



NETWORK FOR CERTIFICATION AND CONSERVATION OF FORESTS (NCCF)

Forest Management Certification Standard

NCCF -STD- FM- 01 /2017

Network for Certification and Conservation of Forests (NCCF)

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Foreword

The Network for Certification and Conservation of Forests (NCCF) is a non-profit organisation, registered under the Societies Registration Act, 1860 and established with an aim to develop country specific forest management certification scheme in India.

The NCCF Forest Management certification standard has been developed by the Standards Development Group (SDG) of the NCCF through an open, transparent, consultative and consensus based process, including a series of stakeholder consultations, undertaken through emails, online consultations, interviews and field level stakeholder consultation workshops. Post development, the standard was subjected to extensive field level pilot testing in 3 locations, Nagaon Forest Division in Assam, Dandeli (Haliyal) Forest Division in Karnataka and Hoshangabad Forest Division in Madhya Pradesh. The aim of the pilot testing was to assess the extent of applicability of the standard in the Indian conditions as well as to test the adaptability in the field. This document is the culmination of the process of the whole process of internal drafting, review, stakeholder consultation and pilot testing.

The NCCF Forest Management Certification Standard laid out in this document, has been developed at a broad level, to address the issue of state owned forests as well as privately owned tree clad areas/forests. This document also intends to serve as the foundation for development of specific standards for NWFPs, Tree and Plantations outside Forest areas, protected areas and wetlands etc.

The themes, principles, criteria and indicators are intended to be quite exhaustive, so as to cover all relevant aspects of responsible forest management, yet at the same time, they shall remain dynamic, so that further revisions are possible in the standards, based on the changing national and global conditions, and as and when new information, techniques or technologies come into significant play. The NCCF retains the liberty to review and revise the standard, in whole and in parts, based on changing future requirements. These changes shall be undertaken as and when warranted, but atleast once during a five year tenure.

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Introduction

India's forests, home to a couple of the world's Mega Diversity Hot Spots, including Western Ghats and the Eastern Himalayas are a compilation of contrasts (varying from dry scrub savannahs and mangroves to rainforests and alpine montane forests) with a breath-taking diversity in terms of species, ecological zones, forest types and a range of forest products and services. The wide spectrum of India's forests represents a microcosm for the whole of South Asia, and within itself, the colourful canvas of ecological conditions and rich biodiversity prevalent in the region.

The management and administration of forests in India differs from those of other geographies, particularly European and the American forests in that most of its forest resources are predominantly owned and managed by the state, except in the certain parts of the country where autonomous councils have a management stake in community forests. In the last few decades however, India has made policy interventions to enhance people's participation in conservation and protection of forests, keeping in mind the fact that India has a huge population which is dependent on forests for food, shelter and livelihood. This has been further attempted to be consolidated by enacting law to bestow forest rights to tribals and traditional forest dwellers.

With such a varied forest resource base and competing demands on the forests for food, shelter as well as for alternative land uses, there is an urgent need to protect and conserve them for future generations. Such an approach has to however, balance conservation with the social need for meeting the present requirements of a vast population dependent on forests for their livelihood. In addition, there is an ever present and increasing demand from industry for resources and land, in addition to the pressure on forests to be diverted to other land uses for food production, infrastructure etc. A judicious use of forests and their resources would depend upon their proper management and the tool of forest certification can act as promoter and monitor for these management practices, leading to long term sustainability of forest resources.

Sustainable and responsible management of forests may be broadly defined as the use and management of forests, forest resources and associated lands in such a manner as to meet the social, economic, ecological, cultural and spiritual needs of present and future generations, while at the same time maintaining their biodiversity, productivity, regeneration capacity, vitality and potential to fulfil relevant social, economic and ecological functions.

It is in this context that forest certification has evolved as a voluntary market-based non-regulatory conservation mechanism designed to recognize and promote responsible forest management. Through certification, independent third party assessors evaluate forest management including harvesting practices, based on standards that address its sustainability, environmental protection as well as social and economic welfare of the people.

Presently, there exists various forest management certification schemes globally, operating with varying degrees of success in meeting the requirements of responsible forest management. However, when different forest management certification schemes were evaluated for adoption in India, there was a realization among policy makers and stakeholders that India needs to develop an independent forest management certification system which, while meeting the rigors of certification objectives and international benchmarking, is

simultaneously conversant with the peculiar conditions and constraints that affect management of forests in India. Keeping these peculiarities in consideration, the NCCF Forest Management certification standard has been developed to become a tool for management, monitoring, assessment and improvement of forest and plantation management practices, as well as forming the basis for Forest Management (FM) and Chain of Custody (CoC) certification to benefit forests and plantation owners, farmers, craftsmen, decentralized value addition/manufacturing units and trading units, by getting wood based products linked to the domestic and international markets through a credible certification network.

The NCCF aims to promote the implementation of improved and sustainable forestry practices in the country which are economically viable, environmentally responsible and socially beneficial in accordance with national policies, institutional frameworks and sustainability usage norms. The standard envisages the development of principles, criteria and indicators, which, at the national level, can be a guide for national forest management policies, regulations and legislations necessary to achieve objectives on sustainable forest management, while internationally, can hold up to the most rigorous standards for sustainable forest management presently in practice. On a broader level, the standard envisages to become a tool for assessment and improvement of forest and plantation management practices and in the process, will have an aspirational approach to help in the gradual yet permanent and continuous improvement of the existing forest management systems.

It is required to clarify here that the standard is intended for voluntary application to any forest, plantation or tree covered area, regardless of size or ownership. The standard is also intended to be comparable with relevant international and national policy instruments and has been developed with both national and international requirements and norms in mind.

NCCF acknowledges the work done by IIFM and ITTO in the field of forest certification in India through Bhopal India Process, and has also taken note of the Government Policies ,Acts and Rules for the sustainable management of Forests enunciated primarily through National Working Plan Code 2014, and Forest Conservation Act (1980) and Rules and similar numerous other initiatives.

Verbal forms for the expression of provisions

[Adapted from *ISO/IEC Directives Part 2: Rules for the structure and drafting of International Standards*]

“Shall”: indicates requirements strictly to be followed in order to conform to the standard.

“Should”: indicates that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required. A certification body can meet these requirements in an equivalent way provided this can be demonstrated and justified.

“May”: indicates a course of action permissible within the limits of the document.

“Can”: is used for statements of possibility and capability, whether material, physical or causal.

Organization of the document

Major issues relevant to forest certification have been grouped together into similar Themes, with the Themes further designed and organized to the 'triple bottom-line' approach for 'socially beneficial, environmentally responsible and economically viable' forest management. The Themes, as a fabric, have been developed by bringing together the various strands of major issues that are addressed among different forest certification standards globally and considering the National Working Plan code. These Themes are further organized into Principles, which are the building blocks of the standard. The Principles are further elaborated by means of various Criteria for evaluation, with each Criterion corresponding to an aspect of the Principle, with the whole Principle being more than the sum of its participant criteria. Further, Indicators have been developed for each criterion, to enable judging the performance in the field. There would be areas of overlap between the participant elements of the standard viz., Principles, Criteria and Indicators, across Themes. This overlap occurs as many elements of the standard would be overarching across different Themes, although it is endeavoured that the components of each Theme have distinct and common goals. The various themes are:

- Theme A:** This theme deals with the legality of the forest management enterprise and the legal status of all actions and activities attributed to it.
- Theme B:** This theme deals with the development and periodic updation of a written forest management plan, its implementation and monitoring.
- Theme C:** This theme deals with forest management activities and their social, economic and environmental impacts, as well as links with climate change.
- Theme D:** This theme deals with the aspect of 'economic viability of forest management operations' and is concerned with the sustainable and productive utilization of forest resources, including both forest products as well as services.
- Theme E:** This theme is concerned with the aspect of 'socially responsible forest management' and deals with social and community relations as well as rights of forest workers as well as tribals, forest dwellers and forest based communities.
- Theme F:** This theme deals with the aspect of 'environmental and ecological sustainability' of forest management and deals with matters related to identification and management of High Conservation Values, tangible and intangible forest services, biodiversity, natural resource conservation and management etc.

List of Abbreviations

AR	Artificial Regeneration
ANR	Assisted Natural Regeneration
BIP	Bhopal India Process
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna & Flora
C&I	Criteria and Indicator
CoC	Chain of Custody
DoE	Designated Operational Entity
EDC	Eco Development Committee
FCA	Forest Clearance Act
FM	Forest Management
FME	Forest Management Enterprise
FMU	Forest Management Unit
FPIC	Free Prior and Informed Consent
FRA	Forest Rights Act
FSC	Forest Stewardship Council
FSI	Forest Survey of India
GHG	Greenhouse Gases
HCVF	High Conservation Value Forests
IIFM	Indian Institute of Forest Management
ILO	International Labour Organisation
ITTO	International Tropical Timber Organization
JFMC	Joint Forest Management Committee
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MoEF&CC	Ministry of Environment, Forest and Climate Change

NAMA	Nationally Appropriate Mitigation Actions
NAPCC	National Action Plan on Climate Change
NCCF	Network for Certification and Conservation of Forests
NDC	Nationally Determined Contributions
NGO	Non-Governmental Organisation
NWFP	Non-Wood Forest Product
PDD	Project Design Document
PES	Payment for Ecosystem Services
PEFC	Program for the Endorsement of Forest Certification
REDD+	Reducing Emissions From Deforestation And Forest Degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
RET	Rare, Endangered and Threatened
SAPCC	State Action Plans on Climate Change
SDG	Standard Development Group
SFD	State Forest Department
SFM	Sustainable Forest Management
SoP	Standard Operating Procedure
TWG	Technical Working Group
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environment Conference on Environment and Development
UNFF	United Nations Forum on Forests
UNFCCC	United Nations Framework Convention on Climate Change
WWF	World Wide Fund for Nature

Scope

This document covers requirements for forest management standards applicable to the Indian Forests. The terms and definitions used in the context of the standard is included in the annex of the document.

Normative References

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- *National Working Plan Code 2014*
- *National Agroforestry Policy 2014*
- *Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006*
- *Biological Diversity Act 2002*
- *National Forest Policy 1988*
- *Forest Conservation Act 1980*
- *Wildlife Protection Act 1972*
- *Indian Forest Act 1927*
- *NCCF's Standard Setting Policy*
- *PEFC Sustainable Forest Management – Requirements PEFC – ST 1003:2010*
- *ILO's Declaration of Fundamental Principles and Rights at Work 1998*

THEME A: LEGALITY AND LAND TENURE

The theme deals with the legal existence of the Forest Management Enterprise (FME) and the participating Forest Management Units (FMUs). Major issues covered in this theme include legality of the operations undertaken by the FME, compliance to national, state and local laws, regular payments of duties and levies,

compliance to international agreements to which India is a signatory (CITES, ITTO, CBD Paris Agreement, UNCCD etc.), clear and documented ownership of forest lands along with rights. The theme also deals with responsibilities for ensuring legal compliance as well as resolution of disputes of ownership and rights. It also considers the nature, frequency and severity of regulatory violations and non-compliances and the way they have been addressed. Another important issue addressed is the availability of resources – human, financial and physical, to ensure compliance to relevant laws and statutes.

Principle 1: Compliance to national, state and local laws and international treaties and regulations

Criterion 1.1: The Forest Management Enterprise (FME) identifies and records all national, state and local laws and administrative/regulatory requirements applicable to it and respects and complies with the provisions therein, in letter and spirit.

Indicator 1.1.1: The FME and its managers shall have access to up-to-date copies of all applicable central, state and local laws, regulations and policies related to forest management and are aware and/or knowledgeable of the regulatory framework for forest management.

Indicator 1.1.2: The FME shall comply with all laws applicable to forest management, including laws related to forest management practices; nature and environmental protection; protected and endangered species; property, tenure and land and resource rights for indigenous people and forest dependent communities; health, labour and safety issues; and payment of royalties and taxes.

Indicator 1.1.3: The FME shall initiate suitable actions to resolve any case of non-compliance with these laws and regulations which are brought to its notice with the appropriate authorities. Records of all violations of these laws and the remedial, punitive or mediatory actions undertaken to address them are maintained by the FME.

Indicator 1.1.4: When violations occur and are brought to notice of FME as per Indicator 1.1.3, the FME shall promptly to correct and remediate the circumstances associated with the violation with the appropriate authorities/legal mechanism.

Indicator 1.1.5: The frequency and nature of regulatory violations, if indicative of widespread and systemic non-compliance, shall render the FME certificate liable for cancellation.

Criterion 1.2: The FME ensures that all applicable and legally prescribed fees, royalties, taxes and other charges are paid regularly.

Indicator 1.2.1: The FME shall have an up-to-date list of all legally prescribed fees, royalties, taxes and other charges.

Indicator 1.2.2: The FME shall demonstrate evidence that payments of taxes, royalties and other charges are made in a timely manner. There is no evidence of chronic non-payment.

Indicator 1.2.3: The FME shall maintain up-to-date records of all payments and makes them available to the assessment team.

Criterion 1.3: The FME, its managers and all participating FMUs (Forest Management Units) respect and implement the applicable provisions of all binding international agreements and conventions to which India is a signatory.

Indicator 1.3.1: The FME shall comply with the intentions of the international agreements and conventions that India has ratified. All the ratified agreements are enforced by means of legislation, and conformance would be assessed based on compliance to applicable laws related to the implementation of these agreements.

Indicator 1.3.2: In case of state owned forests, relevant government orders related to applicable provisions of binding international agreements shall be accessible to the FME.

Indicator 1.3.3: The FME managers should have a broad understanding of the applicable laws, regulations and binding agreements applicable to it and respect and implement the same in the field.

Criterion 1.4: The FME ensures that forest areas are protected from illegal harvesting, hunting, settlement and other unauthorized activities and appropriate resources are provisioned for the same.

Indicator 1.4.1: The FME shall have a documented long term commitment for protection of the forest from unauthorized activities such as encroachments, illegal logging and land use, illegal mining, hunting, fires and other unauthorized activities.

Indicator 1.4.2: The FME should ensure that it has appropriate resources – infrastructure, financial and human, to ensure that illegal activities do not take place.

Indicator 1.4.3: If any illegal or unauthorized activities are detected, the FME and its officers shall take appropriate measures, in accordance with law, to address them.

Criterion 1.5: The FME has a written long-term commitment to adherence to the Themes, Principles and Criteria presented in this standard, and functions in a manner that demonstrates compliance to the spirit of NCCF.

Indicator 1.5.1: The FME shall have documented long term commitments to forest management practices consistent with the Principles and Criteria presented in this standard.

Indicator 1.5.2: The statements of written commitment shall be endorsed by the top management of the FME, communicated throughout the organization, and made publicly available.

Indicator 1.5.3: The FME shall provide information on forested areas owned/managed by it, which has not been included in the scope of the present assessment.

Indicator 1.5.4: The FME shall not indulge in any activities which are against the spirit of the NCCF-Forest Management certification standard in areas managed by it which are outside the scope of the certificate.

Indicator 1.5.5: The FME managers shall have access to written or electronic copies of the NCCF Forest Management Standard and field personnel should demonstrate a general level of awareness of the standard, consistent with their duty.

