	Gender	CID no.	Age	Gender	
										Records

Form 7: NWFP Group Activities Undertaken

Name of Group	No. of Activities Conducted Since Last Visit	Male Attendees	Female Attendees	Total Participants	Remarks	Source of Data
	(Trainings, meetings, plantation, harvestings, etc.)					(Minutes, lists, attendance register, evaluations etc.) Y/N

Form 8. NWFP Management Fund Balance

Name of Group	Balance: Cash in Hand / Box (Nu.)	Balance: in Bank Account	Total Amount of Active Loans / Loans Given (Nu.)	Total Capital as of 31st December	Remarks	Data Source
	A	B	C	A + B + C		
Name of Group	Type of Activity		Total Expenditure Incurred	Remarks		Data Source

Form 9. Issues and Recommendations

Name of Group	Issues/Challenges	List Possible Reasons	Recommendations

7.6.2 Annual Monitoring Report

The concerned field offices shall submit Annual Monitoring Report to FMID in the following format by January of the following year.

Introduction: Provide but not limited to a brief background on the NWFP Management & Marketing Group and the monitoring team.

Objective: Shall list the objective of the monitoring

Methodology: Explain in detail the methodology

Observations and Recommendations: Discuss all the activities under the different tables; the update or the achievement, issues and challenges (if any) and the recommendations/observations by the monitoring team. Specify name of agencies who will be implementing recommendations

Other Observations

The team may list any other observations which are not captured in the report above. These observations and recommendations shall help in improving the management of the NWFP MG. The team may also provide feedback on the Monitoring Form and comments/suggestions.

Annexure: Dully filled Annual Monitoring Forms in excel format
Other evidences

7.7 Mid-term and Final Evaluation

FMID shall carry out the Final Evaluation of the NWFP Management & Marketing Group. Here the team shall assess whether annual objectives of the group have been achieved or not, and whether the overall goals/ vision of the group through the management plan period has been achieved.

The broad areas for evaluation are Livelihood impacts, Resource base assessment, Governance impacts, Value addition of NWFPs, and Lessons learned. This evaluation should also give a broader picture of the income generated over the years. The outlook of the group members is also to be considered here; whether the group members want to continue working as a group or not and more importantly, why.

Mid-term Evaluation will be conducted in the first quarter of the sixth year, while the Final Evaluation will take place in the first quarter of the tenth year. For NWFP plans that span five years, only a Final Evaluation is needed, which should be conducted in the first quarter of the fifth year of the plan. In addition to the data collected through the Annual Monitoring Summary Sheet, the Mid-term and Final Evaluation shall incorporate the data from *Evaluation Score sheet*

Step 1: Initial Data Collection

The designated forestry officials from the field office shall present on the NWFP Plan (participatory map, objective, membership, by-laws, financial workout, monitoring plan, etc. The presence of group members is required during the presentation.

Evaluating team shall refer Annual Monitoring Forms, and Annual Monitoring reports while carrying out mid-term or final evaluation for all NWFP Groups.

Step 2: Summarizing of Information

After the information is gathered using the Annual Monitoring Forms and Annual Monitoring Reports, the Evaluating team shall summarize the findings in the Annual Monitoring Summary Sheet.

Step 3: Final Data Collection

Using information gathered in *Annual Monitoring Summary Sheets*, the evaluating team shall verify all data sources, and fill out *Evaluation Score Sheet* for the final scoring. The Evaluation Score Sheet has following parts:

