

FOREST ECOSYSTEM RESTORATION CAMPAIGN (ForEcoIndia)

The forest policy ideals have not been adequately supported by actions on ground. The current Forest Policy (1988) reiterates the goal of 1952 policy of 33 % country's land to be put under forests. This aspirational goal still remains a distant dream. The forest policy gives supremacy to environmental considerations in forest management and all other objectives have been made subservient to it. How far the ecological goals have been achieved is a matter of debate. Secondly, policy stipulates that people have first charge on forests and their bona fide needs from forests should be satisfied. The policy stipulations relating to grazing, rights and concessions could not be successfully implemented in most states and it has been business as usual. Also, the goal to enhance forest productivity has by and large been not achieved as is evident from the successive reports of the Forest Survey of India. Conversion of forests to non-forest uses continues with increasing demand for forestland for mining and infrastructure development.

Forest Ecosystem degradation

The National Forest Policy of 1988, that replaced policy of 1952, acknowledges (a reflection on performance of the latter) in its preamble that:

“Over the years, forests in the country have suffered serious depletion. This is attributable to relentless pressures arising from ever-increasing demand for fuel-wood, fodder and timber; inadequacy of protection measures; diversion of forest lands to non-forest uses without ensuring compensatory afforestation and essential environmental safeguards; and the tendency to look upon forests as revenue earning resource.”

Despite conservation centred policy and huge expenditure on afforestation and reforestation the forest degradation could not be arrested or reversed. Forest productivity has declined over the years so has harvesting of forest products. Bulk of timber, pulp and even finished furniture used in India are imported from other tropical countries like Malaysia and Indonesia. The principle of sustained yield has almost been unsuccessful due to failure to sustain long-term productivity of forests. The non-timber forest products have been subjected to selective destructive harvesting resulting in depletion and even total extinction of certain species.

The condition of most forests, which have been under regular management for a long time, is that trees of higher dimensions are absent, they are heavily degraded and have middle-aged trees, with little or no regeneration, or young poles and understory, eroded soils devoid of humus and organic matter, dry land with little or no moisture contents in soil. All this makes these areas highly vulnerable which are slowly turning into aridity; it is just a matter of time when these lands will become desert. Forests are open to unregulated heavy grazing, grass cutting and fodder lopping. Leaves are swept in many areas from forest floors impoverishing the site in organic matter and soil nutrients. Topsoil is washed away due to unprotected forest floor by vegetative cover. Biodiversity in forests is declining and except a few most protected areas are not being managed actively due to lack of funds and staff. PAs are not being managed as ecosystems but are being preserved for a particular mammal or bird species e.g. tiger, elephant, bison, rhino and lion.

The objective of reversing or even halting further deterioration of forests poses a serious challenge not only to the practitioners of forest management or the government but also to the nation as a whole.

An Ecosystem Approach to Forest Management

The classical forest management has to shift to an integrated and holistic management based on sound ecological principles. The forests should be managed as ecosystems where all

elements and their functions and biogeochemical processes are allowed to continue to maintain ecosystem functionality and integrity. The focus should not only be on trees but also on shrubs, climbers, herbs, grasses, fauna, micro fauna and flora, soil, soil nutrients, soil moisture and the fringe human habitations that affect the ecological processes and are at the centre of ecosystem management.

Two new demands on forests that have come recently are-biodiversity conservation and climate change mitigation (carbon sequestration). We do not know what may be the other new demands on forests in future. This requires that forest ecosystems should not be disturbed beyond recovery and their integrity must be maintained while using their products and services on a sustainable basis for the benefit of society.

Ecosystem management Principles

The United Nations Convention on Biological Diversity (1992) approach to ecosystem-based management is that:

Ecosystem and natural habitats management seeks to meet human requirements to use natural resources, whilst maintaining the biological richness and ecological processes necessary to sustain the composition, structure and function of the habitats or ecosystems concerned. Important within this process is the setting of explicit goals and practices, regularly updated in the light of the results of monitoring and research activities.

The parties to Convention on Biological Diversity agreed in 2005 to the following description of an ecosystem approach:

The ecosystem approach is based on the application of appropriate scientific methodologies focused on levels of biological organization, which encompass the essential processes and interactions amongst organisms and their environment. The ecosystem approach recognizes that humans are an integral component of ecosystems.