Principle 2: Land Tenure, Rights and Responsibilities

Criterion 2.1: The FME managers demonstrate availability of clear, legally secure and demonstrable evidence of long-term rights to the forest land (e.g. land title, customary rights, or lease agreements).

Indicator 2.1.1: The FME shall have clear and legally secure land tenure and use rights to the forest resource.

Indicator 2.1.2: The FMU boundaries shall be clearly demarcated in the field and distinctly marked on maps.

Indicator 2.1.3: In the case of usufruct agreements, the FME shall demonstrate evidence of its legal rights to the FMU and experience for forest management and use of forest resources for the FMU under assessment. There shall be unambiguous and distinct ownership and usufruct agreements.

Criterion 2.2: Local communities with legal or customary/traditional tenure or rights maintain control over forest operations and resources (to the extent necessary to protect said rights or resources), unless they delegate control with free, prior and informed consent to the state or other agencies. In case of state owned forest lands, rights of all concerned stakeholders would be identified and documented. In cases where the rights have been settled, notifications to the effect of rights settlement are made available and orders of the competent authorities are provided.

Indicator 2.2.1: The FME shall identify the tribals, local communities, forest dwellers and/or other stakeholders with legal and/or customary/traditional rights to the forest and describe the nature and extent of these rights in the management plan.

Indicator 2.2.2: When communities have delegated control of their rights or use in whole or in part, in a manner authorised by law, this shall be confirmed by documented agreements and/or interviews with representatives of local communities.

Indicator 2.2.3: When the legal or customary/traditional tenure or rights over resources have been settled legally (in case of state owned forest lands), the notifications to the effect of rights settlement shall be available and orders of the competent authorities regarding rights or tenure settlement shall be provided.

Indicator 2.2.4: Allocation of duly recognized legal or customary rights by local communities to other parties' shall be documented, with evidence of free, prior and informed consent.

Criterion 2.3: Appropriate and legally applicable mechanisms are employed to resolve disputes over tenure claims and rights. The circumstances and status of any outstanding disputes will be explicitly considered in the certification evaluation. For all documented disputes, the steps/mechanisms engaged in dispute resolution are documented.

Indicator 2.3.1: Conflicts over land tenure and rights shall be resolved in a systematic manner through appropriate mechanisms, with preference to voluntary and conciliatory methods over adjudication/arbitration or other legal mechanisms.

Indicator 2.3.2: The FME shall record all such conflicts and their mode of resolution (along with outcomes), to avoid further litigation, as well as to set precedents for similar conflicts in future.

Indicator 2.3.3: The magnitude and severity of unresolved tenure claims and rights disputes shall be minor, relative to the scale of forest management operations. For all such unresolved or outstanding disputes, the FME shall ensure that the circumstances and present status of the dispute and all steps/mechanisms engaged in dispute resolution are documented.

THEME B: FOREST MANAGEMENT PLAN

The theme deals with the development and management of the forest operations in a Forest Management Enterprise (FME) in a defined management plan. Forest management planning needs to include practices for the sustainable management of forests and its biodiversity, encompassing the social, economic and ecological dimensions, as enshrined in the National Forest Policy, the Indian Forest Act (1927), Forest (Conservation) Act (1980) , Wildlife (Protection) Act (1972), Biological Diversity Act (2002), The Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act (2006), Environment (Protection) Act (1986), and other relevant national and local legislations of the country. The National Working Plan Code, 2014 prescribes the need for a management /working plan “to suitably manage, conserve and utilize the forest resources and to bring uniformity in forest management planning with due focus on environmental stability, biodiversity monitoring and management, restoration of ecological balance of the disturbed areas, protective functions of the forest resources and other socio-economic benefits of NWFPs.”

The sustainability concept not only includes sustainability of productive functions but also environmental functions including soil and water conservation and carbon sequestration and the socio-economic benefits to forest dependent communities, tribals and forest dwellers living in and on the forest fringes, including meeting their livelihood needs and their involvement in the protection and management of forest resources. Sustainable Forest Management (SFM) practices have been linked with quantitative and qualitative or descriptive attributes related with above functions of the forests in the working plans. Therefore, any planning and implementation of sustainability of forest resources should monitor and assess all the above aspects periodically, keeping in mind the scale and intensity of forest operations, as well as the risks associated with management activities, which would not only indicate the direction of change but would also help in the assessment of forest management.

Other issues addressed within the scope of this theme include, development of objectives of the management plan (silvicultural, socio-economic, environmental), periodic revisions of management plans, training of FMEs and workers in implementation of the management plans, establishment of monitoring and assessment protocols for implementation of plan (including type and intensity of monitoring), procedures for establishing Chain of Custody of forest products, public summary of results. The theme also addresses the resource allocation for plan development and monitoring & evaluation and the extent of stakeholder input that has gone into plan development.

Principle 3: Development and implementation of a Management Plan/Working Plan

Criterion 3.1: The FME develops and maintains a written management plan (and other supporting documents), appropriate to the scale, intensity and complexity of operations, that addresses the following plan components enumerated in this criterion, as well as the provisions for protection against forest fires, pests and diseases, illegal settlement and harvesting, safeguarding archaeological sites and others. The management plan documents:

- a. The objectives of management, which are 'socially beneficial, environmentally responsible and economically viable'.
- b. Qualitative and quantitative description of the forest resources under management, biodiversity attributes environmental limitations, land use and ownership status, socio-economic conditions and a profile of adjacent lands.
- c. Maps describing the forest resource base including protected areas, planned management activities and land ownership.
- d. Human and capital resource allocation to develop a functional and effective management plan.
- e. Description of silvicultural and/or other management systems, based on the ecology of the forest in question and information gathered through resource inventories.
- f. Rationale for rates of annual harvest and species selection.
- g. Description and justification of harvesting techniques and equipment to be used.
- h. Provisions for monitoring of forest growth and dynamics.
- i. Environmental and social safeguards based on environmental and social assessments and management impact identification.
- j. Mitigation strategy/plan for identified social and environmental impacts.
- k. Plans for the identification, protection and regeneration of rare, threatened and endangered species, habitats and ecosystems.
- l. Approved site specific plans for nurseries and plantations (ANR/NR/AR) -including site selection, species selection, soil and nutrient analysis, appropriate silvicultural interventions, appropriate pest and nutrient management regimes and post planting care.
- m. Fire prevention, management and suppression plan, appropriate to the scale and intensity of the fire hazard
- n. Assess the problem of grazing and measures to avoid overgrazing to balance the pressure of animal populations and grazing on forest regeneration and growth as well as on biodiversity.
- o. Process of monitoring of management review including deviations, if any
- p. Protection against illegal activities
- q. Measures for protection of high conservation values

Indicator 3.1.1: The FME shall develop a written management plan having the components a) – q) of the Criterion 3.1 as defined above.

Indicator 3.1.2: The management plan shall contain long term strategic goals, medium term objectives as well as short and near term tactical direction in line with the objectives of this standard.

Indicator 3.1.3: The management plan should reference previous management plans w.r.t. direction of management planning, deviations and results of successive management plans across different management cycles.

Indicator 3.1.4: The FME shall ensure that sufficient resources are invested in plan development to produce a functional and effective management plan.

Indicator 3.1.5: Management plan shall be reviewed and revised every 10 year or in shorter period

Criterion 3.2: The FME undertakes capacity building of its personnel for proper implementation of the management plan and research to augment the social, economic and environmental attributes of the forest area.

Indicator 3.2.1: The FME shall establish mechanisms to communicate the management plan and its elements to the FME staff.

Indicator 3.2.2: The FME shall ensure that the forest staff and workers are aware of their respective roles in implementation of the management plan, and are provided with appropriate training and capacity building to undertake the same as per documented mechanisms.

Indicator 3.2.3: Wherever necessary, the FME shall use professional technicians to provide forest workers with necessary technical guidance for their field operations.

Indicator 3.2.4: The FME shall maintain records of training provided to its staff in management plan implementation commensurate with their roles and responsibilities.

Indicator 3.2.5: If the FME is engaging sub-contractors or outsourcing any portion of the work to outside agencies, the FME shall ensure that all such outsourcing agencies and subcontractors comply with the requirements of the management plan specific to their area of operations.

Criterion 3.3: The FME undertakes a process of stakeholder identification, consultation and engagement during the plan development and implementation stages.

Indicator 3.3.1: The FME shall undertake a stakeholder mapping and consultation process to engage all the relevant stakeholders that would be affected by forest management activities.

Indicator 3.3.2: The FME shall solicit the opinion of identified stakeholders in the process of plan development, plan implementation as well as plan revision. The process of consultation is based on free, prior and informed consent (FPIC) and shall be documented, both at plan preparation stage as well as during implementation and monitoring stages.

Criterion 3.4: FME makes publicly available a summary of the primary elements of the management plan. The public summary needs to be updated at least once during the period of validity of the management plan and as and when major changes occur in the management or resource base.

Indicator 3.4.1: The FME shall make publicly available the primary elements of the management plan (where ever possible in the locally prevalent language), including the information of the scope and scale of forest management to relevant stakeholders.

Indicator 3.4.2: The FME shall update the summary of the management plan at least once during the period of validity of the management plan, and as and when major changes occur in the management or in the resource base.

Principle 4: Monitoring, Assessment and Review of management plan and its implementation

Criterion 4.1: Appropriate to the scale and intensity of operations, forest management activities include the research and data collection to monitor the following attributes:

- a. Growth rates and condition of the forest, including degradation, regeneration and restoration/rehabilitation.
- b. Composition and observed changes in the flora and fauna.
- c. Change matrix of forest resources w.r.t. previous plans and management systems
- d. Yield of all forest products harvested.
- e. Costs, productivity, and efficiency of forest management.
- f. Economic, environmental and social impacts of harvesting and other operations.
- g. Changes in carbon stock through emission sequestration

Indicator 4.1.1: Appropriate to the scale and intensity of operations, the FME shall periodically gathers information on components a) – g) enumerated in criterion 4.1 above.

Indicator 4.1.2: Written records shall be maintained of the periodic harvest levels of each commercial forest product, at levels of specificity appropriate to the scale and intensity of operations.

Indicator 4.1.3: The FME should demonstrate a commitment to acquiring information on key indicators pertaining to the environmental and socio-economic profile of its operations.

Criterion 4.2: The health and vitality of forests is be periodically monitored, especially key biotic and abiotic factors that potentially affect health and vitality of forest ecosystems, such as pests, diseases, overgrazing and overstocking, fire, and damage caused by climatic factors, air pollutants or by forest management operations.

Indicator 4.2.1: The FME shall document the key biotic and abiotic factors that can potentially affect the health and vitality of forest ecosystems within the FMU.

Indicator 4.2.2: The FME monitoring protocols shall include a periodic monitoring of key biotic and abiotic factors, based on the scale, intensity and risks of operations.

Indicator 4.2.3: The FME should develop a change matrix for these indicators, so that appropriate preventive and remedial action may be undertaken, whenever there is a threat to forest ecosystem health and stability.

Criterion 4.3: The frequency and intensity of monitoring is determined by the scale and intensity of forest management operations, as well as the relative complexity and fragility of the affected environment. Monitoring procedures are consistent and replicable over time to allow comparison of results and assessment of change.

Indicator 4.3.1: Based on the scale and intensity of forest management activities and the local conditions, the FME shall define the monitoring indicators, monitoring protocols and the frequency and intensity of monitoring.

Indicator 4.3.2: The FME shall demonstrate a track record of implementing monitoring protocols which are consistent and replicable over time.

Indicator 4.3.3: The FME management shall undertake performance review against monitoring indicators in achieving objectives of forest management. The reviews are undertaken at the FME level at least annually.

Indicator 4.3.4: Results of forest monitoring shall be reflected in the adaptive development/revision of the forest management plans and operation plans.

Criterion 4.4: The FME provides documentation to enable independent certification bodies/organizations to monitor and trace each forest product from its origin to sale, a process known as the "chain of custody."

Indicator 4.4.1: The FME shall have documented procedures for the tracking of certified products from harvesting, transportation, processing to retail and marketing to ensure that the origin of forest products can be traced as per Chain of Custody (CoC) indicators for FMEs.

Indicator 4.4.2: The FME shall implement consistently the CoC and traceability procedures defined in indicator 4.4.1 and have documented evidence of the same, to enable independent certification bodies to trace the forest products from source to sale point.

Criterion 4.5: The management is periodically revised to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing environmental, social and economic conditions prevalent in the area. Any change in legal status of the land or change in rights is documented in the management plan.

Indicator 4.5.1: The FME shall demonstrate a commitment to adaptive management where information gathered during systematic monitoring is incorporated into revisions to the management plan, as well as revisions to its annexes, standard operating procedures or other planning documents.

Indicator 4.5.2: Any change in legal status of the land, change in tenure or use rights, major changes occur in the management or in the resource base etc. shall be documented and updated in the management plan.

Indicator 4.5.3: The forest management operations shall contribute to or support research activities relevant for the sustainable management of forest resources.

Criterion 4.6: The FME makes publicly available a summary of the results of monitoring indicators.

Indicator 4.6.1: The FME shall make publicly available a summary of the results of monitoring indicators (excluding any proprietary or confidential information)

Indicator 4.6.2: The FME shall specify a period for updating the public summary of the results of monitoring, appropriate to the scale and intensity of operations. The updates are undertaken at least once during the period of validity of the management plan and as and when major changes occur in the forest management or the resource base.

THEME C: FOREST MANAGEMENT – IMPACTS AND EFFECTS

Anthropogenic involvement in forest/plantation management activities results in modification of the ecological/social conditions of the existence of these forests and on the communities that are managing and/or dependent on these forests. This Theme addresses issues related to the effects of various management activities on forest resources and the surrounding environment in which the Forest Management Enterprise (FME) is operating. This includes matters related to protection and conservation of soil and water resources which may be affected by management activities, assessment of forest resources to climate change vulnerability, resilience of the forests, adaptation and mitigation measures at the FME/FMU level etc. Also, matters related to the social impact of forest management operations are dealt here. Another aspect of forestry (covered here with an aspirational motive) , is forests and climate change, including the impacts of climate change on forests ecosystems, and the potential of forest management activities to fulfil climate change adaptation and mitigation measures, which can dovetail with the Nationally Appropriate Mitigation Actions (NAMAs), the NDC (Nationally Determined Contributions), National Action Plan on Climate Change (NAPCC) as well as State Action Plans on Climate Change (SAPCC).

Principle 5: Forest Management activities – Social, Economic and Environmental Impacts

Criterion 5.1: The FME undertakes assessments of the social, economic and environmental impacts of management activities on aspects such as forests' ecology, soil and water resources, local population in and around the forest management unit (FMU) and/or those dependent on the forest or forest resources for food, shelter or livelihood. This includes all direct or indirect management activities within the FMU undertaken by the FME or related to the present existence or functioning of the forest in its natural state.

Indicator 5.1.1: Based on the scale, intensity and risk from forest management activities, the FME shall identify, assess and analyse the social and economic impacts of its management activities on the local population in and around the forest management unit (FMU) and those dependent on the forest for food, shelter and/or livelihood.