Part A: Brief information

Part B: Thematic Area: Non-Wood Forest Product Management

Part C: Thematic Area: Non-Wood Forest Product Marketing and Utilization

Part D: Thematic Area: Group Governance

Part E: Achievement Score

7.7.1 Annual Monitoring Summary Sheet

7.7.1.1 Thematic Area 1: Non-wood Forest Product Management

Data Required	Year									Achievement (Total Tally)	Tally Instructions			
	1	2	3	4	5	6	7	8	9		Mid-term Evaluation (10-Yr. MP)	Final Evaluation (10-Yr. MP)	Final Evaluation (5-Yr. MP)	
1. Species name	Chirata	Daphne	NWFP 3									Fill here species wise	Fill here species wise	Fill here species wise
2. Was this NWFP harvested on the prescribed time?	1	1	1								10	<p><i>Year column should be inserted based on type of evaluation (5 columns for mid-term, 9 columns for final evaluation and 4 columns for final evaluation (5-year plan). Year column should be divided into sub columns to fill in species wise information.</i></p> <p><i>If the NWFP has been harvested on time, provide score of '1' for each NWFP. For not harvesting on time, provide score of '0'. Add score and total in the total tally column.</i></p> <p><i>To calculate achievement score, divide the total tally value by the value of potential total score. For example, for midterm evaluation, the value of potential total score for 3 nwfp for 5 years would be 15 (3*5). If the tally total shows 10, then the final calculation should be (10/15) *100 which equals 66.7%. Similarly, value potential for 3 nwfp for 9 years would be 27 considering total tally as 20. Therefore, achievement score= 9*100/27=33.3%. Same could be calculated for final evaluation of 5-year plans which would have value potential of 12. Please note that value potential will change depending on NWFP species.</i></p>		
3. Harvesting guidelines followed												<p><i>Year column should be inserted based on type of evaluation (5 column for midterm, 9 columns for final evaluation and 4 column for final evaluation (5-year plan). Year column</i></p>		

32.Active loans																					Answer Yes/ No	Answer Yes/ No	Answer Yes/ No	
33. Any loan defaulters: Yes/No																						Answer Yes/ No	Answer Yes/ No	Answer Yes/ No
34.Has the group followed the management practice set in by-laws? Yes/No																						Tally Yes/No: 5/5 for 5 years the price was satisfactory, 3/5 for 3 years the price was satisfactory, etc.	Tally Yes/No: 9/9 for 9 years the price was satisfactory, 3/9 for 3 years the price was satisfactory, etc.	Tally Yes/No: 4/4 for 4 years the price was satisfactory, 3/4 for 3 years the price was satisfactory, etc.
35.Type of sharing modes highlighted in the by-laws																						Answer from Mgmt. Plan	Answer from Mgmt. Plan	Answer from Mgmt. Plan

7.7.1.3 Thematic Area 3: Group Governance

Data Required	Year									Achievement (Total Tally)	Tally Instructions			
	1	2	3	4	5	6	7	8	9		Mid-term Evaluation (10-Yr. MP)	Final Evaluation (10-Yr. MP)	Final Evaluation (5-Yr. MP)	
36.Have the meetings held annually according to by-laws												Tally Yes/No: 5/5 for 5 years timely meetings were held, 3/5 for 3 years, etc.	Tally Yes/No: 9/9 for 9 years timely meetings were held, 3/9 for 3 years, etc.	Tally Yes/No: 4/4 for 4 years timely meetings were held, 3/4 for 3 years, etc.
37, Have the committee meetings been												Tally Yes/No: 5/5 for 5 years timely meetings were held, 3/5 for 3	Tally Yes/No: 9/9 for 9 years timely meetings were held,	Tally Yes/No: 4/4 for 4 years timely meetings were held,

held according to by-laws										years, etc.	3/9 for 3 years, etc.	3/4 for 3 years, etc.
38. Total participants attended meetings										List number attendees per meeting	List number attendees per meeting	List number attendees per meeting
39.No. of executive members attending the meetings										List number executive member	List number executive member	List number executive member
40.No. of male attendees										List number attendees per meeting	List number attendees per meeting	List number attendees per meeting
41.No. of female attendees										List number attendees per meeting	List number attendees per meeting	List number attendees per meeting
42. Who decides on sharing of resources and benefits derived from sales of NFWPs?										List answer per year	List answer per year	List answer per year
43.Changes in group membership										Answer: Increased, Decreased or Remained the same	Answer: Increased, Decreased or Remained the same	Answer: Increased, Decreased or Remained the same
44.Reasons										List reasons	List reasons	List reasons

for change in membership													
45. Has internal auditing been done according to by-laws											Yes		

Guidance to fill in the Annual Monitoring Summary Sheet

The Annual Monitoring Summary Sheet compiles data from Annual Monitoring Forms to complete the Evaluation Score Sheet. The evaluating official must first gather information into the Annual Monitoring Summary Sheet. This information is drawn from the Annual Monitoring Forms, which should be compiled annually. Depending on the evaluation type, the evaluating official should refer Annual Monitoring Reports: 5 (Mid-term Evaluation for the 10-year plan), 9 (Final Evaluation for the 10-year plan), and 4 (Final Evaluation for the 5-year plans) reports.

