



## **NETWORK FOR CERTIFICATION AND CONSERVATION OF FORESTS**

**Title: THEME F: ECOLOGICAL HEALTH OF FORESTS– CONSERVATION AND MANAGEMENT**

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## **THEME F : ECOLOGICAL HEALTH OF FORESTS– CONSERVATION AND MANAGEMENT**

This theme deals with issues of natural resource capital accounting and management as well as conservation of natural resources of high conservation and biodiversity values. This theme would also look at ecosystem health and vitality, and maintenance and conservation of diversity within the FME – diversity at genetic, species 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. Conservation attributes would also need to take into account the uniqueness of the resource and its replace ability/survival for future generations. The theme would also consider various types of forest 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.

Principles and Criteria under the theme would be-

### **Principle 12: Biodiversity and Natural Resource Management – Conservation, Enhancement and Rehabilitation**

Criterion 12.1: The FME shall have written guidelines for the maintenance, conservation and enhancement of biological diversity (ecosystem/landscape/species/genetic diversity) within the forest areas in a manner to enhance the stability, vitality and resistance capacity of the forest tract to adverse environmental factors, and strengthen the natural regulation mechanisms.

Criterion 12.2: The FME shall consider the impacts of its forest management activities on the forest's ecological conditions and undertake measures for the restoration and rehabilitation of degraded forests, if any, arising as a result of management activities.

Criterion 12.3: The FME shall undertake efforts to minimize the use of chemicals to achieve management objectives while protecting employees, neighboring properties, the public and the environment, including wildlife and aquatic habitats. The use of chemicals shall be strictly controlled and the environmental impacts caused, shall be minimized accordingly.

Criterion 12.4: The use of biological control agents shall be documented, minimized, monitored and strictly controlled in accordance with national laws and internationally accepted scientific protocols.

Criterion 12.5: The FME shall not use any genetically modified organisms unless expressed permission for the same is obtained from the Government of India.

Criterion 12.6: Before introduction of exotic species, the FME shall assess the ecological impacts of their introduction, and their propagation shall be strictly controlled. Care

shall be taken that invasive exotics are not introduced into the forests, prior to establishment of strict controls.

Criterion 12.7: The FME shall not change the land use pattern of any 'natural forest/legally classified forest area', to a non forestry land use, other than as per the specific provisions of the law . Further, the FME shall not convert any primary forests to forest monoculture plantations, nor shall it convert any threatened forest ecosystem, culturally and socially significant area, or an important habitat of threatened species to a non-forestry land use.

### **Principle 13: Identification, Protection and Management of Special Sites/High Conservation Value Forests**

Criterion 13.1: The FME shall identify and classify 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 manage them in a manner appropriate for their unique features.

Criterion 13.2: The identification of such attributes and areas shall be through a formal process of consultation, which shall be documented. The consultation process must place emphasis on the identification of conservation attributes, and options for the maintenance thereof.

Criterion 13.3: The management plan shall include and implement specific measures that ensure the maintenance and/or enhancement of the applicable conservation attributes consistent with the precautionary approach. These measures shall be specifically included in the publicly available management plan summary.

Criterion 13.4: Annual monitoring shall be conducted to assess the effectiveness of the measures employed to maintain or enhance the applicable conservation attributes.

Criterion 13.5: The FME shall identify and protect any non-forested wetlands and its constituent elements, which are found associated with the forest tract (associated as found within the forest area, found upstream, or found downstream).

### **Principle 14: Ecosystem services – identifying, quantifying and monetizing both tangible and non-tangible ecosystem services**

Criterion 14.1: The FME shall identify all ecosystem services and functions associated with the forest tract, 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..

Criterion 14.2: The FME shall categorize the forest services based on their nature as provisioning services, regulatory services, cultural services or supporting services, and identify threats to the functioning of these services along with measures required to neutralize such threats.

Criterion 14.3: The FME shall have in place written guidelines for protection of soil and water resources, and put in place appropriate soil and moisture conservation measures to maintain and enhance the soil characteristics. 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.

Criterion 14.4: Wherever possible, the FME shall attempt to quantify the ecosystem services provided by the forest tract in monetary terms, and measure the associated risks as well as threat mitigation measures in the same monetary terms, to arrive at a valuation of the ecosystem service. These valuations can be further utilized to monetize ecosystem services wherever possible, as well as to establish a 'reward/punish' mechanism for forest management operations which contribute respectively to enhancement/degradation of forest ecosystem services.

**Principle 15: Biodiversity conservation and biodiversity offsets – including measures to avoid, minimize, rehabilitate or offset loss to biodiversity values arising out of management activities or occurring within the FME**

Criterion 15.1: The FME shall undertake forest management operations in such a manner so as to maintain the natural features of forest lands, protect water resources, and prevent land degradation. Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.

Criterion 15.2: The FME shall undertake 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 tract. Once identified, the FME shall establish conservation zones appropriate to the uniqueness of the affected resources and the scale and intensity of forest management.

Criterion 15.3: The FME shall attempt to measure the biodiversity levels of the forest tract by use of various biodiversity indices. Further, the FME shall assess the predicted impact on biodiversity due to forest management operations and offset biodiversity losses, on the basis of severity of impact, by utilization of the following offset hierarchy viz.,

- a) Avoidance of impact
- b) Minimization of impact
- c) Restoration/Rehabilitation of biodiversity attributes
- d) Offsetting of biodiversity impacts by *ex situ* conservation, forest enrichment etc.
- e) Additional Conservation Actions