Indicator 5.1.2: Based on the scale and intensity of forest management and the forest resource features, the FME shall identify, assess and analyse the present and potential impact of forest management activities on the forests' ecology, soil, water resources, wildlife and surrounding environment in which the FME operates.

Indicator 5.1.3: The evaluations (social, economic and environmental) shall be undertaken at both the site and landscape level, and shall account for both singular impacts as well as cumulative impacts of management activities.

Indicator 5.1.4: The FME shall make publicly available the summary of the social, economic and environmental impact assessments of forest management activities.

Criterion 5.2: Management planning and operations incorporate the results of evaluation of social and environmental impacts. The planning of management operations involve detailed consultations with all stakeholders who are affected or could be potentially affected by management operations.

Indicator 5.2.1: The evaluation of environmental impacts and analysis shall include a documented stakeholder consultation process, with free, prior and informed consent of the participating stakeholders.

Indicator 5.2.2: The FME shall document issues raised by stakeholders related to access and rights, including the effect of forest operations on communities living upstream or downstream etc.

Indicator 5.2.3: Based on the results of impact assessment, the planned forest management operations shall be appropriately modified, adjusted or improved, to minimize the impact of these activities on the environment and society, and to avoid degradation of and damage to forest ecosystems and the local communities that depend on and manage them.

Indicator 5.2.4: The FME shall document any changes made in management practices and implements steps to monitor such changes to measure their effectiveness.

Criterion 5.3: Various protective measures are undertaken in forest management operations to maintain the natural features of forest lands, protect water resources, and prevent land degradation due to forest management activities.

Indicator 5.3.1: Effective measures shall be taken to prevent, and where unavoidable minimize the damage to forest areas caused by anthropogenic activities such as land preparation and uprooting, tending, forest harvesting, regeneration, road construction etc. to maintain the natural features of the soil and its long-term productivity.

Indicator 5.3.2: The FME shall define and document Standard Operating Procedures (SoPs) for all forest management activities undertaken within the FMU and design them to reduce potential damage to forest lands or ecosystems.

Indicator 5.3.3: Negative impacts on the quality and quantity of water resources are should be avoided, soil and water erosion controlled, and damage to catchments within the forest avoided.

Indicator 5.3.4: The FME shall define the width of buffer zones to conserve water and soil at the banks of rivers and streams or around water bodies. These zones should be as per existing local guidelines, or, in their absence, based on available scientific data, keeping in mind precautionary principle.

Indicator 5.3.5: Buffer zones defined as per indicator 5.3.4 above shall be established and marked in the forest map or the forest operational design.

Indicator 5.3.6: The FME shall minimize the use of chemical fertilizers in its operations (both in field as well as in nursery). Any unavoidable use of chemical fertilizers should be gradually phased out, with a preference for organic and bio fertilizers to enhance soil fertility.

Criterion 5.4: Ecological functions and values are maintained intact, enhanced, or restored, including:

- a. Forest regeneration and succession

- b. Genetic, species, and ecosystem diversity
- c. Natural cycles that affect the productivity of the forest ecosystem

Indicator 5.4.1: The FME shall describe the known ecological functions and values in the management plan and update them periodically as and when the additional information is acquired.

Indicator 5.4.2: The management plan shall incorporate principles of landscape and ecosystem-based planning. Subject to the scale, intensity and nature of management interventions, the forest operations shall strive to maintain all naturally occurring species in their natural habitat and endeavour to maintain genetic, species and landscape level diversity.

Indicator 5.4.3: The FME shall undertake forest management operations in a manner to maintain, enhance or restore natural forest composition and maintain a full range of successional stages at distributions within the range of natural variability.

Indicator 5.4.4: Harvesting should be designed and laid out, over time and space, with consideration of the types, sizes and frequency of natural disturbances as well as connectivity of wildlife habitats.

Indicator 5.4.5: The FME should take appropriate steps to ensure that regeneration is successful and that young stands, in both harvested areas and restoration areas, either planted or naturally established, are well-stocked with desired species, vigorous and on the trajectory to healthy stands.

Principle 6: Forests and Climate Change – contribution of forest management activities to climate change mitigation and adaptation, change in forest carbon inventories etc.

Criterion 6.1: The FME undertakes forest management operations that maintain and enhance the carbon cycle in the long term.

Indicator 6.1.1: The FME shall manage the forest within the defined forest area to maintain or enhance its contribution to carbon cycle.

Indicator 6.1.2: The FME may undertake a quantitative estimation of the current and future carbon sequestration on the defined forest area, in terms of

- a. Additions and deletions to forest area
- b. Net carbon uptake in terms of increase in number of stems as well as growing stock
- c. Quantification of net removal of carbon from the forest, both at an FMU level, as well as at the FME level
- d. Success of reforestation/rehabilitation activities

Criterion 6.2: The FME demonstrates a commitment to adapt and integrate climate positive activities in the conduct of the enterprise viz., minimizing fossil fuels usage by forest operations, utilization of renewable energy, resource optimization etc.

Indicator 6.2.1: The FME should assess the carbon footprint of its management operations, both direct and indirect and evaluated and implemented measures to reduce the footprint.

Indicator 6.2.2: The FME should demonstrate a commitment to minimizing fossil fuels usage by forest operations and in the conduct of the enterprise.

Indicator 6.2.3: The FME may establish a hierarchy of Green House Gas (GHG) footprint reduction mechanisms based on the nature and scope of operations and initiated implementing them, subject to operational considerations.

Criterion 6.3: The FME aligns the forest management operations to the State Action Plans on Climate Change (SAPCC), subject to meeting the objectives of forest management. This alignment includes climate change mitigation actions and promoting climate change adaptation potential of dependent communities.

Indicator 6.3.1: The FME managers should have access to copies of the SAPCC.

Indicator 6.3.2: The FME should identify actions within its operational scope which would lead to climate change mitigation and/or promoting climate change adaptation potential of the forest dependent communities.

Indicator 6.3.3: Based on the size, scale and intensity of the forest management operations, the FME may implement the actions identified in Indicator 6.3.2, suitable and congruent with the SAPCC, in the participating FMUs.

Indicator 6.3.4: In case it is not possible to undertake any actions suitable to the SAPCC within the FMUs, the FME may undertake actions, within or outside the FMUs, consistent with the provisions of the SAPCC by dovetailing its actions with the recommendations of the SAPCC and/or other existing national or state level programs.

Criterion 6.4: The FME, over the long term, undertakes validation and verification of carbon mitigation actions against defined baselines as per internationally agreed mechanisms, and register the same in available national or international carbon registries.

Indicator 6.4.1: The FME may develop the forest management operations so that they may be registered as a project in available national or international carbon registries under appropriate mechanisms. To undertake the same, the FME needs to:

- a. Define the project boundaries of the FME which shall be considered and developed as a carbon project
- b. Undertake a baseline study to evaluate and quantify present carbon stock (above ground, below ground and detritus) as well as growing stock, in terms of carbon sequestration
- c. Assess and document the additionality, permanence and leakage factors of the project
- d. Develop PDD (Project Design Document)

Indicator 6.4.2: The FME may identify the national or international carbon registry in which they propose to register the project along with the methodology for assessment and validation that shall be undertaken.

Indicator 6.4.3: The FME may select the DOE (Designated Operational Entity) for undertaking the verification and validation assessments, and take the requisite steps to get the project registered in an appropriate national or international carbon registry.

THEME D: SUSTAINABLE AND ECONOMIC UTILIZATION OF FOREST RESOURCES

The theme deals with the diverse and complete utilization of forest produce, the establishment and development of a robust local economy, with an emphasis on use of forest products and services, along with development of an inventory of the benefits associated with forests. Other issues addressed in this theme include optimal utilization of forest resources including all wood and non-wood products, minimizing wastage, use of local resources, value addition to benefit the local economy, establishment of written framework for sustainable extraction of NWFPs including guidelines related to nature and type of extraction, intensity and frequency of extraction and subsequent fallow periods etc. This theme also considers traditional management systems and their integration into the FME management along with the way forest management activities are designed and implemented, spatially and temporally, with due consideration to the impacts on the forest services. This theme also covers emerging aspects of valuation and payment for ecosystem services, REDD+, carbon sequestration etc.

Principle 7: Inventory and sustainable harvest regimes for forest resources

Criterion 7.1: The FME undertakes the inventory, survey and mapping of forest resources, including standing stock, growing stock and forest resource regeneration in a periodic manner within the defined forest area. All merchantable forest produce under the scope of certification and chain of custody is inventoried and subject to an economic evaluation.

Indicator 7.1.1: The FME shall undertake periodic surveys and inventory of all forest resources under its jurisdiction and as given in the scope of certification.

Indicator 7.1.2: All merchantable forest products under scope of certification are should be inventoried (both standing stock as well as growing stock) and subject to an economic valuation.

Indicator 7.1.3: The FME shall undertake an assessment of the forest resource in the defined forest area in a periodic manner and compare the same with the replenishment/restocking rates for a healthy forest of similar ecological type. The extent of assessments is to be determined based on the size and intensity for forest management operations.

Criterion 7.2: The FME has established the total quantum of removable material that can be harvested for all extractable forest produce, which is defined as per standard independent assessment methodologies and/or established conventional practices.

Indicator 7.2.1: The FME shall determine the total quantum of forest produce that can be sustainably harvested from the defined forest area. The sustainable limits for each forest produce are accordingly provisioned in the management plan.

Indicator 7.2.2: The FME shall define and document independent assessment methodologies and/or conventional practices that has been used to determine the sustainable harvest limits for the forest produce, based on a combination of empirical data and published literature.

Indicator 7.2.3: In case of non-wood forest products, where it is difficult for the FME to define sustainable harvest limits, the FME shall define and implement sustainable harvest techniques for extraction, keeping in mind a conservative approach.

Criterion 7.3: The FME ensures that rates and extent of forest produce extraction is maintained at levels that are sustainable, and that annual removal of forest produce is well within the limits set for each individual forest resource (i.e., either wood or non-wood).

Indicator 7.3.1: The FME shall define the harvest rates for all merchantable forest produce in the management plan for the management cycle. The harvests are maintained at a sustainable level and the resource inventory shows an increasing trend, or, at the least, are maintained at present levels in future as well.

Indicator 7.3.2: For natural forest management operations, the average annual harvests, either by area, volume or mass, shall not exceed the annual removable harvest limits established through Criterion 7.2, and the limits prescribed under the Management Plan.

Indicator 7.3.3: For plantation management, the growth and harvest rates (for thinning and final harvests), shall be based on well-documented information and/or field trials, and consistent with the observed behaviour of the species at the national or regional level. In all cases, the upper limits specified under Criterion 7.2 shall be inviolable.

Criterion 7.4: Written guidelines regarding extraction of NWFPs (Non-Wood Forests Produce) are developed and records for the same maintained and monitored by the FME.

Indicator 7.4.1: The FME shall document guidelines for the extraction and removal of NWFPs in the management plan. The guidelines include those related to the nature of harvest/collection, fallow periods, safe levels of sustainable harvest and the intensity and frequency of harvest.

Indicator 7.4.2: The FME shall maintain records of the harvest/collection of NWFPs, including intensity and frequency of harvests, nature and type of extraction, harvested quantities and area of harvest.

Indicator 7.4.3: Harvest/collection records should be utilized by the FME for deciding subsequent harvests levels by incorporating the monitoring and inventory data to calculate a conservative harvest rate as determined by the provisions of Criterion 7.3.

Principle 8: Benefits from Forests

Criterion 8.1: The FME strives towards sound and long term economic viability of forest management operations ensuring that the investments and practices necessary to maintain and improve the forest productivity are in place, while also accounting for the ecological, social and operational costs of production. (For forests managed primarily with a social mandate, or with a conservation approach, the relevant portions of the indicators dealing with economic viability of the enterprise will not be applicable).

Indicator 8.1.1: The FME shall undertake short, medium and long term budgeting of its activities to include all income as well as costs associated with the forest management operations. The financial viability of the enterprise is clearly brought out in the economic model, at least in the long run, considering all social, ecological and operational costs.

Indicator 8.1.2: The FME should have sufficient financial resources to ensure adequate investments in capital, machinery and human resources to implement the provisions of the management plan as per the budget decided in Indicator 8.1.1.

Indicator 8.1.3: The FME shall undertake a periodic review (atleast once during the validity of the certificate) of its management activities, including income generating activities as well as present and proposed investments, to ensure that the economic sustainability of the FME is maintained in the long term.

Criterion 8.2: The FME ensures that management practices and decisions encourage the optimal utilization of forest resources, with emphasis on local value addition and processing, and strengthening of the local economy.

Indicator 8.2.1: The FME should strive to establish a diversified economy based on sustainable use of various wood and non-wood forest products.

Indicator 8.2.2.: The FME should promote traditional management systems where economically feasible, along with planned management activities, to encourage the optimal use of forest resources.

Indicator 8.2.3: The FME shall encourage local and/or downstream processing of wood and non-wood forest products to increase the value and diversity of commercial products derived from the forest subject to cost considerations.

Criterion 8.3: The FME ensures minimal damage to forest growing stock and other forest resources during forest management operations, including harvesting, extraction and processing. This includes post-harvest waste, harvest residue and culling/removal of non-commercial material from the forest.

Indicator 8.3.1: The FME shall ensure that harvesting operations minimize wastage and damage to standing stock.

Indicator 8.3.2: Yarding, log landing/log stacking and log sorting operations shall be designed to be of minimum number and size, to avoid or restrict the environmental impacts and reduce product wastage.

Indicator 8.3.3: The FME shall have written field guidelines for retention of harvest residue (lops and tops, limbs, slash etc.) as well as other biomass on site while considering economic, social and environmental factors (e.g. organic and nutrient value to future forests and the increased combustible fuel load build-up in forests).

Indicator 8.3.4: The FME may explore alternative markets for its produce including underutilized species as well as wood of lower and/or non-commercial grades.

Indicator 8.3.5: The FME should ensure that regeneration after harvests is timely and successful, and in a manner which restores the vitality of the forest resource prior to subsequent harvests.

Criterion 8.4: The FME operations recognize, maintain, and where appropriate, enhance the value of forest ecosystem functions, services and resources. The operations are regulated, monitored and controlled by the FME, as per the prevailing legal /regulatory framework and considering the ecological carrying capacity of the defined forest area.

Indicator 8.4.1: The FME shall identify and document the full spectrum of ecosystem services associated with the landscape and demonstrates an awareness of and sensitivity to non-wood forest services, which may or may not be income generating.

Indicators 8.4.2: The forest management activities should be designed and implemented, spatially and temporally, with due consideration to their impacts on forest services.

Indicator 8.4.3: The FME shall engage in regular dialogue with stakeholders that are subject to impact from forest operations.

Indicator 8.4.4: The FME may maximise the use of forest resources and services, by undertaking various approaches like REDD+, Payments for Ecosystem Services etc., subject to considerations of sustainability of forest resources and the prevailing regulatory framework.