The Annual Monitoring Summary Sheet is organized into three thematic areas aligned with the key objectives of rural NWF Management: Non-Wood Forest Product Management, Non-Wood Forest Product Marketing and Fund Utilization, and Group Governance.

1. **Thematic Area 1: Non-Wood Forest Product Management:** This indicator monitors progress in resource management, harvesting practices, and sustainability. It includes questions and activities such as whether NWFs were harvested according to guidelines and if plantation or cultivation of NWFs occurred.
2. **Thematic Area 2: Non-Wood Forest Product Marketing and Fund Utilization:** This indicator assesses the management group's effectiveness in utilizing funds generated from NWF sales. It examines activities like whether NWFs were sold in accordance with by-laws and sales targets, the quantity of NWFs sold, and whether the prices received were satisfactory.
3. **Thematic Area 3: Group Governance:** This indicator evaluates the dynamics of group membership and overall group effectiveness. It addresses questions such as whether general meetings were held as per by-laws, how member participation was reflected in these meetings, and whether benefits were shared equitably according to the by-laws.

For each thematic area, information must be compiled according to the following components:

1. **Data Required:** This includes details on various activities from the Annual Monitoring Reports and Forms that contribute to the respective thematic areas.
2. **Year 1 to Year 9:** Data should be filled in by year. The number of columns will vary based on the type of evaluation: for a Mid-term Evaluation, add 5 columns; for a Final Evaluation of the 10-year plan, add 9 columns; and for a Final Evaluation of the 5-year plan, add 4 columns.

7.7.2 Evaluation Score Sheet

7.7.2.1 Brief Information

Name of NWFP Marketing and Management Group		
Objective of Plan		
Types of Evaluation		
Date of Evaluation		
Name of Evaluating Official	Designation	Office

7.7.2.2 Thematic Area 1: Non-wood Forest Product Management

Indicators	Activities	Achievement (Total Tally)	Score	Achievement Score	Reasons for Non-fulfillment of Target	Observation by Team	Recommendations
1.Sustainable harvesting of NWFPs practiced	1. NWFPs harvested on the timeline recommended in harvesting guidelines	Transfer score from Sl.2 of Annual Monitoring Summary Sheet (AMSS)	0% = 0				
			1-25% = 1				
			25-50% = 2				
			50-75% = 3				
	2. NWFPs harvested according to guidelines	Score from sl.3 of AMSS	75-100% = 4				
			0% = 0				
			1-25% = 1				
			25-50% = 2				
2.Resource development carried out	3. Plantation/ cultivation of NWFPs have been carried out	Score from sl.7 of AMSS	Yes=10				
			No=0				
3.Effective	4. How frequently has the	Score from sl.11 of	Every few months =				

NWFP monitoring undertaken	NWFP MG carried out patrolling	AMSS	4				
			Seasonal = 3				
			During collection = 2				
			Once in a year = 1				
	5. Abundance of NWFP resources in the area compared to previous year	Score from sl.13 of AMSS	Increased = 1				
			Remained same = 0				
			Decreased = -1				

7.7.2.3 Thematic Area 2 Non-Wood Forest Product Marketing and Fund Utilization

Indicators	Activities	Achievement Score (Total Tally)	Score	Achievement Score	Reasons for Non-fulfillment of Target	Observation by Team	Recommendations
1.Efficient commercialization of NWFPs achieved	6. Has the group sold NWFPs during the plan period as per by-laws and sales target?	Score from sl.16 of AMSS	0% = 0				
			1-25% = 1				
			25-50% = 2				
			50-75% = 3				
			75-100% = 4				
	7. How much of the collected NWFPs have been sold?	Score from sl.19 of AMSS	0% = 0				
			1-25% = 1				
			25-50% = 2				
			50-75% = 3				
			75-100% = 4				
	8. Has the group explored different marketing channels to sell their produce? (In	Score from sl.23 of AMSS	Yes = 1				
			No = 0				

	event of not getting buyers)						
	9. Was the price received by the NWFP MG satisfactory	Score from sl.24 of AMSS	Yes = 1 No = 0				
2.Proper records maintained	10. Have the Record Keeping Books been maintained	Score from sl.26 of AMSS	Well maintained = 10 Inadequately maintained = 5 No= 0				
3.Utilization of earnings ensured	11. Utilization of NWFP MG fund or plan to utilize funds in near future in place	Score from sl.28 of AMSS	Yes = 5 No = 0				

