
PROMOTING AND SUSTAINING FOREST CONSERVATION POLICIES: AS A STRATEGY FOR COMBATING CLIMATE CHANGE

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Abstract

This paper highlights the problems and prospects of promoting and sustaining forest conservation policies for a carbon free world. The relevance, objectives and issues to be considered in developing forest conservation policies are outlined. The paper emphasized that more effective measures and approaches are required at the national level to improve and harmonize policy formulation, planning and programming. The paper recommended the participation of the general public especially women and indigenous people, forestry extension and public education, improvements in research capabilities and supports etc. to ensure a rational and holistic approach to the sustainable and environmentally sound development of forests.

Keywords: Forest Conservation, Climate Change Mitigation, Sustainable Forest Management, Environmental Policy

Introduction

A forest is defined as land that has at least 10% of its area in trees (Smith et al. 2001). Forests are highly valuable renewable resources and diversified ecosystems that provide a variety of environmental services in addition to paper and wood products. Forests provide crucial wildlife habitat and offer a range of recreational experiences, from hunting to hiking (Daniels and Daniels 2003).

Forests world-wide have been and are being threatened by uncontrolled degradation and conversion to other types of land uses, influenced by increasing human needs; agricultural expansion; and environmentally harmful mismanagement, including, for example lack of adequate forest-fire control and anti-poaching measures, unsustainable commercial logging, overgrazing and unregulated browsing, harmful effects of airborne pollutants, economic incentives and other measures taken by other sectors of the economy; (Earth Summit 1992).

The impacts of loss and degradation of forests are in the form of soil erosion; loss of biological diversity, damage to wildlife habitats and degradation of watershed areas, deterioration of the quality of life and reduction of the options for development. The present situation calls for urgent and consistent action for conserving and sustaining forest resources.

THE OBJECTIVES OF FOREST CONSERVATION POLICY:

The need for securing the multiple roles of forests and forests lands through adequate and appropriate policy cannot be overemphasized. This is especially important to ensure a rational and holistic approach to the sustainable and environmentally sound development of forests.

These policies are intended to ensure the regeneration of forests; to provide some environmental safeguards for soils, water and wildlife, and to prevent nuisances that would harm neighbouring land owners or the general public (Fishman 2002, p. 236).

The objectives of forest conservation policies are:

- To enhance the scope and effectiveness of activities related to the management, conservation and sustainable development of forests, and to effectively ensure the sustainable utilization and production of forests' goods and services.
- To maintain existing forests through conservation and management, and sustain and expand areas under forest and tree cover, through the conservation of natural forests, protection, forest rehabilitation, regeneration, afforestation, reforestation and tree planting, with a view to maintaining or restoring the ecological balance and expanding the contribution of forests to human needs and welfare.
- To ensure sustainable management and where appropriate, conservation of existing and future forests resources.
- To Maintain and increase the ecological, biological, climatic, socio-cultural and economic contributions of forest resources.

FOREST CONSERVATION POLICIES, ISSUES AND PLAN DEVELOPMENT

There are major weaknesses in the policies, methods and mechanism adopted to support and develop the multiple ecological, economic, social and cultural roles of trees, forests and forest lands.

Forest areas can be an important part of a rural community's identity and economy. The value of forestry for timber production and environmental and recreational purposes should be

identified. More effective measures and approaches are often required at the national level to improve and harmonize policy formulation, planning and programmes.

To ensure a rational and holistic approach to the sustainable and environmentally sound development of forest conservation policies, the legislative measure and instrument, development patterns must take into consideration: -

1. Participation of the general public, especially women and indigenous people, involvement of youths, roles of the private sector, local organizations, nongovernmental organizations and cooperatives.
2. The development of technical and multidisciplinary skills and quantity of human resources, forestry extension and research capability and support, dissemination of information and public relations.

Planning for a sustainable forest conservation policy requires a systematic approach so as to avoid conflicts from the various stakeholders. Some of the procedures to be adopted in developing a forest conservation policies includes: -

1. Goal and Objectives

The objectives of the policy should be properly spelt out giving particular attention to human needs for economic and ecological services, wood-based energy, agroforestry, non-timber forest products and services, watershed and soil production, wildlife management, and forest genetic resources. The Natural Resources, Economic Base, and Land Use Sectors of the Comprehensive Plan should provide objectives for limiting nonforests development and protecting the environment (Daniels and Daniels 2003).

Table 1: Sample, goals and objectives of forest resources in the comprehensive plan.

NATURAL RESOURCES

Goal	To encourage the sustained yield management of forests for timber resources, recreational uses, and environmental services.
Objective	Monitor the impacts of timber operations on the environment, including water quality, noise levels and important wildlife species habitat.

ECONOMIC BASE

Objective	Promote replanting and selective cutting practices to maintain the economic value of forest resources over time.
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LAND USE

Objective	Keep commercial timber operators away from sensitive environmental areas, such as steep slopes, thin soils, watersheds for drinking water and wetlands.
Objectives	Separate areas designated for future growth from existing commercial timber sties.

Source: Daniels and Daniels, 2003.

2. INVENTORY

The inventory of the forestlands should include: -

- To carry out a feasibility study to update survey and GIS mapping on existing forest cover; watersheds, timber sustainability ratings for soils.
- To survey habitats and wildlife populations within the proposed forest. Find out the endangered or threatened plant or animal habitat, in order to confirm their ecological viability and any measures needed for their conservation.