THEME E: SOCIALLY RESPONSIBLE FOREST MANAGEMENT - SOCIAL AND COMMUNITY RIGHTS AND RELATIONS

The theme deals with matters pertaining to rights, concessions and privileges, and issues related to tribals, local communities, forest dwellers and forest workers. It includes provisioning by the FME for a safe working environment, written policies and guidelines covering all aspects of workplace health and safety, training of forest workers in health and safety, and use of safety equipment. Other issues addressed by the theme include rights of workers to form unions and collectively bargain, no discrimination among workers based on caste, religion, sex, age, bar on employment of children below 14 years of age etc. Further, this theme also addresses the rights of local communities on the forest resource, along with utilization of these rights and use of their traditional knowledge after obtaining Free, Prior and Informed Consent (FPIC), and compensation for any inadvertent loss of or negative impacts which occur because of management activity, and which has not been covered sufficiently by legal safeguards. Along with permanent, temporary and contract workers, this theme also addresses the rights of self-employed as well as piece rated workers (who are most predominant in the Indian context).

Principle 9: Community rights and relations – Forest management operations recognize the rights of local communities, forest dwellers and indigenous people/tribals and maintain and enhance their long term social and economic well-being.

Criterion 9.1: The FME recognizes and respects the rights of forest dwellers, tribals and other forest dependent communities.

Indicator 9.1.1: The FME shall identify and document the various forest dweller groups, tribals and local communities associated with the forest area in the scope of the certificate.

Indicator 9.1.2: The FME shall assess and document the rights of forest dwellers, tribals and local communities in the forest area and respects and recognizes these rights.

Indicator 9.1.3: The FME shall have a written commitment, signed by the top management of the FME, that it recognizes and respects the rights of forest dwellers, tribals and local communities.

Indicator 9.1.4: Any complaints or grievances related to infringement of rights of forest dwellers, tribals and local communities shall be recorded and addressed by the FME on a priority basis.

Criterion 9.2: The FME identifies and provides opportunities for employment, training and other social services to the forest dwellers, tribals and local communities.

Indicator 9.2.1: The FME shall provide opportunities of employment, training and other social services to the forest dwellers, tribals and local communities.

Indicator 9.2.2: The FME shall contribute to developing training programs to enhance the skill sets and capabilities of the local communities and tribals and undertakes discussions with representatives of local communities about the identification of opportunities in employment, contracting, trading and value addition.

Criterion 9.3: Traditional knowledge of forest dwellers*(to be read in conjunction with local communities and tribals) regarding the use of forest species or traditional management systems is acknowledged and documented and any use of such knowledge in forest operations is fairly compensated. The compensation for the same shall be formally agreed upon with their free, prior and informed consent before the commencement of forest operations.

Indicator 9.3.1: Any use of traditional knowledge of forest dwellers in forest operations w.r.t use of forest species, management systems or forest products and services shall be documented by the FME.

Indicator 9.3.2: Appropriate mechanisms for providing a fair compensation for the commercial utilization of traditional forest-related knowledge and practices of forest dwellers in accordance with existing legislation or by agreement shall be established by the FME.

Indicator 9.3.3: The norms and mechanisms for such compensation, as devised in indicator 9.3.2, shall be formally agreed upon with the free, prior and informed consent of the forest dwellers before commencement of operations.

Criterion 9.4: The FME uses the results of the identified social impacts of its management activities to guide future planning, including expansion of activities and/or intensification/consolidation. As part of the process of the impact assessment, the FME undertakes culturally appropriate stakeholder consultations based on FPIC, records the inputs received during the stakeholder consultation and actively endeavours to mitigate any concerns raised by the relevant stakeholders at the planning stage of such activities, i.e. before implementation.

Indicator 9.4.1: The FME shall undertake independent assessments of the social impacts of management activities (based on the scale and intensity of forest management operations as well as the risks associated with the same) related to its forest management activities.

Indicator 9.4.2: The assessments shall be undertaken periodically, at least once during the lifespan of the certificate, or more frequently as appropriate to the scale of forest management operations and major changes in the forest resource or management activities.

Indicator 9.4.3: A stakeholder engagement process, based on Free, Prior Informed Consent shall be undertaken by the FME as part of the impact assessment process. The consultation process shall record and update the list of stakeholders, the consultation process and also documents the comments and concerns of the stakeholders.

Indicator 9.4.4: The FME should initiate all steps to actively mitigate the concerns of stakeholders and demonstrate the use of the results of the impact assessment in planning activities, including the present scope of operations as well as in cases of expansion/intensification/consolidation of operations or cessation of activities.

Criterion 9.5: The FME ensures that forest management operations do not threaten or diminish, either directly or indirectly, the resources and rights of the local dependent population and puts in place mechanisms to address and resolve any grievances raised by local communities or other stakeholders regarding these operations. In cases where forest management operations lead to

an inadvertent loss or damage to property, resources, livelihood or rights of local communities, especially tribals, such losses or damages are addressed through the provisions of legal recourse, as applicable. In addition to the compensation provided as per the legal framework, and especially in cases where compensation for such loss is not covered by legal frameworks, the FME undertakes appropriate and documented procedures, mutually agreed upon through FPIC with the affected parties, for resolving these grievances and providing a fair, equitable outcome to these affected parties.

Indicator 9.5.1: The FME shall ensure that forest management operations (in forests vested with rights) do not threaten or diminish, either directly or indirectly, the resources and rights of the local communities, forest dwellers and tribals. Appropriate measures shall be taken to avoid the loss of or damage to the legal right, property, resources, or livelihood of local communities, tribals or other forest dwellers.

Indicator 9.5.2: Where evidence exists that the resources and rights of local communities, forest dwellers and tribals has been violated by forest management operations, the FME shall undertake steps to resolve this violation, and document the steps followed.

Indicator 9.5.3: The FME shall record all instances of damage to resources and rights, including any grievances/complaints in this regard, as well as the list of affected parties.

Indicator 9.5.4: In cases of loss or damage to property, resources, livelihood or rights of local communities, tribals and forest dwellers, the issue shall be addressed through the provisions of legal recourse, as applicable.

Indicator 9.5.5: In cases where compensation for such loss is not covered by legal frameworks, the FME shall undertake appropriate and documented procedures, mutually agreed upon through FPIC with the affected parties, for resolving these grievances and providing a fair, equitable outcome to these affected parties.

Indicator 9.5.6: The FME shall have written procedures for calculating and providing a fair, equitable compensation for such damages, based on an assessment into the type, severity, scale and intensity of loss or negative impact as well as consultation with local communities, undertaken through an FPIC process.

Criterion 9.6: Sites of special cultural, spiritual, heritage, religious, ecological, or economic, significance to forest dependent communities are clearly identified in cooperation with such people, and recognized and protected by the FME. The rights of indigenous/local communities to protect such sites is recognized and respected by the FME.

Indicator 9.6.1: The FME, with the participation of forest communities and other stakeholders, shall identify, map and where possible demarcate on ground, the sites of special cultural, ecological, economic or religious significance to forest dependent communities.

Indicator 9.6.2: The management plan shall contain written policies for the identification and protection of such sites of special significance and FME staff shall be appropriately trained in protection of such sites.

Indicator 9.6.3: Findings of special sites of archaeological interest are communicated to the appropriate authorities and the FME shall abide by the restrictions on use imposed by these authorities for said areas.

Indicator 9.6.4: The FME shall recognize and respect the rights of indigenous/local communities to protect and manage sites of special cultural, ecological, economic, recreational, heritage or religious significance and allows adequate access to these sites to the communities taking into account respect for ownership rights and the rights of others, the effects on forest resources and ecosystems, as well as compatibility with other functions of the forest..

Principle 10: Workers rights – including permanent, temporary and contract workers at all levels

Criterion 10.1: FME meets or exceeds all applicable laws and/or regulations covering health and safety of employees and their families.

Indicator 10.1.1: The FME shall foster a safe working environment by:

- a. Complying with all relevant workplace health and safety laws;
- b. Facilitating improvements in workplace health and safety;
- c. Identifying associated health and safety risk and adopting working conditions that do not endanger health or safety
- d. Consulting with forest workers and their representatives on workplace health and safety.

Indicator 10.1.2: The FME shall have written guidelines and policies, appropriate to the scale of operations for workplace health and safety and the same are publicly available.

Indicator 10.1.3: The FME shall maintain up-to-date information on pertinent health and safety laws and regulations disseminates this information to forest workers.

Indicator 10.1.4: The FME shall maintain up-to-date accident/workplace injury/safety records; These records are updated to reflect type and nature of accident, cause and palliative action undertaken.

Indicator 10.1.5: Appropriate safety equipment shall be made available to all forest workers; forest workers use safety equipment appropriately and demonstrate proper management and harvest techniques.

Indicator 10.1.6: The FME shall establish a grievance redressal mechanism for complaints related to poor or inadequate working conditions.

Indicator 10.1.7: The FME shall establish and implement, the relevant provisions of the Workman's Compensation Act, 1923, as the minimum requirement for compensation for any occupational injuries or workspace related injuries.

Criterion 10.2: The FME respects and implements all applicable International Labour Organization (ILO) Conventions covered in the ILO's Declaration of Fundamental Principles and Rights at Work (1998) .

Indicator 10.2.1: The FME shall respect and implement all applicable ILO Conventions that India has ratified, including,

- a. Provisions for workers to freely organize into trade unions of their own choice in accordance with ILO Convention No. 87
- b. Provisions for workers to organize and undertake collective bargaining leading to agreements in accordance with ILO Convention No. 98 – The Right to Organize and Collective Bargaining Convention, 1949 - Articles 1 and 2
- c. ILO Convention No. 111 – Discrimination (Employment and Occupation), 1958 – The Right to Equal Treatment
- d. ILO Convention No. 100 – Equal Remuneration, 1951 - The Right to Equal Pay

Indicator 10.2.2: The right of workers to benefits and protection as guaranteed under applicable laws and/or regulations shall be assured and provided for by the FME.

Indicator 10.2.3: Documented procedures to address grievances/disputes raised by workers and/or their organizations and for conflict resolution shall be established by the FME.

Indicator 10.2.4: The dispute resolution process shall recognize, at a minimum, the following types of conflict/dispute, and shall develop appropriate procedures (based on the scale, spread and complexity of the organization, nature of worker roles, and intensity of conflict) to address the same.

- a. Between workers and management
- b. Between workers or groups of workers and/or unions
- c. Between workers/management and external agencies

Criterion 10.3: Written guidelines are prepared, in accordance with relevant Indian labour laws, rules and regulations, for recruitment, promotion, dismissal, remuneration and benefits for permanent, temporary and contract workers. The FME does not negatively discriminate among employees on the basis on caste, religion, gender, age etc.

Indicator 10.3.1: The FME shall have written guidelines, in accordance with relevant Indian labour laws, rules and regulations regarding recruitment, promotion, dismissal, remuneration and benefits for permanent, temporary and contract workers employed by the FME.

Indicator 10.3.2: The FME shall communicate the working hours, wage rates, salaries and benefits to be provided to the workers and obtain written documentation regarding their acquiescence to the same before the engagement of workers in field duties. In cases where such rights are not legally covered, the FME shall identify and put in place provisions as per industry best practices.

Indicator 10.3.3: The FME shall not discriminate among employees/workers based on caste, religion, gender, age, region etc.

Indicator 10.3.4: The FME shall not permit the hiring or contracting of workers less than 14 years of age.

Indicator 10.3.5: All workers shall be paid the legal minimum wage rates; which shall be derived as applicable from one of the following wage schedules, whichever is higher:

- a. Minimum wages as designated by the Minimum Wages Act, 1948
- b. State specific Daily Minimum Wage Rates
- c. MGNREGA state specific daily wage rates
- d. Industry recognized wage agreements in consultation with workers' representatives

Indicator 10.3.6: The FME shall appoint an officer of sufficient rank within its management, to independently investigate any complaints raised by workers related to violations of the provisions of this criterion.

Criterion 10.4: Appropriate to the scale and intensity of forest management operations, the FME undertakes training of forest workers for proper implementation of the management plan.

Indicator 10.4.1: The FME shall establish a documented training program for its workers for proper implementation of the management plan.

Indicator 10.4.2: All the FME employees shall be trained in the proper implementation of the management plan. The FME maintains all records of these trainings.

Indicator 10.4.3: The FME should ensure the use and access to adequate safety equipment by all the employees during the implementation of the forest management operations. Appropriate training of usage of such equipment and chemicals is provided to all including safety training/usage training

Indicator 10.4.4: The FME shall provide opportunities for employment and training to forest dependent communities, including tribals in the proper implementation of the management plan. The FME contributes to or directly develops training programs designed to enhance the capabilities and qualifications of local workers.

Indicator 10.4.5: The FME shall identify, in consultation with workers' representatives and local communities, opportunities for training and upskilling of workers to provide them opportunities for improving their economic well-being.

THEME F: ECOLOGICAL INTEGRITY AND HEALTH OF FORESTS– CONSERVATION AND MANAGEMENT

The theme deals with issues of natural resource management and conservation of resources of high conservation and biodiversity values. This theme also looks at ecosystem health and vitality, and maintenance and conservation of diversity within the FME –at genetic, species, landscape and ecosystem levels. Conservation areas not only include areas with high levels of species density or biodiversity, but also areas which serve critical ecological functions as well as areas serving as a cultural heritage to the local people in addition to specific conservation attributes like the uniqueness of the resource and its replaceability/survival for future generations. The theme also considers various types of ecosystem services associated with a functioning forest, including provisioning services, regulatory services, cultural services and supporting services, many of which may not be tangible, but whose loss would affect the ecological balance of the system.

Principle 11: Ecology, biodiversity and Natural Resource Management – Conservation, Enhancement and Rehabilitation

Criterion 11.1: The FME undertakes forest management operations in a manner that maintains the natural features of forest ecosystems, conserves biodiversity, protects water resources, prevents land degradation and restores degraded areas. Representative samples of existing ecosystems within the landscape are protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.

Indicator 11.1.1: The FME shall identify, record and protect representative samples of existing ecosystems within the regional landscape, both within and wherever possible, outside of the FMU.

Indicator 11.1.2: The FME shall collect and review information regarding the nature, extent and composition of representative landscapes and where possible, include them in the management plan.

Indicator 11.1.3: Representative samples of existing ecosystems within the FMU shall be delineated on maps designated as such on the ground, and conservation practices and policies included in the management plan. Where existing legal measures to conserve these landscapes are insufficient, the FME shall take actions to assist in the protection of such areas.

Indicator 11.1.4: Rare, threatened and endangered species and their habitats or distribution areas within the FMU shall be identified, demarcated as protection zones and marked on maps.

Indicator 11.1.5: If it is not practically possible to clearly map the protection zones and biological corridors in an FMU, or in the surrounding landscape, then the FME shall ensure that adequate areas are retained for each forest type, keeping in mind general areas of occurrence and wildlife migration patterns in the forest.

Indicator 11.1.6: Specific protective measures shall be implemented when carrying out forest management activities to maintain protected areas, protected species and their habitats.

Indicator 11.1.7: The FME shall periodically (based on the scale and intensity of forest management operations and extent of forest resource, but at least once during the management plan cycle) monitor key biotic and abiotic factors that potentially affect health and vitality of forest ecosystems, such as pests, diseases, overgrazing and overstocking, fire, and damage caused by climatic factors, air pollutants or by forest management operations.