7.7.2.4 Thematic Area 3: Group Governance

Indicators	Activities	Achievement Score (Total Tally)	Score	Achievement Score	Reasons for Non-fulfillment of Target	Observation by Team	Recommendations
1.Meetings and discussions according to by-laws	12. Have the general meetings held according to by-laws	Score from sl.36 of AMSS	Yes = 2 No = 0				
	13. Have the committee meetings been held according to by-laws	Score from sl.37 of AMSS	Yes = 2 No = 0				
2.Effective participation of members confirmed	14. Member's participation in general meeting	Score from sl.38 of AMSS	0% = 0				
			1-25% = 1				
			25-50% = 2				
			50-75% = 3				
			75-100% = 4				

	15. Executive members participation in committee meeting	Score from sl.39 of AMSS	0% = 0				
			1-25% = 1				
			25-50% = 2				
			50-75% = 3				
			75-100% = 4				
3.Equitable distribution of earnings secured	16. Sharing of benefits as per the by-laws	Score from sl.42 of AMSS	Yes = 3				
			No = 0				
4.Internal auditing and verification carried out	17. Does the NWFP MG have any loan defaulters?	Score from sl.32 of AMSS	No = 3				
			Yes = 0				
	18. Conducting of annual internal audit	Score from sl.45 of AMSS	Yes = 3				
			No = 0				

7.7.2.5 Achievement Score

Thematic Area	Achieved Score	Thematic Area Weight	Remarks
1. Non-wood forest product management		40	
2. NWFP marketing and benefit sharing		30	
3. Group governance		30	
Total Score		100 %	

Guidance for filling in the Evaluation Score Sheet

Brief Information on NWFP- MG

This section should have information on NWFP MG, objective of plan, evaluation type, evaluation date, evaluation objective and details of evaluating officials.

Evaluation Scoring Sheet is organized into **Thematic Area 1, 2 and 3**: Non-Wood Forest Product Management, Non-Wood Forest Product Marketing and Fund Utilization, and Group Governance.

1. **Thematic Area 1: Non-Wood Forest Product Management:** This indicator monitors progress in resource management, harvesting practices, and sustainability. It includes questions and activities such as whether NWFPs were harvested according to guidelines and if plantation or cultivation of NWFPs occurred.
2. **Thematic Area 2: Non-Wood Forest Product Marketing and Fund Utilization:** This indicator assesses the management group's effectiveness in utilizing funds generated from NWFP sales. It examines activities like whether NWFPs were sold in accordance with by-laws and sales targets, the quantity of NWFPs sold, and whether the prices received were satisfactory.
3. **Thematic Area 3: Group Governance:** This indicator evaluates the dynamics of group membership and overall group effectiveness. It addresses questions such as whether general meetings were held as per by-laws, how member participation was reflected in these meetings, and whether benefits were shared equitably according to the by-laws.

The Evaluation Scoring Sheet is designed to score each thematic area and consists of eight heading columns, defined as follows:

1. **Indicators:** These are measurable variables that represent the direct results or outputs, providing either quantitative or qualitative information. A total of ten indicators have been identified.
2. **Activities:** Each indicator is linked to one or more activities aimed at achieving the output, and these activities are categorized under specific indicators for scoring purposes.
3. **Achievement (Tally Total):** This reflects the accumulated achievements over the years, with information compiled from the Annual Monitoring Summary Sheet.
4. **Score:** This column provides a percentage score range, enabling evaluators to select and assign scores to activities.
5. **Achievement Score:** The evaluation team allocates an achievement score by comparing the total tally of achievements against the score.
6. **Reasons for Non-fulfillment of Targets:** This section outlines the reasons that contributed to not meeting the targets.
7. **Observations by Team:** Observations related to each activity should be recorded in this column.
8. **Recommendations:** Suggestions for each activity should be noted in this column.