Forest Ecosystem Management

Worldwide, the forest management practices are currently undergoing the most thoughtful, intense and swift change since their beginning in 19th century. The shift from the principle of sustained yield management of quite a limited number of marketable tree species to the sustainable management of forest ecosystems is transforming some of the basic historical forest management principles. The approach to looking at forests for trees or wood is no more valid today when it has been established that forests provide important ecosystem services and any interference with the biogeochemical processes in a forest ecosystem and alteration of its structure and functions destroys the ecological integrity with serious repercussions on abilities of these ecosystems to provide goods and services to present and future generations of human societies.

The central goal of ecosystem management is sustainability, where the emphasis is on delivering ecosystems services for current use without compromising the ability to provide them in the future. A fundamental aspect of this is the need to protect sources of resources (ecosystems). This reflects the need to shift away from resource management towards ecosystem management.

Close to nature forest management

The management of forests “closer to nature” has increased significantly in recent decades. The “nature-based silviculture” or “close-to-nature forest management” approach in Europe or ‘ecosystem management’ and ‘adaptive management’ in North America trends aim at improving current forest management practices so that they are still socio-economically beneficial, as well as environmentally sound. “Close to Nature Forestry” or “Nature based forestry” philosophy emerged in Europe as early as in 19th century through writings of eminent foresters. The clear cutting and replanting with monoculture of conifer species in Europe was most prevalent management that started in early 19th century. It witnessed site degradation, frequent windbreaks and outbreak of pest and disease attacks. During this period India was introducing traditional forestry practices of Europe like uniform or shelter wood system for changing irregular forests into regular ones and selection system to cut selectively marketable tree species.

The nature based forestry movement began in Germany in 1920s and in 1950 a ‘Close to Nature’ forestry group was constituted in Germany. The expansion of this movement outside Germany gave birth to Pro Silva Europe in Slovenia in 1989. Twenty-six European countries are its members. The USA and Canada have also joined recently. The members are foresters, forest owners, students and other interested parties. PRO SILVA promotes forest management strategies that optimize the maintenance, conservation, and utilisation of forest ecosystems in such a way that the ecological and socio-economic functions are sustainable and profitable. The general approach to management that is advocated by PRO SILVA includes market and non-market objectives and takes the whole forest ecosystem into consideration.

The principles of Pro Silva Europe have universal application. Pro Silva policy is based on a holistic approach to sustainability, covering the issues of major importance to present-day forest management. These require a standard of commitment from forest owners and forest managers to the following issues: the basic principles of responsible forest management and forest utilisation; the maintenance of biodiversity; the adaptation of man-made changes to environmental conditions related to the ecologically sustainable use of energy; the use of exotic species; and the ecological role of forests in the landscape.

Paradigm shift in India from classical forest management to forest ecosystem management

India should move to an ecosystem approach to forest management applying principles of “Close to Nature Forestry”. It is obvious from the condition of forests in our country that the classical or traditional forest management has become scientifically obsolete and it has been having deleterious effects on remaining and logged over forests resulting in a serious degree of ecosystem degradation. Therefore, there is need to shift from classical management system to a more scientific, integrated and ecosystem based forest management with the objective to restore forest ecosystems and bring forests close to nature.

India has a vast variation in ecological conditions including soil, climate and vegetation type. All planning and application of the principles and operations should be site specific. Different approaches and methods will be needed for different forest types and varying site conditions in terms of gradient, soil fertility, erosion status, precipitation regime and other environmental factors, soil moisture, local peoples dependence and protection from grazing. There will also be need to develop on pilot basis site specific and model management plans to demonstrate that ecosystem based management can be introduced gradually without drastic changes in current management and policies.

The methods and techniques to be applied to change forest structure and composition to bring it close to nature and introducing a newer version of selection system for continuation of forest cover across all forests in a way that ecosystem integrity remains unaffected and flow of ecosystem services continues on a sustainable basis. When afforestation, reforestation or enrichment planting in degraded forests is undertaken or unsustainable coppice forests are changed to healthy and mixed forests with local species the principles of Pro Silva as applicable to Indian conditions can be followed.