Indicator 11.1.8: The FME should promote afforestation and reforestation activities that contribute to the improvement and restoration of ecological health, with a preference for natural regeneration of native species over artificial regeneration, with a target of achieving stem density levels of well stocked forests of similar forest type.

Indicator 11.1.9: When new plantation blocks are being raised, the scale and extent of the plantations are should be consistent with the patterns of natural forest stands within the landscape, including species mix and diversity.

Indicator 11.1.10: Diversity should be introduced in plantations, wherever possible, by introducing a mix of species, provenances, clones, age classes and/or rotations, depending on the management objectives, as well as the scale and extent of the plantations.

Criterion 11.2: The FME considers the impacts of its management activities on the forest areas' biodiversity and ecological functions and undertakes rehabilitation/restoration of ecological functions/values that may have been damaged/degraded due to past management activities.

Indicator 11.2.1: The FME shall undertake independent assessments of the environmental impact of management operations in the FMUs, suitable to the scale, size and complexity, prior to planned operations and any major management interventions.

Indicator 11.2.2: The impact assessments shall be undertaken at an FMU level as well as at a landscape level, to understand the cumulative effects of forest operations.

Indicator 11.2.3: The FME shall identify, map and undertake consultations with all stakeholders who can be potentially affected by their management activities.

Indicator 11.2.4: Management activities shall be designed and, where needed, modified, based upon the results of the impact assessments. Forest operations shall be adopted to minimize the impact of forest management on the environment and to avoid the degradation of and damage to forest ecosystems.

Indicator 11.2.5: The cumulative effects of the social and environmental impacts of planned forest management activities on the forest resources and ecological functions, as well as on the lives and livelihood of forest dwellers and forest based communities shall be considered before initiation of operations.

Indicator 11.2.6: The FME shall ensure that no damage to forests occur because of site disturbing activities like land preparation, tending, harvesting, road construction etc. and the natural features of the soil and its long-time productivity in the forest are maintained.

Indicator 11.2.7: Where damage/degradation of the forest has occurred due to past management activities, the FME shall initiate steps to regenerate the forest and restore the ecological functions and values to a natural state which is typical to the locality.

Indicator 11.2.8: The FME shall take steps to ensure that quality and quantity of water resources are protected and soil and water erosion minimized by

- a. Establishing buffer zones to conserve water and soil at the banks of rivers and streams or around water bodies; these buffer zones are marked on the FMU maps.
- b. Avoiding damage to catchments within and outside the forests
- c. Control of any soil disturbing activities in areas with slope greater than 30°

- d. Ensuring adequate vegetation cover using native vegetation or cover crops on clear felled or recently cleared areas within the annual cycle, and as per the prescriptions of the management plan.

Criterion 11.3: The FME ensures that all use of chemical pesticides and fertilizers shall be strictly controlled under management supervision and within the pre-defined parameters of an approved Integrated Pest Management (IPM) and Integrated Nutrient Management (INM), with an aim to progressively reduce their use over time.

Indicator 11.3.1: All chemical pesticide usage in nurseries, FMUs or processing facilities shall occur within the context of an integrated pest management program. Chemical pesticides are only used when non-chemical management has been proven ineffective.

Indicator 11.3.2: The FME shall demonstrate, through its policies and actions, a commitment to reduce the dependence on chemical pesticides and fungicides and progressively increase the dependence on biological, silvicultural and other non-chemical mechanisms for pest and disease control.

Indicator 11.3.3: Where the use of chemical pesticides is unavoidable, due to a lack of an alternative pest management mechanism, the FME shall

- a. maintains a complete list of chemical pesticides used;
- b. maintains records of all pesticides used, including the name of the product and active ingredient(s), location and method of application, total quantity applied, and the dates of application;
- c. complies with all safety regulations during the transport, manipulation, application, and storage of chemical pesticides;
- d. ensures that the pesticides are used in compliance with the instructions given by the pesticide user and all personnel are using appropriate equipment and safety gear to assure safe application;

Indicator 11.3.4: The FME shall ensure that

- a. Pesticides listed in the World Health Organization (WHO) type 1A and 1B are not be used in field or nursery operations,
- b. Pesticides banned under the Stockholm Convention on Persistent Organic Pollutants (2001) are not to be used in operations
- c. Chlorinated hydrocarbons and other pesticides that remain biologically active and accumulate in the food chain are be prohibited from use in the FMUs

Indicator 11.3.5: All use of chemical fertilizers shall occur within the ambit of an Integrated Nutrient Management (INM) plan, and the FME shall undertake a nutrient analysis of the area, before the use of any chemical fertilizers.

Indicator 11.3.6: The FME shall have written procedures regarding

- a. Safe use of chemicals,
- b. Use of safety equipment and Personal Protective Equipment (PPE).
- c. Emergency procedures for transportation, storage, use and accidental leaking of chemicals.
- d. Disposal of the inorganic rubbish, non-recyclable waste and empty containers in a way that will not endanger the environment.
- e. Prevention and control of any chemical spillage that occurs during forest operations in an environmentally benign manner.

Criterion 11.4: The use of biological control agents is within India's regulatory framework and documented, minimized, monitored and strictly controlled in accordance with internationally accepted scientific protocols. The FME maintains a precautionary approach towards the introduction and use of biological control agents. Use of genetically modified organisms shall be prohibited.

Indicator 11.4.1: The FME should not use any biological control agents within forest management operations, unless unavoidable.

Indicator 11.4.2: Any unavoidable use of biological control agents shall take place only when other methods of control have proved ineffective, and only under strict internationally accepted protocols for documentation, monitoring and control; and in compliance with applicable laws and regulations. The use of biological control agents shall be always with a precautionary approach.

Indicator 11.4.3: The use (defined as commercial use as well as for research purposes) of genetically modified organisms within the FMU shall not be permitted under any circumstances.

Criterion 11.5: Introduction of exotics in natural forest areas as well as plantations within natural forest areas within the FME is prohibited. In the case of farm forestry/ plantations outside natural forest areas/TOFs, the FME assesses the ecological impacts of the introduction of exotic species, and their introduction and propagation are strictly controlled, subject to protocols under applicable laws.

Indicator 11.5.1: The FME shall not permit the introduction of exotic species in natural forests. Introduction of exotics is permitted only in plantations and not in natural forests.

Indicator 11.5.2: Introduction of exotic species by the FME shall be undertaken only after a review of the ecological impacts of introduction and/or empirical or research data to support the introduction of the species. It needs to be proved that indigenous species are unable to meet the management objectives.

Indicator 11.5.3: The FME shall verify, through scientifically researched data, prior to introduction, that the proposed species do not adversely affect the environment and biodiversity of the region and are not invasive in the long run. Outcome of introduction of the proposed exotic species in similar eco-regions is also studied to understand the positive and negative implications of this introduction.

Indicator 11.5.4: In areas where previously introduced exotics have been found to be problematic and/or invasive in nature, the FME shall implement control measures. This includes, but is not limited to, phasing out of exotics from the region, promotion of indigenous species and permitting the indigenous species to regenerate and recapture the space from exotics.

Indicator 11.5.5: FME shall conduct periodic monitoring of the adaptability of exotic stands, as indicated by measured levels of mortality, disease and insect outbreaks.

Indicator 11.5.6: For all exotics used in plantations, the management plan, or any other suitable document, shall record the seed source and provenance or the clone details.

Criterion 11.6: The FME does not convert natural forests to plantations, nor natural forests or plantations to any other land use except when the conversion:

- a. occurs as per the specific provisions of the Forest (Conservation) Act, 1980, and
- b. affects a very limited portion of the area of the FMU, and
- c. Conversion shall not occur within high conservation value forest areas, threatened ecosystems, culturally and socially significant areas, or important habitats of threatened species.

It must be understood that these criteria are to be read together, and any diversion of natural forests or plantations by the FME for any purpose under the Forest (Conservation) Act, 1980 shall not contravene Criteria 11.6 (b) and (c) above. However, notwithstanding sub-sections 11.6 a), b) and c) above, no conversion post December, 1994 shall be considered for certification.

Indicator 11.6.1: Forest areas that have been converted (either from plantation to non-forest use or from natural forest to plantation or to non-forest use) since December 1994 and/or are scheduled for conversion shall be identified.

Indicator 11.6.2: No conversion to plantations or non-forest lands shall occur, except in circumstances where the conversion:

- a. Occurs as per the specific provisions of the Forest (Conservation) Act, 1980.
- b. Affects no more than 0.5% of the total area of the FMU in the current or any future year and does not result in a cumulative total area converted more than 5% of the FMU since December 1994; and
- c. Does not occur within or damage or threaten high conservation value forest areas, threatened ecosystems, culturally and socially significant areas, or important habitats of threatened species.
- d. includes contribution to long-term conservation, economic, and social benefits in case of forest conversion

Criterion 11.7: FMUs containing plantations that were established on areas converted from natural forest after December 1994 shall not qualify for certification, except where:

- a. clear and sufficient evidence is provided that the FME was not directly or indirectly responsible for the conversion, and
- b. the conversion affected a very limited portion of the area of the FMU, and
- c. clear, substantial, additional, secure long-term conservation benefits in the FMU are produced.
- d. Does not occur within or damage or threaten high conservation value forest areas, threatened ecosystems, culturally and socially significant areas, or important habitats of threatened species.

Indicator 11.7.1: Areas of plantations, their original establishment dates, and the prior status of the areas shall be identified.

Indicator 11.7.2: The FME shall have records of all approvals for forest conversion granted as per the provisions of the Forest (Conservation) Act, 1980. Any area within the scope of the certificate, which has been converted without clear and unambiguous approval under the FCA, 1980, shall render the certificate liable for termination.

Indicator 11.7.3: No areas have been converted from natural forest to plantation since December 1994 except where:

- a. The FME provides clear and sufficient evidence that it was not directly or indirectly responsible for the conversion; and
- b. The total area of plantation on sites converted from natural forest since December 1994 is less than 5% of the total area of the FMU, and
- c. The conversion will produce clear, substantial, additional, secure, long-term conservation benefits in the FMU.

Principle 12: Identification, Protection and Management of High Conservation Value Forests (HCVFs)/Special Sites for conservation

Criterion 12.1: The FME has identified and classified the High Conservation Values (HCV) attributes/special sites for conservation in the Forest Management Unit, appropriate to the scale and intensity of forest management, and manages them in a manner appropriate for their unique features.

Indicator 12.1.1: The FME shall undertake periodic evaluation to identify High Conservation Values (HCV) attributes present in the FMUs, depending on the scale of the forest resource as well as the intensity and severity of forest management operations, which includes:

- a. Known sites of flora and fauna associated with viable occurrences of critically endangered and endangered species and communities
- b. Typical, rare, sensitive and protected forest ecosystems
- c. Globally, regionally and nationally significant landscape areas with natural distribution area and landscape area of species.
- d. Sacred and culturally important sites
- e. Sites of critical ecological importance

Indicator 12.1.2: This evaluation, at a minimum, shall include:

- a. Consultation of regional or national conservation databases and maps;
- b. Consultation of the national HCVF toolkit, if it exists, or the first and third parts of the international toolkit for HCV presence (see HCVF Toolkit by WWF);
- c. Consideration of forest inventory data and observations from field workers, contractors or consultants of the FME;
- d. Interviews with biologist and scientific experts, local communities, and other stakeholders;
- e. Identification and documentation of possible threats to HCVs.

Indicator 12.1.3: The stakeholder consultation shall be through a documented FPIC process and the FME shall maintain a list of all concerned stakeholders.

Indicator 12.1.4: The consultation process should include identification of the conservation attributes of the area, along with proposed strategies for their maintenance, enhancement and/or reduction of threats.

Indicator 12.1.5: The FME shall provide a written evaluation for HCVs and proposals to protect these HCVs in the FME's management strategies. This may include development of plans for protection, independently or collaboratively, with cooperation with other stakeholders.

Criterion 12.2: The management plan includes specific measures that ensure the maintenance and/or enhancement of the applicable conservation attributes consistent with the precautionary approach. These measures are specifically included in the publicly available management plan summary.

Indicator 12.2.1: The FME, in the management plan and its public summary, shall describe the conservation values of each area of HCV identified in the FMU, as well as the actions taken to maintain and/or enhance these values.

Indicator 12.2.2: The FME shall specify an adequate and economically realistic time period for the periodic update of the public summary of areas of HCV, appropriate to the scale and intensity of operations.

Indicator 12.2.3: The FME shall provide evidence that it implements measures to maintain and/or enhance HCVs, consistent with a precautionary approach.

Criterion 12.3: Annual monitoring is conducted to assess the effectiveness of the measures employed to maintain or enhance the applicable conservation attributes. Based on the results of the monitoring indicators, the FME adapts its management practices as necessary for improvement.

Indicator 12.3.1: Appropriate to the scale of and intensity of operations, annual monitoring shall be conducted by the FME, that focuses on the effectiveness by which HCVF management and protection measures are maintaining and/or enhancing the pertinent conservation attributes.

Indicator 12.3.2: The FME shall develop measurable monitoring indicators to track the progress of the HCVF management and protection measures that have been developed by the FME and implemented in the field.

Indicator 12.3.3: The results of HCVF monitoring shall be used adaptively in modifying HCVF management and protection policies, as well in revising the management plan.

Principle 13: Forest ecosystem services – identifying, quantifying and valuation of both tangible and non-tangible ecosystem services

Criterion 13.1: The FME identifies all ecosystem services and functions associated with the forest area, including, among others, forest regeneration and succession, genetic, species and ecosystem diversity, ecosystem processes, conditions and productivity, protection from soil erosion, protection of water resources and protection from adverse water impacts like floods, drought etc.

Indicator 13.1.1: The FME shall identify and document, to the extent possible, the full range of ecosystem services and functions associated with the forest area, including, forest regeneration and succession,

genetic, species and ecosystem diversity, ecosystem processes, conditions and productivity, protection from soil erosion, recreation and tourism, protection of water resources and protection from adverse water impacts like floods, drought, etc.

Indicator 13.1.2: The FME should identify the ecosystem services attributable to the FME (as defined by the Millennium Ecosystem Assessment, 2006):

- a. Provisioning services: includes products obtained from ecosystems viz., food, raw materials, genetic resources, water, minerals, medicinal plants etc.
- b. Regulating services: includes benefits obtained from ecosystem services viz., carbon sequestration, climate regulation, waste decomposition and detoxification, air and water purification, pest and disease control etc.
- c. Cultural services: includes nonmaterial benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences
- d. Supporting services: includes services "that are necessary to produce all other ecosystem services". These include services such as nutrient recycling, primary production and soil formation. These services make it possible for the ecosystems to provide services such as food supply, flood regulation and water purification.

Indicator 13.1.3: All threats to the continued existence of these services should be identified and suitable measures, wherever possible, to mitigate such threats put in place.

Indicator 13.1.4: Known ecological functions and values are described in the management plan and updated periodically as additional information/knowledge is acquired; the FME shall take affirmative steps to eliminate gaps in information and knowledge about ecological functions within the management unit.