Thematic Area 1: Non-wood Forest Product Management;

Based on type of evaluation being conducted (4 years if MP is 5 years, 5 & 9 years for MP having plan period of 10 years), the team shall review and summarize the information of annual monitoring forms and compute it on an annual monitoring summary form. Based on achievement (Total tally) of each activity, determine the achievement score and compute in evaluation sheet. Tally instructions provided on the annual monitoring summary form shall guide the team to analyze and determine the achievement score.

For this thematic area there are three indicators and several activities and no. of activities shall differ depending on individual's management plan. For each indicator obtain an achievement (tally total) from the annual monitoring summary form and check what percent of achievement has been made and accordingly assign the score for all the activities and determine the percent achievement for all thematic areas as in given example.

Thematic area 1 (three indicators)

Indicator 1: Activity 1: Secured 4 points out of 4 and 4 being the highest point

Activity 2: Secured 3 points out of 4 and 4 being the highest point

Indicator 2: Activity 3: Score this activity if only relevant. Cultivation of NWPF was carried and secured 10 points

Indicator 3: Activity 4: Secured 1 point out to 4 and 4 being the highest point

Activity 5: Secured 0 point out of 1 and 1 is a highest point

% Achievement: sum of secured points/total points *40

$$= (4+3+10+1+0) / (23) *40 = 31.30 \%$$

Each thematic area is provided with weight and 40 (out 100%) is the score assigned to this thematic area. For score distribution refer achievement score table E.

Thematic area 2: Non-wood Forest Product Marketing and Fund Utilization

Follow the same procedure to determine the % achievement

Example: the % achievement of this thematic area is 21%

Thematic area 3: Group Governance

Follow the same process and determine the % achievement

Example: % achievement of this thematic area is 30%

Achievement Score

Finally, determine the overall % achievement by summing up % achievement of all three thematic areas.

$$\% \text{ Achievement of thematic area 1} = 31.30$$

$$\% \text{ Achievement of thematic area 2} = 21$$

$$\% \text{ Achievement of thematic area 3} = 30$$

$$\% \text{ Achievement: } 31.30 + 30 + 21 = 82.3\%$$

Check the performance assessment and rating table 7.2 to know the performance category of the NWFP group. From the above example, group has secured 82.3% in the overall achievement percent (%) and as per the performance assessment and rating it falls under "good" category and accordingly group management has to take corrective actions to resolve the issues or explore the opportunities to strengthen the performance.

7.7.3 Mid-term and Final Evaluation Reporting Format

The Evaluation team shall prepare a report in the format provided below and submit to FMID for further review and submission to the Head of the Department with recommendation and interventions required.

Introduction: Provide but not limited to a brief background on the NWFP Management & Marketing Group and the Evaluation team.

Objective: Shall list the objective of the Evaluation

Methodology: Explain in detail the methodology

Achievement score: This section shall discuss all the activities under the different indicators; the update, issues and challenges (if any) and the recommendations/ observations by the Evaluation team. Each recommendation shall specify agency responsible for action.

Other observation

The team may list any other observations which are not captured in the report above. These observations and recommendations shall help in improving the management of the NWFP MG. The team may also provide feedback on the Evaluation Score Sheet and comments/ suggestions.

Annexure: Mid-term and Final Evaluation Score sheet

: Minutes of meeting for Evaluation

7.8 Annexures

7.8.1 Annexure 1: Annual Monitoring Form for NWFP Management & Marketing Group

Form 1. Summary of NWFP Management & Marketing Group

Name of Group	Village	Gewog	Dzongkhag	Range/ Beat Office	NWFPs Available	Common Name	Start of Plan Period (MM/YY)	Last Plan Renewal	End Period of Plan (MM/ YY)	Remarks

Form 2. NWFP Management and Collection

Data Required	NWFP 1	NWFP 2	NWFP 3	Remarks
Species name				
Was this NWFP harvested on the prescribed time?				
Were the harvesting guidelines followed or not?				
Number of male harvesters				
Number of female harvesters				
Was cultivation of NWFP necessary?				
If yes, was cultivation carried out?				
If not, why?				
Location of cultivation area (Easting/ Northing)				
Size of cultivation area in acres				
Frequency of patrolling conducted by NWFP MG members				
Experience of groups in managing NWFPs				
Resource abundance in the collection area				
If decreasing, list out possible reasons				
Measures taken to address these issues				

Form 3. NWFP Marketing and Benefit Sharing

Data Required	NWFP 1	NWFP 2	NWFP 3	Remarks
Name of species collected				
Quantity collected				
Have the group members sold NWFPs this year? Yes/ No				
Quantity sold in raw form (fresh wet)				
Quantity sold in raw form (after drying)				
Quantity Sold after value addition				
Type of value addition if any				
Rate per unit (Specify dry/ fresh/ value added)				
To whom are the products sold?				
Price setting is done by: - Individual collector/groups/buyer/trader				
Are the sellers satisfied with the price: - Yes/No				
Who chooses the traders for the group: Committee member/general members				
Have the book and record keepings been properly maintained?				
If not, why?				