People at the Centre of Ecosystem Management

A new approach will be desirable to involve local community as well as civil society. The joint forest management (JFM) could not sustain and did not have significant positive impacts on forest resources barring a few exceptions. It has been a project and fund driven activity which became dormant when both these were withdrawn reverting to business as usual. The one extreme view to handover management to communities did not succeed so also another that people should protect forests in lieu of a promised share in forest produce or revenue. The ecosystem management is much more complex than JFM as the target will be to exclude negative influence of people from forest ecosystems and harness their positive energies to enhance ecosystem quality and productive potential. It will be more proactive participation than hitherto administered participation.

Forest Governance reforms for Forest Ecosystem Management

A shift to ecosystem-based management will require incorporation of this approach in policies; development planning and working plan system. The National Forest Policy 1988 lays stress on achieving ecological security and environmental balance. The forestry organizations should adopt the ecosystem approach in their day to day forest operations be it harvesting/ afforestation/ reforestation or PA management. An assessment of forest governance will be crucial to understand strengths and weaknesses and also to identify changes that would be required for implementing the changed forest management activities. Shift to ecosystem-based management will be a long drawn process. Therefore, the principle of adaptive management should be adopted and practiced so that a flexible process is set in motion and mid-term corrections and improvements could be made as the learning curve rises.

Paradigm Shift will require acceptance of the new principles by the Government, foresters and society. Forests are owned by states that manage these through their forest departments. The traditional working plan system governs the management of forests and rarely any deviation is allowed though not all prescriptions are followed other than allowable annual cut. The new concept of ecosystem-based management will have to be incorporated in working plans under preparation and those prepared in future. In addition, the MOEF and Forest Departments can issue guidelines for management of forests. It will be a challenging mission, as some people will perceive it as a threat to their long held views, beliefs and conviction in classical management. This is but inevitable and there will be a few early converts but as a campaign is launched and sustained it will draw wide support.

ForEcoIndia Objectives

The **ForEcoIndia** is a campaign or movement that will

1. Propagate ecosystem based forest management;
2. Strive to support restoration of degraded forests with an ecosystem approach;
3. Undertake advocacy for restoration of degraded ecosystems to bring them close to nature;
4. Organize and manage awareness drives for promoting forest management on an ecosystem basis; and
5. Mobilize support for this cause from all interested persons, groups and organizations.

Principles:

ForEcoIndia stands for the following key principles that should govern management of public forests in India:

1. Restore degraded forest ecosystems mimicking nature.
2. Discourage continuation of shelter wood system of management.
3. Discourage/ abandon totally coppice system of management.
4. Conversion of coppice forests to high forests.
5. Promote selection system of forest harvesting/ harvesting based on control method.
6. Promote replacement and enrichment of degraded exotic species monoculture plantations by mixed indigenous species.
7. Promote mixed indigenous species plantations.
8. Soil condition should be improved by preventing extraction of dry and fallen leaves and twigs. Soil moisture conservation methods should be applied in all areas.
9. Chemical fertilizers and pesticides should not be used in public forests or plantations on forestlands.
10. Unregulated grazing should be replaced by regulated rotational grazing in forests.
11. Unregulated and indiscriminate collection of firewood by cutting small trees, saplings and lopping should be prevented. Management should be modified to provide regulated alternatives to the dependent communities.

12. Promote Social Forestry/ agro forestry.
13. Shrubs, herbs, grasses, small size trees, undergrowth should not be removed indiscriminately.
14. Site-specific plans should be prepared for restoration of degraded ecosystems.
15. Also, soil and moisture conservation methods should be an integral part of afforestation/reforestation operations. It will also increase biomass productivity.

Action Plan

The proposed 5-point action plan will include the following activities:

1. Communication and dissemination

Seminars/conferences/symposia/workshops; Awareness raising activities; publications; use of media.

2. Advocacy and lobbying

Meetings and writing to actors involved in forest and using alliances to influence management on ground and at policy and decision level.

3. Networking

Building alliances like-minded individuals and institutions supportive of the cause to further the objectives of the campaign.

4. Research and studies

Case studies and evidence based research to support the ecosystem approach.

5. Capacity building of stakeholders

Possible sources of Funds

- Sponsorship for specific events/ publications/Research
- Members contributions
- Voluntary contributions
- Private sector