Indicator 13.1.5: Forest management activities shall be designed and implemented, spatially and temporally, with due consideration to the impacts on the ecosystem services.

Indicator 13.1.6: The FME should demonstrate an awareness of non-income generating ecosystem services, and engage in dialogue with stakeholders who are dependent on these services and may be potentially affected by forestry operations.

Criterion 13.2: The FME has written guidelines for protection of soil and water resources, and appropriate soil and moisture conservation measures to maintain and enhance the soil characteristics and quality of water (ground water and surface water). Further, measures to control soil erosion, run off etc. shall also be established, including, but not restricted to, stream buffer zones, road and drainage construction guidelines, slope harvest guidelines etc.

Indicator 13.2.1: The FME shall have written guidelines for the protection of water resources and water quality protection and minimization of soil erosion because of site disturbing activities. These guidelines shall be in conformance to any legal requirements in place.

Indicator 13.2.2: All forest operations shall be designed to minimize adverse changes to water quality (physical, chemical or biological) with the objectives of:

- a. minimizing transport of soil into waterways;
- b. maintaining streamside management zones; and
- c. specifying the buffer zone from water bodies.

Indicator 13.2.3: All stream courses passing through the FMUs shall be identified and demarcated on maps.

Indicator 13.2.4: Soil types within the forest area are shall be mapped and taken into consideration while undertaking forest operations. All forest operations are managed to protect and maintain the physical, chemical and biological properties of soil and improve them where appropriate and reasonably practicable.

Indicator 13.2.5: The FME shall specify the maximum extent of slope beyond which no felling or harvest is permitted. Under no circumstances should the permissible slope extend beyond 35 degrees.

Indicator 13.2.6: The FME shall have written guidelines for the construction, maintenance and closure of drains and roads ensuring efficient delivery of goods and services while minimising negative impacts on the environment. within the FMUs . These guidelines should, at a minimum, conform to the state forest department and/or Public Works Department guidelines.

Principle 14: Biodiversity conservation -- including measures for conservation and maintenance and rehabilitation of losses to biodiversity values arising out of management activities or occurring within the FME

Criterion 14.1: The FME has written guidelines for the maintenance, conservation and enhancement of biological diversity (ecosystem/landscape/species/genetic diversity) within the forest areas and strengthen the ecological integrity of the FMU.

Indicator 14.1.1: The FME shall have written guidelines for the maintenance, conservation and enhancement of biological diversity (ecosystem/landscape/species/genetic diversity)

Indicator 14.1.2: The FME should incorporate the conservation of native biological diversity, including species, wildlife habitats and ecological community types at stand and landscape levels into its management activities.

Indicator 14.1.3: Subject to the scale of operations, the FME shall undertake forest management operations in such a manner to maintain a full range of successional stages at distributions within the range of natural variability and restore the natural forest composition over time.

Indicator 14.1.4 Forest management practices, where appropriate, shall promote a diversity of both horizontal and vertical structures such as uneven-aged stands and the diversity of species such as mixed stands. Where appropriate, the practices also aim to maintain and restore landscape diversity.

Indicator 14.1.5: The FME, in its practices, shall be guided by regionally based best scientific information, to retain stand-level wildlife habitat elements such as snags, stumps, downed woody debris and nest trees.

Indicator 14.1.6: Any non-forested wetlands/grasslands and its constituent elements, which are found associated with the forest area (both within and in the periphery) shall be protected and demarcated on maps.

Indicator 14.1.7: The FME shall participate in and/or incorporate the results of state, central, or regional conservation planning and priority-setting efforts to conserve biological diversity and consider these efforts in forest management planning. Examples of credible priority-setting efforts include state wildlife action plans, state forest action plans, relevant habitat conservation plans or wildlife recovery plans (e.g. Project Tiger, Project Elephant etc.).

Criterion 14.2: The FME undertakes an assessment of the rare, threatened, endemic and endangered species and their habitats occurring within the defined forest area along with a listing of species prone to overexploitation in the forest area. Safeguards exist which protect rare, threatened and endangered species and their habitats. The FME has established conservation zones and protection areas, appropriate to the uniqueness of the affected resources and the scale and intensity of forest management.

Indicator 14.2.1: The FME shall undertake an assessment of the rare, threatened, endemic and endangered species and their habitats within the FMU along with a listing of species prone to overexploitation in the forest area.

Indicator 14.2.2: Management guidelines to identify and protect endangered, endemic, rare and threatened species of forest flora and fauna, including features of special biological interest and representative conservation and protection areas, in accordance with existing forest ecosystems, appropriate to the scale and intensity of forest management shall be established and documented by the FME.

Indicator 14.2.3: The FME shall ensure that forest workers are aware of endangered, endemic, rare and threatened species of forest flora and fauna found in the FMU and are trained in the conservation of the same.

Criterion 14.3: The FME measures the biodiversity values of the forest area using scientifically based monitoring methodology developed in consultation with stakeholders and relevant experts, to determine if values are being maintained or enhanced within the defined forest area. Further, the FME shall assess the possible impact of forest management operations on biodiversity and adopt an appropriate management strategy to ensure that biodiversity losses do not occur, through utilization of the following hierarchy viz.,

- a. Avoidance of impact
- b. Minimization of impact
- c. Restoration/Rehabilitation of biodiversity attributes
- d. Additional Conservation Actions

Indicator 14.3.1: The FME should undertake a biodiversity assessment of the forest area, with the involvement of all relevant stakeholders, using the scientifically accepted assessment methodology suitable for the forest area.

Indicator 14.3.2: The FME should document the diversity of forest cover types and age or size classes at the FMU, and where credible data are available, at the landscape scale.

Indicator 14.3.3.: Standing and fallen dead wood, hollow trees, old groves and special rare tree species shall be retained in the FMUs, as much as possible in quantities and distribution necessary to safeguard biodiversity (while accounting for the potential effect on the health and stability of the forest and on surrounding ecosystems).

Indicator 14.3.4: Management practices should make best use of natural structures and processes to maintain and enhance the health and vitality of forests. Adequate genetic, species and structural diversity is

encouraged and/or maintained to enhance the stability, vitality and resistance capacity of the forests to adverse environmental factors and strengthen natural regulation mechanisms.

Indicator 14.3.5: The impacts of forest management operations on biodiversity levels in the FMU shall be assessed to determine whether the operations maintain, diminish or enhance the biodiversity attributes of the forest area.

Indicator 14.3.6: If there is a net negative impact of forest operations on the biodiversity attributes, either inadvertently, or due to unavoidable reasons (to be determined by the certification body) the FME shall mitigate the negative impacts, based on severity of impact, by utilization of the following hierarchy viz.,

- a. Avoidance of impact
- b. Minimization of impact
- c. Restoration/Rehabilitation of biodiversity attributes
- d. Additional Conservation Actions

Annex - Terms and Definitions

The Annex was adopted by the Governing Body of the NCCF on 9th September.2017. It defines the basic and fundamental terms relating to forest certification and in particular to NCCF SFM certification standard.

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Glossary

Adaptive Management

A systematic process for continually improving management plan and practices by learning from the outcomes of previously implemented plans and practices. (Source: *Millennium Ecosystem Assessment*)

Additional Conservation Actions

A broad range of activities which are intended to benefit biodiversity, but whose effects, or outcomes can be difficult to quantify. (Source: *Rio Tinto and Biodiversity: Biodiversity Offset Design*)

For example: helping to build capacity in conservation organisations to enable better biodiversity conservation outcomes on projects they are involved with. This might include supporting their participation in environmental management and development programmes.

Annual Allowable Cut (AAC)

The sustainably permissible levels of harvest/removal of any forest produce, either by volume or weight, ensuring that the rate of harvest does not exceed the calculated rate of long term regeneration and growth.

Avoidance of Impact

Avoidance involves a decision to change the expected or normal course of action. Activities that change or stop actions before they take place, in order to prevent their expected negative impacts on biodiversity and decrease the overall potential impact of an operation. (Source: *World Business Council for Sustainable Development Business Ecosystem Training Glossary of Terms and Acronyms and Fauna & Flora International's The Mitigation Hierarchy*)

Binding Agreement

A deal or pact, written or not, which is compulsory that it fulfils the requirements of the Section 10 of the Indian Contract Act, 1872 to its signatories and enforceable by law. Parties involved in the agreement do so freely and accept it voluntarily.

also

In context of international agreements or multilateral environmental agreements the ones to which India has ratified or acceded.

Biological Diversity (Biodiversity)

The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. There are three interrelated hierarchical levels of biodiversity: (a) Genetic diversity (b) Species diversity and (c) Ecosystem or Community diversity (Source: *Convention on Biological Diversity*)

Biodiversity Attributes

Composition, Structure and Functions are the three primary attributes of biodiversity which are explained as follows:

a) Composition is the identity and variety of an ecological system. Descriptors of composition are typically lists of the species resident in an area or an ecosystem and measures of composition include species richness and diversity of species.

b) Structure is the physical organization or pattern of a system, from habitat complexity as measured within communities to the pattern of habitats (or patches) and other elements at a landscape scale.

c) Functions are the result of one or more ecological and evolutionary processes, including predation, gene flow, natural disturbances and mycorrhizal associations as well as abiotic processes such as soil development and hydrological cycles. Examples of functions include predator-prey systems, water purifications and nutrient cycling.

Each of these attributes is multi-scalar and incorporates both spatial and temporal dynamics. As a result, these attributes may also be examined at different scales including regions, landscapes and ecosystems. (Source: *Ecological Concepts, Principles and Applications to Conservation, 2008, Biodiversity BC*)

Biological Control Agents

Living organisms used to eliminate or regulate the population of pests such as insects, mites, weeds and plant diseases using other living organisms. (Source: *IUCN*)

Biological Corridors

Transit corridors in forest areas or connecting forest areas which exist naturally or were created over an extended period of time, which act as the preferred route for movement of wild animals, either for migration, or for foraging and hunting, over a period of time.

Biodiversity Conservation

The act of protection, preservation, maintenance, sustainable use (conservation), recovery and enhancement of the components of biological diversity, where:

- a) *Conservation* is the sustainable use of resources and encompasses protection as well as exploitation and;
- b) *Preservation* is an aspect of conservation meaning to keep something without altering or changing it.

Biofertilizer

Fertilizers containing living cells or latent cells of efficient strains of microorganisms that help crop plants' uptake of nutrients by their interactions in the rhizosphere when applied through seed or soil. They accelerate certain microbial processes in the soil which augment the extent of availability of nutrients in a form easily assimilated by plants.

(Source: *Tamil Nadu Agricultural University Agritech Portal, Organic Farming: Organic Inputs and Techniques: http://agritech.tnau.ac.in/org_farm/orgfarm_biofertilizertechnology.html*)

Biomass

The mass per unit area of living plant material includes stem, branches, leaves, fruit, roots, etc. (Source: *Essential Climatic Variables T12, Global Terrestrial Observing System, 2009*)

Buffer Zone

Areas peripheral to a specific protected area, like critical tiger habitat or core area, where there are lesser restrictions on resource use, and special development measures are undertaken in order to promote co-existence between wildlife and human activity. (Source: *Wildlife Protection Act 1972, amendment of 2006; United Nations Environment Programme's World Conservation Monitoring Centre Biodiversity a-z: <http://www.biodiversitya-z.org/content/buffer-zones>*)

Capacity Building

A process of developing and strengthening, human resource, scientific & technological capabilities, organizational & institutional capabilities.

(Source: http://www.who.int/tobacco/control/capacity_building/background/en/)

Carbon Cycles

The flow of carbon in various forms, primarily as Carbon dioxide (CO₂) through atmosphere, terrestrial and marine biosphere, oceans and lithosphere by various chemical, physical, geological, and biological processes. (Source: IPCC, 2014: Annex II: Glossary)

Carbon Footprint

The total amount of greenhouse gases that are emitted into the atmosphere each year by a person, family, building, organization, or company. (Source: United States EPA)

Carbon Registry

A voluntary, online greenhouse gas (GHG) registration and emissions tracking system used by its members to transparently register verified, project-based emissions reductions and removals as serialized offsets; record the purchase, sale, banking and retirement of verified offsets, branded as Emission Reduction Tons (ERTs); and optionally report, in a separate account, verified GHG inventories. (Source: American Carbon Registry (2010), American Carbon Registry Forest Carbon Project Standard, version 2.1)

Carbon Sequestration

The uptake and storage of carbon in plants, terrestrial or marine reservoirs as well as geological formations. (Source: IPCC, 2014: Annex II: Glossary)

Carbon Stock

The quantity of carbon contained in a pool of any ecosystem.

Carrying Capacity

The maximum number of organisms of a particular species, which a given part of the environment can maintain indefinitely. (Source: Biodiversity Glossary, Convention on Biological Diversity)

Certificate

A document issued under the rules of a certification system, providing confidence that a duly identified product, process, or service, is in conformity with a specified standard or other normative document. (Source: ISO Guide 2, PEFC terms and definitions)

Certification Evaluation

The combined processes of audit, review, and decision on a client's conformity with the requirements of a standard. (Source: ISEAL Assurance Code)

Types of evaluation:

- a) Pre-Evaluation: assessment to determine the applicant's readiness for their main evaluation
- b) Main Evaluation: assessment of an applicant for NCCF certification
- c) Re-Evaluation: assessment for re-certification
- d) Surveillance Evaluations: periodic assessment to verify that the corrective action requirement has been implemented

(Source: FSC-STD-20-001 V4-0, FSC glossary of terms)

Chain of Custody

All the changes of custodianship of forest based products, and products thereof, during the harvesting, transportation, processing and distribution chain from the forest to the end- use. (Source: Annex 1, Normative Document PEFC Terms and Definitions; 27 October 2006)

Change Matrix

The rate, degree or nature of change of forest resources for a particular site in a given time period. It could be as a result of present or past management activities and anthropogenic impacts in terms of diversity, species richness, relative abundance of species as well as the network of interactions among the different components in the forest ecosystem.

Climate Change

A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods (*Source: Article 1, Framework Convention on Climate Change (UNFCCC)*)

Climate Change Adaptation

Actions taken to help communities and ecosystems to cope with changing climate condition. (*Source: UNFCCC*)

Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates, harms or exploits beneficial opportunities. (*Source: IPCC*)

Climate Change Mitigation

The reduction of greenhouse gas (GHG) emissions to achieve stabilization of GHG concentrations in the atmosphere and subsequently a cessation of further warming. (*Source: 'Climate, Community & Biodiversity Standards 2008'*)

Collective Bargaining

Negotiations which take place between an employer, a group of employers or one or more employers' organisations, on the one hand, and one or more workers' organisations, on the other, for:

- a) determining working conditions and terms of employment; and/or
- b) regulating relations between employers and workers; and/or
- c) regulating relations between employers or their organisations and a workers' organisation or workers' organisations

(*Source: International Labour Organisation convention no. 154*)

Conflict Resolution

A way for two or more parties to find a peaceful solution to a disagreement among them. The disagreement may be personal, financial, political, or emotional.

When a dispute arises, often the best course of action is negotiation to resolve the disagreement.