Funds in a savings account: Yes/No		
Has the group shared or utilized its fund so far: Yes/No		
Cash in hand		
Is there any payment made for executive members? (How much?)		
How much was collected as membership fees?		
Active loans		
Any loan defaulters: Yes/No		
Has the group followed the management practice set in by-laws? Yes/No		
Type of sharing modes highlighted in the by-laws		

Form 4. Group Governance

Data Required	Input	Remarks
No. of general meetings held annually		
No. of committee meetings held annually		
Total participants attended meetings		
No. of male attendees		
No. of female attendees		
Who decides on sharing of resources and benefits derived from sales of NFWPs?		

Form 5. Membership Dynamics

Name of Group	Total Member Households	New Member Households	Resigned Member Households	Reasons for Resigning	Remarks

Form 6. Executive Membership Details

Name of Member	Chairperson			Treasurer			Secretary		
	CID no.	Age	Gender	CID no.	Age	Gender	CID no.	Age	Gender

Form 7: NWFP Group Activities Undertaken

Name of Group	No. of Activities Conducted since Last Visit	Male Attendees	Female Attendees	Total Participants	Remarks

Form 8. NWFP Management Fund Balance

Name of Group	Balance: Cash in Hand / Box (Nu.)	Balance: In Bank Account	Total Amount of Active Loans / Loans Given (Nu.)	Total Capital as of 31st December	Remarks
	A	B	C	A + B + C	
Name of Group	Type of Activity		Total Expenditure Incurred	Remarks	

Form 9. Issues and Recommendations

Name of Group	Issues/Challenges	List Possible Reasons	Recommendations

7.8.2 Annexure 2: Annual Monitoring Summary Form for NWFP Management & Marketing Group

Thematic Area 1: Non-wood Forest Product Management

Data Required	Year									Achievement (Total Tally)	
	1	2	3	4	5	6	7	8	9		
1.Species name	Paris p.	Daph	NWFP								
	ne	3									
2.Was this NWFP harvested. on the prescribed time?	1	1	1								10
3. Harvesting guidelines followed											
4. Number of male harvesters											
5. Number of female harvesters											
6. Was cultivation of NWFP necessary?											
7. If yes, was cultivation carried out?											
8. If not, why?											
9. Location of cultivation area (Easting/ Northing)											
10.Size of cultivation area (acre)											
11. Frequency of patrolling conducted by NWFP MG members											
12. Experience of groups in managing NWFPs											
13.Resource abundance in the collection area											
14.If decreasing, list out possible reason											
15. Measure taken to address these issues											

Thematic Area 2: Non-Wood Forest Product Marketing and Fund Utilization

Data Required	Year											Achievement (Total Tally)
	1	2	3	4	5	6	7	8	9	10	11	
16. Have the group members sold NWFPs as per by-laws and sales target?	1	1	0	1	0	1	1	1	1			
17. Quantity collected												
18. Quantity sold in raw form (fresh wet)												
19. Quantity sold in raw form (after drying)												
20. Quantity Sold after value addition												
21. Type of value addition												
22. Rate per unit (Specify dry/ fresh/ value added)												
23. To whom are the products sold?												
24. Price setting is done by: - Individual collector/groups/buyer/trader												
25. Are the sellers satisfied with the price: - Yes/No												
26. Who chooses the traders for the group: Committee member/ general members												
27. Have the book and record keepings been properly maintained?												
28. Funds in a savings account: Yes/No												
29. Has the group shared or utilized its fund so far: Yes/No												
30. Is there any payment made for executive members? (How much?)												
31. How much was collected as membership fees?												