The goals of negotiation are:

- a) to produce a solution that all parties can agree to
- b) to work as quickly as possible to find this solution
- c) to improve, not hurt, the relationship between the groups in conflict

(*Source: Section 6. Training for Conflict Resolution, Community Tool Box, University of Kansas: <http://ctb.ku.edu/en/table-of-contents/implement/provide-information-enhance-skills/conflict-resolution/main>*)

Consensus

General agreement, characterized by the absence of sustained opposition to substantial issues by any important part of the concerned interests and by a process that involves seeking to take into account the views of all parties concerned and to reconcile any conflicting arguments. Note: Consensus need not imply unanimity. (*ISO Guide 2*)

(Source: Annex 1, Normative Document PEFC Terms and Definitions 27 October 2006)

Continual Improvement

A process of enhancing the management system and performance to achieve improvements in economic, environmental and social aspects of forest management. (Source: Annex 1, Normative Document PEFC Terms and Definitions; 27 October 2006)

Conservation

The protection, preservation, management, or restoration of natural environments and ecological communities that inhabit them. Conservation is generally held to include the management of human use of natural resources for current public benefit and sustainable social and economic utilization.

Conservation Attributes

The physical, biological, ecological, social, cultural and/or aesthetic attributes of an area that make it significant to be conserved for posterity.

Criteria/Criterion

A category of conditions or process through which sustainable forest management can be assessed. A criterion is characterized by a set of related indicators, which are monitored periodically to assess change (Source: Montreal Process, 1995; Bhopal India Process glossary of technical terms)

Culturally Important Site

Locations where pieces of political, military, cultural, or social history have been preserved due to their cultural heritage value. Historic sites are usually protected by law, and many have been recognized with the official national historic site status. A historic site may be any building, landscape, site or structure that is of local, regional, or national significance.

Customary Use Rights

The rights and practices determined by the traditional exercise of a community or individual(s) as per the customs which may or may not have been codified. They differ from prescriptive rights i.e. the former are local usages, belonging to all the inhabitants of a particular place or district-the latter are rights of individuals, independent of the place of their residence. e.g., for certain tribal communities living inside forest areas, certain areas are traditionally used by them for flower or fruit collection or honey collection or for burial of their dead.,

Degradation

A reduction in the capacity of a forest to produce ecosystem services such as carbon storage and wood products as a result of anthropogenic and environmental changes. Though there is no reduction in forest area but it impacts the quality of forest, there is decrease in number of species, reduction in tree cover, or the alteration of the forest structure. (Source: Thompson, I. D., M. R. et al, 2013. An operational framework for defining and monitoring forest degradation. Ecology and Society 18(2): 20.)

Designated Operational Entity

A designated operational entity (DOE) is an independent auditor accredited by the Clean Development Mechanism Executive Board (CDM EB) to validate project proposals or verify whether implemented projects have achieved planned greenhouse gas emission reductions. (Source: Clean Development Mechanism, United Nations Framework Convention on Climate Change: <https://cdm.unfccc.int/DOE/index.html>)

Dispute Resolution

The process adopted to resolve a conflict, dispute or claim. Dispute resolution may also be referred to as alternative dispute resolution, appropriate dispute resolution, or ADR for short. Dispute resolution processes are alternatives to having a court (state or federal judge or jury) decide the dispute in a trial or other institutions decide the resolution of the case or contract. Dispute resolution processes can be used to resolve any type of dispute including family, neighbourhood, employment, business, housing, personal injury, consumer, and environmental disputes. In addition, utilize the dispute resolution processes to assist government employees and private citizens resolve complaints and disputes in many areas including workplace, employment, and contracting matters. (Source: American Bar Association, *Section of Dispute Resolution*: www.americanbar.org/groups/dispute_resolution/resources/DisputeResolutionProcesses.html)

Downed Woody Debris

Dead trees and parts thereof that have fallen on the forest ground or river beds.

Eco-development

Development that is ecologically, socially and economically sustainable. It involves site-specific village level planning by villagers themselves to achieve sustainable development of village resources, alternatives to fuel, fodder and timber and schemes to provide job alternatives to individuals and families in order to reduce forest dependent livelihoods to sustainable levels and to ensure people's active participation in protection of Protected Areas' resources. (Source: Madhya Pradesh Forest Department Wildlife Wing's website: http://mpforest.org/wildlife/wing%20website%20final1_files/Page660.htm)

Ecological Balance

The ecological balance is the equilibrium between, and harmonious coexistence of, organisms and their environment. (Source: Organisation for Economic Co-operation and Development's Glossary of Statistical Terms)

Ecological Community

An association or group of actually or potentially interacting species occupying in the same geographical area in a particular time. (Source: University of Michigan's course titled *Global Change: The Science of Sustainability*: http://www.globalchange.umich.edu/globalchange1/current/lectures/ecol_com/ecol_com.html)

Ecological Conditions

The state of ecological systems including their physical, chemical, and biological characteristics and the processes and interactions connecting them. (Source: United States Environmental Protection Agency's Report on the Environment: <https://cfpub.epa.gov/roe/chapter/eco/index.cfm>)

Ecological Health

The capacity for maintaining biological and social organization, on the one hand, and the ability to achieve reasonable and sustainable human goals on the other. (Source: <http://www.eolss.net/sample-chapters/c09/e6-70-08-06.pdf>)

Ecological Zone

A zone or area with broad yet relatively homogeneous natural vegetation formations, similar (not necessarily identical) in physiognomy. (Source: *Global ecological zones for FAO forest reporting*: <http://www.fao.org/docrep/017/ap861e/ap861e00.pdf>)

Ecosystem Processes

Ecosystem processes include decomposition, production [of plant matter], nutrient cycling, and fluxes of nutrients and energy. (Source: *Millennium Ecosystem Assessment Glossary*)

Ecosystem Services

Ecological processes or functions having monetary or non-monetary value to individuals or society at large. (Source: *IPCC, 2014: Annex II: Glossary*)

Primarily there are four major ecosystems services:

- a) Cultural Services
- b) Provisioning Services
- c) Regulating Services
- d) Supporting Services

Cultural Services are the non-material benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences including cultural diversity, spiritual and religious values, knowledge systems, cultural heritage values, recreation and ecotourism, etc.

Provisioning Services are described as the material or energy outputs from ecosystems. They include food, fibre, fuel, genetic resources, freshwater and other resources. (Source: *The Economics of Ecosystems and Biodiversity: <http://www.teebweb.org/resources/ecosystem-services/>*)

Regulatory Services are provided by regulation of ecosystem processes including air quality regulation, climate regulation, water purification, pollination, disease regulation, etc. (Source: *The Economics of Ecosystems and Biodiversity: <http://www.teebweb.org/resources/ecosystem-services/>*)

Supporting Services, are those that are necessary for the production of all other ecosystem services.

Endangered Species

When used in the context of the International Union for Conservation of Nature Red List, a taxon is classified as 'Endangered' when there is very high risk of extinction in the wild in the immediate future. (Source: *IUCN Red List*)

Endemic species

Species that exist only in one geographic region. Species can be endemic to large or small areas of the earth: some are endemic to a particular continent, some to part of a continent, and others to a single island.

Environmental Stability

A state in which the demands placed on the environment can be met without reducing its capacity to allow all people to live well, now and in the future. (Source: *Financial Times lexicon: <http://lexicon.ft.com/Term?term=environmental-sustainability>*)

Exotic Species

Species occurring in an area outside of its historically known natural range as a result of intentional or accidental dispersal by human activities.

Also known as alien or introduced species, exotic species (Source: *Convention on Biological Diversity glossary*)

Ex-situ Conservation

A conservation method that entails the removal of germplasm resources (seed, pollen, sperm, individual organisms, from their original habitat or natural environment. Keeping components of biodiversity alive outside of their original habitat or natural environment. (Source: *Convention on Biological Diversity Glossary*)

Farm Forestry

The practice of cultivating and managing trees in compact block or agricultural lands (Source: *ISFR 2015*)

Forest

a) Ecological definition

Complex ecological system in which trees are the dominant life form.

b) By the Hon'ble Supreme Court of India

"The word, forest" must be understood according to its dictionary meaning. This description covers all statutorily recognized forests, whether designated as reserved, protected or otherwise for the purpose of Section 2(i) of the Forest Conservation Act, 1980. The term "forest land", occurring in Section 2, will not only include "forest" as understood in the dictionary sense, but also any area recorded as forest in the Government record irrespective of the ownership."

c) Food and Agriculture Organization of United Nations (FAO)

Land with tree crown cover (or equivalent stocking level) of more than 10 percent and area of more than 0.5 ha. The trees should be able to reach a minimum height of 5 m at maturity in situ. May consist either of closed forest formations where trees of various storeys and undergrowth cover a high proportion of the ground; or of open forest formations with a continuous vegetation cover in which tree crown cover exceeds 10 percent. Young natural stands and all plantations established for forestry purposes which have yet to reach a crown density of 10 percent or tree height of 5m are included under forest, as are areas normally forming part of the forest area which are temporarily unstocked as a result of human intervention or natural causes but which are expected to revert to forest.

The term forest is further divided, according to its origin, into two categories: natural forest and plantation forest.

d) Forest area

Forest area means, the area recorded as "Forest" in government records.

e) Forest Cover

The term "Forest Cover" includes "all lands with more than 1 ha area with tree canopy density of more than 10 % irrespective of ownership and legal status". (Source: *ISFR, 2013*)

f) Reserved Forests

An area notified under the provisions of Indian Forest Act, 1927 or other State Forest Acts, having full degree of protection. In reserved forests all activities are prohibited unless permitted.

g) Protected Forests

An area notified under the provisions of the Indian Forest Act, 1927 or other State Forest Acts, having limited degree of protection. In Protected Forests all activities are permitted unless prohibited.

Forest Inventory

A Systematic collection of data on different parameters of forest resource for its assessment and analysis , including digitized maps which describes the location and nature of forest (including tree size, age, volume and species composition) as well as a description of other forest values such as soils, vegetation and wildlife features.

Forest Dwellers (Forest Dependent Communities)

The members or community of the Schedule Tribes and pastoral communities who primarily reside in and depend on forests or forest lands for *bona fide* livelihood needs. In addition there are “Other traditional forest dwellers” who reside in forest for more than three generations prior to 13th December 2005 for their *bona fide* livelihood needs. (Source: *The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006*)

Forest Management

The branch of forestry concerned with the operational management of forest resources and the overall administrative, economic, legal and social aspects and with the essential scientific and technical aspects, especially silviculture, protection and forest regulation. (Source: *Bhopal India Process Glossary of Technical Terms*)

Forest Management Enterprise (FME)

An individual or organisation that is responsible for the management planning and supervision of operations in a forest area. Also an individual or organisation that has the registered property rights over a forest area (Source: *Annex 1, Normative Document PEFC Terms and Definitions; 27 October 2006*)

An organisation, a company or operation responsible for forest management. (Source: *FSC-STD-20-012 V1-1; FSC glossary of technical terms*)

Forest Management Unit (FMU)

A spatial area or areas submitted for certification with clearly defined boundaries managed to a set of explicit long term management objectives which are expressed in a management plan. This area or areas include(s):

- a) all facilities and area(s) within or adjacent to this spatial area or areas under legal title or management control of, or operated by or on behalf of the Organization, for the purpose of contributing to the management objectives; and
- b) all facilities and area(s) outside, and not adjacent to this spatial area or areas and operated by or on behalf of The Organization, solely for the purpose of contributing to the management objectives. (Source: *FSC-STD-01-001 V5-2; FSC glossary of terms*)

A clearly demarcated area of land covered predominantly by forest, managed to a set of explicit objectives and according to a long-term forest management plan. A forest management unit may cover several hundred hectares to fractions thereof. The entire area of the forest management unit will have to be clearly demarcated on the ground and usually also on a map. Under the broad objectives to which the entire management unit is subjected, subunits may be managed under different and separate management regimes. (Source: *Bhopal India Process Glossary of Technical Terms*)

Forest Restoration

The purpose of forest restoration is to restore a degraded forest to its original state – that is, to re-establish the presumed structure, productivity and species diversity of the forest originally present at a site. (Source: *FAO*)

Free Prior and Informed Consent (FPIC)

The principle that an individual or a community has the right to give or withhold their consent to proposed projects that may affect the land they own, occupy or otherwise use. (Source: *Glossary. 'Plan Vivo Standard 2012 Draft for Consultation'. 2012*)

Free implies that there is no coercion, intimidation or manipulation.

Prior implies that consent is to be sought sufficiently in advance of any authorization or commencement of activities and respect is shown to time requirements of indigenous consultation/consensus processes.

Informed implies that information is provided that covers a range of aspects, including the nature, size, pace, reversibility and scope of any proposed project or activity; the purpose of the project as well as its duration; locality and areas affected; a preliminary assessment of the likely economic, social, cultural and environmental impact, including potential risks; personnel likely to be involved in the execution of the project; and procedures the project may entail. This process may include the option of withholding consent. Consultation and participation are crucial components of a consent process. (Source: *Indigenous Peoples and Minorities Section, Office of the High Commissioner for Human Rights' Rule of Law, Equality and Non-Discrimination Branch: <http://www.ohchr.org/Documents/Issues/IPeoples/FreePriorandInformedConsent.pdf>*)

Genetic Diversity

The variation in the amount of genetic information within and among individuals of a population, a species, an assemblage, or a community. (Source: *United Nations, 1992*)

Genetically Modified Organisms

An organism in which the genetic material has been altered in a way that does not occur naturally by mating and/or natural recombination. (Source: *Based on FSC-POL-30-602 FSC Interpretation on GMO (Genetically Modified Organisms)*).

Growing Stock

Volume of wood of a forest stand in a given area of forest or wooded land that have more than a certain diameter at breast height (dbh). It includes the stem from ground level or stump height up to a given top diameter, and may also include bark as well as branches above a certain diameter.

Habitat

A place where an organism lives and/or the conditions of that environment including the soil, vegetation, water, and food.

Health of Forest

Forest condition that is naturally resilient to damage; characterized by biodiversity, it contains sustained habitat for wood, fish, wildlife, and humans, and meets present and future resource management objectives. (Source: *Bhopal India Process Glossary of Technical Terms*)

High Conservation Value Forests (HCVF)

All forests contain environmental and social values, such as wildlife habitat, watershed protection, archaeological sites, etc. Where these values are considered to be of outstanding significance or critical importance, the forest can be defined as a High Conservation Value Forest (HCVF). (Source: *ProForest, The High Conservation Value Forest Toolkit, Edition 1, December 2003*)

Forests having any of the following values:

HCV 1 - Species Diversity. Concentrations of biological diversity including endemic species, and rare, threatened or endangered species, that are significant at global, regional or national levels.

HCV 2 - Landscape-level ecosystems and mosaics. Intact forest landscapes and large landscape-level ecosystems and ecosystem mosaics that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.

HCV 3 - Ecosystems and habitats. Rare, threatened, or endangered ecosystems, habitats or refugia.

HCV 4 - Critical ecosystem services. Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.