32.Active loans												
33. Any loan defaulters: Yes/No												
34.Has the group followed the management practice set in by-laws? Yes/No												
35.Type of sharing modes highlighted in the by-laws												

Thematic Area 3: Group Governance

Data Required	Year									Achievement (Total Tally)
	1	2	3	4	5	6	7	8	9	
36.Have the meetings held annually according to by-laws										
37, Have the committee meetings been held according to by-laws										
38. Total participants attended meetings										
39.No. of executive members attending the meetings										
40.No. of male attendees										
41.No. of female attendees										
42.Who decides on sharing of resources and benefits derived from sales of NFWPs?										
43.Changes in group membership										
44.Reasons for change in membership										
45. Has internal auditing been done according to by-laws										

7.8.3 Annexure 3: Evaluation Score Sheet for NWFP Management & Marketing Group

A. Brief Information

Name of NWFP Marketing and Management Group		
Objective of Plan		
Types of Evaluation		
Date of Evaluation		
Name of Evaluating Official	Designation	Office

B. Thematic Area: Non-wood Forest Product Management

Indicators	Activities	Achievement (Total Tally)	Score	Achievement Score	Reasons for Non-fulfillment of Target	Observation by Team	Recommendations	
1.Sustainable harvesting of NWFPs practiced	19. NWFPs harvested on the timeline recommended in harvesting guidelines	Transfer score from Sl.2 of Annual Monitoring Summary Sheet (AMSS)	0% = 0					
			1-25% = 2					
			25-50% = 5					
			50-75% = 7					
				75-100% = 10				
	20. NWFPs harvested according to guidelines	Score from sl.3 of AMSS	0% = 0					
			1-25% = 2					
			25-50% = 5					
50-75% = 7								
			75-100% = 10					
2.Resource	21. Plantation/ cultivation of	Score from sl.7 of	Yes=10					

development carried out	NWFPs have been carried out	AMSS	No=0				
3.Effective NWFP monitoring undertaken	22. How frequently has the NWFP MG carried out patrolling	Score from sl.11 of AMSS	Every few months = 8				
			Seasonal = 6				
			During collection = 4				
			Once in a year = 2				
	23. Abundance of NWFP resources in the area compared to previous year	Score from sl.13 of AMSS	Increased = 2				
			Remained same = 0				
Decreased = -2							

C. Thematic Area 2 Non-Wood Forest Product Marketing and Fund Utilization

Indicators	Activities	Achievement (Total Tally)	Score	Achievement Score	Reasons for Non-fulfillment of Target	Observation by Team	Recommendations
1.Efficient commercialization of NWFPs achieved	24. Has the group sold NWFPs during the plan period as per by-laws and sales target?	Score from sl.16 of AMSS	0% = 0				
			1-25% = 1				
			25-50% = 2				
			50-75% = 3				
	25. How much of the collected NWFPs have been sold?	Score from sl.19 of AMSS	75-100% = 4				
			0% = 0				
			1-25% = 1				
			25-50% = 2				
			50-75% = 3				

			75-100% = 4				
	26. Has the group explored different marketing channels to sell their produce? (In event of not getting buyers)	Score from sl.23 of AMSS	Yes = 1 No = 0				
	27. Was the price received by the NWFP MG satisfactory	Score from sl.24 of AMSS	Yes = 1 No = 0				
2.Proper records maintained	28. Have the Record Keeping Books been maintained	Score from sl.26 of AMSS	Well maintained = 10 Inadequately maintained = 5 No= 0				
3.Utilization of earnings ensured	29. Utilization of NWFP MG fund or plan to utilize funds in near future in place	Score from sl.28 of AMSS	Yes = 5 No = 0				

D. Thematic Area 3: Group Governance

Indicators	Activities	Achievement (Total Tally)	Score	Achievement Score	Reasons for Non-Fulfillment of Target	Observation by Team	Recommendations
1.Meetings and discussions according to by-laws	30. Have the general meetings held according to by-laws	Score from sl.36 of AMSS	Yes = 2 No = 0				
	31. Have the committee meetings been held according to by-laws	Score from sl.37 of AMSS	Yes = 2 No = 0				

2. Effective participation of members confirmed	32. Member's participation in general meeting	Score from sl.38 of AMSS	0% = 0				
			1-25% = 1				
			25-50% = 2				
			50-75% = 3				
	33. Executive members participation in committee meeting	Score from sl.39 of AMSS	0% = 0				
			1-25% = 1				
			25-50% = 2				
			50-75% = 3				
34. Sharing of benefits as per the by-laws	Score from sl.42 of AMSS	Yes = 3					
		No = 0					
4. Internal auditing and verification carried out	35. Does the NWFP MG have any loan defaulters?	Score from sl.32 of AMSS	No = 3				
			Yes = 0				
	36. Conducting of annual internal audit	Score from sl.45 of AMSS	Yes = 3				
			No = 0				

E. Achievement Score

Thematic Area	Achieved Score	Thematic Area Weight	Remarks
1. Non-wood forest product management		40	
2. NWFP marketing and benefit sharing		30	
3. Group governance		30	
Total Score		100 %	

A dense forest with a central green banner containing the word 'Bibliography'. The forest is composed of various trees and plants, with a mix of green, yellow, and brown colors. The banner is a solid green color with the word 'Bibliography' written in a white, serif font. The background is a high-angle view of a forest, showing the tops of many trees and a thick canopy. The colors range from dark green to bright yellow and brown, suggesting a mix of species and possibly some autumnal changes. The lighting is bright, creating strong shadows and highlights on the foliage.

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9 List of contributors

Table 9.1: 1st Consultation workshop (August, 2023)


Sl. No	Name	Designation	Office
1	Tashi Norbu Waiba	PFO	Forest Resources Planning and Management Division
2	Lhab Tshering	Dy. CFO	Forest Resources Planning and Management Division
3	Sither Dorji	Dy. CFO	Forest Resources Planning and Management Division
4	Kezang Wangmo	Dy. CFO	Forest Resources Planning and Management Division
5	Tsheltrim Dorji	Sr.FO	Forest Resources Planning and Management Division
6	Norbu Yangdon	Sr. FO	Nature Conservation Division
7	Tshering Pem	Dy. CFO	Nature Conservation Division
8	Sonam Drugyel	Sr. FR I	Divisional Forest Office, Mongar

Table 9.2: Monitoring and evaluation framework consultation workshop (23rd- 27th October, 2023)

Sl. No	Name	Designation	Office
1	Tobgal	Sr. FR	Divisional Forest Office, Bumthang
2	Dorji Thinley	FO	Divisional Forest Office, Dagana
3	Pema Thinley	Sr. FR	Divisional Forest Office, Gedu
4	Dorji Wangdi	FR-I	Divisional Forest Office, Mongar
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6	Tshering Phuntsho	Sr. FR-II	Divisional Forest Office, Pema Gatshel
7	Yoesel Dorji	Sr. FR	Divisional Forest Office, S/Jongkhar
8	Pema Thinley	FO	Divisional Forest Office, Samtse
9	Pema Rinchen	Sr. FR-I	Divisional Forest Office, Sarpang
10	Tshering Peljor	Dy. CFO	Divisional Forest Office, Thimphu
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13	Pema Namgay	Sr. FR-III	Divisional Forest Office, Wangdue
14	Rinzin Tshomo	FR-I	Divisional Forest Office, Zhemgang
15	Lhakpa Tshering	Sr. FR	Bumdeling Wildlife Sanctuary
16	Pema Dendup	Sr. FO	Jigme Dorji National Park
17	Akhey Dorji	PFO	Jigme Khesar Strict Nature Reserve
18	Pema Thinley	Sr. FR	Jigme Singye Wangchuck National Park
19	Kinley Gyeltshen	FR-II	Jomotsangkha Wildlife Sanctuary
20	Kuenley Gyeltshen	Dy. CFO	Phibsoo Wildlife Sanctuary
21	Pema	Sr. FR-I	Phrumsengla National Park
22	Yeshi Dorji	Sr. FR-I	Royal Manas National Park
23	Dorji Phuntsho	Sr. Forester	Sakteng Wildlife Sanctuary

Table 9.3: Consultation Workshop on the review of Monitoring and evaluation framework (20th - 25th March, 2024)

Sl. No	Name	Designation	Office
1	Lobzang Dorji	Director	Department of Forests and Park Services
2	KadoTshering	Specialist III	Ugyen Wangchuk Institute for Forestry Research and Training, Bumthang
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7	Namgay	CFO	Divisional Forest Office, Paro
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