HCV 5 - Community needs. Sites and resources fundamental for satisfying the basic necessities of local communities or Indigenous Peoples (for example for livelihoods, health, nutrition, water), identified through engagement with these communities or Indigenous Peoples.

HCV 6 - Cultural values. Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or Indigenous Peoples, identified through engagement with these local communities or Indigenous Peoples. Source: FSC-STD-01-001 V5-2 (Source: *FSC glossary of terms*)

Indicator

A quantitative or qualitative parameter which can be assessed in relation to a criterion. It describes objectively and unambiguously a relevant element of a criterion. (Source: *PEFC terms and definitions*)

Indigenous Species (also called native species, or autochthonous species)

A species that has been observed in the form of a naturally occurring and self-sustaining population in historical times. (Source: *Bern Convention 1979*)

Species or genotypes which have evolved in the same area, region or biotope and are adapted to the specific predominant ecological conditions at the time of establishment. (Source: *Compilation of Forestry Terms and Definitions, Internal Report no. 6, 2002, European Forestry Institute*)

Integrated Nutrient Management

It is the management of soil, nutrient, water, crop, and vegetation tailored to a particular cropping and farming system, undertaken with the aim of improving and sustaining soil fertility, land productivity and reducing environmental degradation. It aims to optimize the condition of the soil, with regard to its physical, chemical, biological and hydrological properties, for the purpose of enhancing farm productivity, whilst minimizing land degradation. . (Source: *Food and Agricultural Organisation: <http://www.fao.org/agriculture/crops/thematic-sitemap/theme/spi/scpi-home/managing-ecosystems/integrated-plant-nutrient-management/ipnm-what/en/#a>*)

Integrated Pest Management

Integrated Pest Management (IPM) is an eco-friendly approach which aims at keeping pest population at below economic threshold levels by employing all available alternate pest control methods and techniques such as cultural, mechanical and biological with emphasis on use of bio-pesticides and pesticides of plant-origin like Neem formulations. The use of chemical pesticides is advised as a measure of last resort when pest population in the crop crosses economic threshold levels (ETL). Suppression of pest population below economic threshold level through the adoption of feasible and

affordable Good Agricultural Practices aiming least disturbance to the eco system and environment. (Source: Press Information Bureau, Government of India, Ministry of Agriculture, Department of Agriculture and Cooperation, Integrated Pest Management, 08-October-2014)

An ecosystem approach to crop production and protection that combines different management strategies and practices to grow healthy crops and minimize the use of pesticides. IPM is an approach-based method for analysis of the agro-ecosystem and the management of its different elements to control pest and keep them at an acceptable level (action threshold) with respect to the economic, health and environmental requirements. (Source: Food and Agricultural Organisation:<http://www.fao.org/agriculture/crops/thematic-sitemap/theme/spi/scpi-home/managing-ecosystems/integrated-pest-management/en/>)

Landscape

A geographical mosaic composed of interacting ecosystems resulting from the influence of geological, topographical, soil, climatic, biotic and human interactions in a given area (Source: International Union for Conservation of Nature Glossary of Definitions)

“Landscape approaches” seek to provide tools and concepts for allocating and managing land to achieve social, economic, and environmental objectives in areas where agriculture, mining, and other productive land uses compete with environmental and biodiversity goals

Local Communities

Communities of any size that are in or adjacent to the FMU, and also those that are close enough to have a significant impact on the economy or the environmental values of the Management Unit or to have their economies, rights or environments significantly affected by the management activities or the biophysical aspects of the FMU. (Source: FSC-STD-01-001 V5-2, FSC glossary of terms)

Management Plan

A written document based on the data, reports, surveys, records and maps that describe, justify and regulate the activities to be carried out by any manager, staff or organization within or in relation to the FMU, including statements of objectives and policies. (Source: FSC-STD-01-001 V5-2, Source: FSC glossary of terms)

also

Working Plan, is a written document for a specified area describing the status of existing forest and biodiversity, climatic, edaphic and biotic factors, assessing the impact of past management practices and deciding suitable management interventions and prescribing management practices to conserve and efficiently utilize the forest resources. It aims at continuity of policy & action and controlling treatment of a forest. (Source: National Working Plan Code, 2014)

Minimisation of Impact

Measures taken to reduce the duration, intensity and / or extent of impacts (including direct, indirect and cumulative impacts, as appropriate) that cannot be completely avoided, as far as is practically feasible. (Source: Business and Biodiversity Offsets Programme (BBOP) Glossary)

Monetise

Valuation of good or service in monetary terms.

Monitoring and Evaluation

Monitoring can be defined as a continuing function that aims primarily to provide the management and main stakeholders of an ongoing intervention with early indications of progress, or lack thereof, in the achievement of results. An ongoing intervention might be a project, programme or other kind of support to an outcome. (Source: *Handbook on Monitoring and Evaluating for Results, United Nations Development Program*)

Evaluation is a selective exercise that attempts to systematically and objectively assess progress towards and the achievement of an outcome. Evaluation is not a one-time event, but an exercise involving assessments of differing scope and depth carried out at several points in time in response to evolving needs for evaluative knowledge and learning during the effort to achieve an outcome. All evaluations—even project evaluations that assess relevance, performance and other criteria—need to be linked to outcomes as opposed to only implementation or immediate outputs. (Source: *Handbook on Monitoring and Evaluating for Results, United Nations Development Program*)

Non-Conformity

Situation in which the audit evidences indicate that operations are not carried out in compliance with a certification criterion. (Source: *Annex 1, Normative Document PEFC Terms and Definitions; 27 October 2006*)

Non-Wood Forest Products (also refer NTFPs)

Any product other than wood that is produced in forests and includes fruits and nuts, vegetables, fish and game, medicinal plants, resins, essences and a range of barks and fibres such as bamboo, rattans, and a host of other palms and grasses. (Source: *CIFOR*)

Payment for Ecosystem Services

It involves a series of payments to land or other natural resource managers in return for a guaranteed flow of ecosystem services (or, more commonly, for management actions likely to enhance their provision) over-and-above what would otherwise be provided in the absence of payment. Payments are made by the beneficiaries of the services in question, for example, individuals, communities, businesses or government acting on behalf of various parties.

(Source: *Payments for Ecosystem Services: A Best Practice Guide, May 2013, www.ecosystemassessments.net/resources/payments-for-ecosystem-services-a-best-practiceguide.pdf*)

Market-based approaches using payments or rewards to encourage or discourage specific practices in natural resources management. (Source: *IUCN Glossary Definitions*)

Plantation/Planted Forests

A forest area established by planting or sowing with using either alien or native species, often with one or few species, regular spacing and even ages, and which lacks most of the principal characteristics and key elements of natural forests. (Source: *FSC-STD-01-001 V5-2, FSC glossary of technical terms*)

Forest stands established by planting or/and seeding in the process of afforestation or reforestation which are either of introduced species (all planted stands) or intensively managed stands of indigenous species, which meet all the following criteria: one or two species, even aged, regular spacing. (Source: *Bhopal India Process Glossary of Technical Terms*)

Precautionary Approach

A principle which states that lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental damage to habitats or species when there is a threat of serious or irreversible environmental degradation. (Source: *IUCN Glossary*)

Protected Area

A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. (Source: IUCN, 2008)

Rare Species

Species that are uncommon or scarce, but not classified as threatened. These species are located in geographically restricted areas or specific habitats, or are scantily scattered on a large scale. They are approximately equivalent to the International Union for Conservation of Nature (2001) category of Near Threatened (NT), including species that are close to qualifying for, or are likely to qualify for, a threatened category in the near future. They are also approximately equivalent to imperilled species (Source: IUCN, (2001). *IUCN Red List Categories and Criteria: Version 3.1.*; FSC-STD-01-001 V5-2; FSC glossary of technical terms)

Regeneration

The act of establishing or enriching vegetation on barren or degraded land/forest naturally or artificially.

a) Artificial Regeneration (AF)

Establishing or enriching forests by artificial methods through seeds or vegetative propagation. (Source: <http://www.fao.org/docrep/005/Y4171E/Y4171E39.htm>)

b) Assisted Natural Regeneration (ANR)

Regenerating secondary forest by protecting and nurturing the mother trees and their wildlings inherently present in the area. It aims to accelerate, rather than replace, natural successional processes by removing or reducing barriers to natural forest regeneration such as soil degradation, competition with weedy species, and recurring disturbances (Source: *Assisted Natural Regeneration of Forests, Food and Agricultural Organisation: <http://www.fao.org/forestry/anr/en/>*)

c) Natural Regeneration(NR)

Regeneration of a forest by natural seeding, seed dispersal, coppicing, suckering, etc. without any human intervention. (Source: *Glossary of Centre for Sustainable Forest Management & Forest Certification, Indian Institute of Forest Management, Bhopal*)

Scale, Intensity and Risk

Scale refers to the relative size or extent of the FMU and its operational and management activities such as silviculture operations, road building, etc. It also helps in identification and estimation of threshold levels with respect to the activities.

Intensity is based on the level of management activities within the FMU. It is a measure of the force, severity or strength of the impact of a management activity on environmental, social or economic values. In the context of forest management, intensity refers to site disturbing activities, such as disturbance caused by harvesting machinery, removal of trees, soil preparation, planting, use of fertilizers, use of pesticides, etc.

Risk refers to the likelihood or probability of an event with negative consequences or an unacceptable negative impact, caused by any activity in the FMU, to result in a non-compliance at Criteria level.

(Source: *Scale, Intensity and Risk (SIR) Guideline for Standard Developers, FSC-GUI-60-002 V1-0*)

Snags

The Standing dead trees serving as nesting habitat to birds, mammals, insects, etc. and other organisms. (Source: *Washington State Department of Natural Resources, Snags, Coarse Wood Debris, and Wildlife, Jim Bottorff, DNR Stewardship Wildlife Biologist, 2009*)

Stakeholder

An individual, group of individuals or an organisation with a common interest, concerned with or affected by the operation of an organisation. (Source: *ISO 14004, PEFC terms and definitions*)

a) Affected stakeholder

An individual, group or an organization that has interest or concern or likely to be affected, directly or indirectly by the activities of a management unit. There are various examples of affected stakeholders, which include, but are not restricted to local neighbourhood, workers, group or persons associated with the management unit.

The following are examples of affected stakeholders may include -

Local communities, Forest dwellers and tribals, Workers, Forest dwellers, Neighbours, Downstream landowners, Local processors, Local businesses, Tenure and use rights holders, including landowners, Organizations authorized or known to act on behalf of affected stakeholders, for example social and environmental NGOs, labour unions. (Source: *FSC-STD-01-001 V5-0*).

b) Interested stakeholder

An individual, group of individuals or an organisation; that has shown an interest, or is known to have an interest, in the activities of the organisation. (Source: *FSC-STD-01-001 V5-2, FSC glossary of technical terms*)

Stakeholder Consultation

It is a dialogue between stakeholders and project implementer. (Source: *Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets, International Finance Corporation*)

Stakeholder Engagement

The process used by an organisation to engage relevant stakeholders for the purpose to achieve accepted outcomes. (Source: *AA1000 Stakeholder Engagement Standard 2011*)

Stakeholder Identification

Identifying and listing of project stakeholders representing the different classes including but not limited to UN Agenda 21.

Stakeholder Mapping

An exercise of establishing a contact with the already identified and interested stakeholders for the standard setting process.

Stakeholder mapping exercise includes defining key sectors of stakeholders, issues of each sector and best means of communication to reach them.

The major stakeholder groups outlined in the UN Agenda 21 are:

Business and industry, Non-governmental organizations, Scientific and technological communities, Farmers and small forest landowners Workers and trade unions, Local authorities, Indigenous people, Women Children and Youth

(Source: *Stakeholder Mapping - <https://www.developingstandards.org/system-development/standard-setting-process/stakeholder-mapping>*)

Sustainable Forest Management

The process of managing forest to achieve one or more clearly specified objectives of management with regard to the production of a continuous flow of desired forest products and services without undue reduction of its inherent values and future productivity and without undue undesirable effects on the physical and social environment (*Source: Glossary of Center for Sustainable Forest Management & Forest Certification, Indian Institute of Forest Management, Bhopal*)

Sustainable Use

Use of components of biological diversity in such manner and at rates that does not lead to the long term decline of the biological diversity thereby maintaining its potential to meet the needs and aspiration of present and future generations (*Source: Biological Diversity Act 2002*)

Tenure Claims (Tenure Rights)

A legal claims made on tenure of land and/or natural resources by an individual or group of individuals. Refer to the relevant sections of The Indian Forest Act 1927, The Wildlife (Protection) Act 1972 and The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006.

Threatened Species

An umbrella term for any species categorised as Critically Endangered, Endangered or Vulnerable by the IUCN Red List of Threatened Species. (*Source: IUCN, 2012*)

Any species that is likely to become extinct within the foreseeable future throughout all or part of its range and whose survival is unlikely if the factors causing numerical decline or habitat degradation continue to operate. (*Source: Specially Protected Areas Protocol, 1997*)

Trees Outside Forests

a) India

“All trees growing outside recorded forest areas” are defined as trees outside forests. The recorded forest area means “reserve”, “protected’ or ‘unclassified forest’. The trees growing in private lands in agroforestry, farm forestry, along the farm bunds and homesteads, and in orchards and in common and government non-forest lands in parks and gardens, along roads, canals and railway line in rural or urban areas constitute TOF. Trees Outside Forests can have their occurrence in the form of block, linear and scattered stratum.

b) FAO

“Trees on land not defined as forests and other wooded land” including area less than 0.5 ha, trees able to reach at least a height of 5 m at maturity in situ where the stocking level is below 5 percent or trees not able to reach a height of 5m at maturity in situ where the stocking level is below 20 percent; scattered trees in permanent tree crop such as fruit-trees and coconut; trees in parks and gardens, around buildings and in lines along streets, roads, railways, rivers, streams and canals; trees in shelterbelts of less than 20m width and 0.5 ha area.”

Usufruct

The forest produce which comes out of the natural process such as fallen branches, leaves, fruits, and whose harvest does not adversely affect the suitability of the forest resources.

Vitality of Forests

A broad suite of factors that affect the structure or function of forest ecosystems. These factors can be generally classed as natural or exotic biotic agents, abiotic stressors, and anthropogenic emissions and manipulations of the forests.

Factors that help in the assessment of the regeneration status, area affected by forest fires, area damaged by natural calamities, area protected from grazing, lopping practices, area infested by invasive weed species in forests, incidences of pest and diseases, forest degradation and its drivers;

Wildlife Recovery Plans

Conservation oriented Projects for large scale or localised rehabilitation of threatened wildlife populations, usually involving a multipronged approach of habitat protection, *in-situ* and *ex-situ* species protection program and outreach activities.

Bibliography

- *Bhopal India Process*
- *United Nations Forum on Forests*
- *ITTO Principles and Guidelines for the Sustainable Forest Management of Natural Tropical Forests*
- *MTCC Criteria & Indicators for Forest Management Certifications*
- *SFI Sustainability Forest Management Standard*
- *FSC International Generic Indicators FSC-STD-60-004 V1-0 EN*
- *WWF High Conservation Value Toolkit Edition 1 (December 2003)*