- To note the existing industrial, nonindustrial and public forest locations.
- To identify tree species and current forest practices.
- To describe the value of timber production and the location of mills and any forest-related business in the community.

3. PUBLIC CONSULTATION

The local stakeholders within the proposed forest should be consulted (including local community resident, relevant government agencies and concerned NGOs in order to identify various users of the proposed forests, and potential conflicts of interest or perception among them, and to take these into account in management planning. Forest land protection requires cooperation from state, federal, local government and private land trusts as well as landowners who want to see their land remain available for timber harvesting and other purposes.

4. IMPACT ANALYSIS

The analysis should use the future population projection of the Comprehensive Plan and Land and Water Suitability Analysis to evaluate the likely impacts of potential growth on the community's forestlands and local economy. The analysis should also suggest alternative scenarios to accommodate growth, current forest practices and identified adverse environmental impacts should also be evaluated and approaches to mitigate them discussed. High-priority forestlands for timber, recreation and environmental services should be identified for protection. Statewide, national and international trends in timber production should be examined for ways in which they could affect the local forest economy and use of forestlands.

A planning commission should focus on the potential impacts of proposed timber related development or proposed nonforestry development on both commercial forestry and the forest environment. For projects related to industrial forestry, the planning commission should focus on the potential environmental impact (see table 2). For proposed nonforestry developments, such as residential subdivisions, the main concern is the conversion of forestland next to active logging operations.

Table 2: A checklist of Forestry – Related and Nonforestry Related Issues in a Development Review.

1	Does the zoning allow the proposed project? Are setbacks and buffers from property lines met?
2.	What is the area of tree cover on site? Are there areas of old growth or trees of more than 100 years old?
3.	What harvesting rates and practices are planned?
4.	Will new roads be built or existing roads widened? What measures will be taken to reduce erosion potential?
5.	What are the land uses on adjacent properties?
6.	What will be the impact on water quality and supply? How will these impacts be mitigated?
7.	What will be the impact on wildlife and recreation? How will this be mitigated?
8.	Are there planned buffer strips along streams, roads or property lines? Is there planned woodland retention and replacement.
9.	Has the developer obtained any necessary state or federal permits.

Source: By the Author

5. ACTION STRATEGY

The Action Strategy should present techniques and programs for achieving the forestland goals and objectives as well as a timetable (Bryson 1999). Forest protection benchmarks should be identified and progress toward those benchmarks evaluated. Specific recommendations might include the following:

(a) ZONING ORDINANCE

Apply forest zoning to a critical mass of commercial timberland. Zoning can be an effective tool to protect commercial forestlands, by separating working forests from potential conflict residential and commercial land uses (Cromwell 1984). Timber Production Zones (TPZ) may be created to designate lands for timber production and exclude all other uses. TPZs have kept the price of forestland affordable for timber harvesting by discouraging nonforest buyers (Cromwell 1984, 158).

Some suburban communities have enacted ordinances banning the clear cutting of timber, citing loss of privacy with fewer trees, threats to drinking water supplies and wildlife habitats, increased flood damage, and reduced property values (Revkin 1997).

(b) SUB-DIVISION REGULATIONS

Forest-related activities will be subjected to state laws regulating forest practices (Montaigne 2000). Where state standards are weak and communities are not preempted from adopting their own forest protection standards, they may do so in the subdivision regulations. The subdivision ordinance can require buffering berms and vegetation between residences and commercial forest sites. Developers can be required to retain a certain percentage of trees of a certain size to replace trees destroyed during construction, and to plant trees on site, particularly along roads, in parking lots, along stream banks and on steep slopes. Any trees ordinance should ensure that utility rights-of-way are kept free of trees.

(c) RESEARCH AND MONITORING

The continued functioning of the forest conservation policy will depend largely on the ability of the management to appraise the impact of its activities and make use of the data generated by scientific study of the endangered flora and fauna to work out sustainable policies and guide lines. This responsibility requires a sustained research and monitoring programme to provide feedback information for follow up actions.

(d) PROTECTION/ENFORCEMENT

The key objective of the entire forest conservation policies is the protection/preservation of the forest and forest resources. The function of this unit is to ensure that the demarcated zones are adequately protected through constant surveillance and policing. The enforcement mechanism will also be built in, to ensure that permits and their purposes are complied with.

THE PROSPECTS OF FOREST CONSERVATION POLICIES

The vast potential of forest and forestlands as a major resource for development is not yet fully realized. The improved management of forests can increase the production of goods and services and, in particular, the yield of wood and non-wood forest products, thus helping to generate additional employment and income, additional value through processing and trade of forest products, increased contribution to forest exchange earnings, and increased return on investment.

Forest resources, being renewable, can be sustainably managed in a manner that is compatible with environmental conservation. The forests are the “lungs” of our land,

purifying our air and giving fresh strength to our people (Frank D. Roosevelt cited in Little 1997, 15).

The implications of the harvesting of forest resources for the other values of the forest should be taken fully into consideration in the development of forest policies. Harvests cannot exceed growth if forests are to continue providing healthy fish and wildlife habitats, clean and pure drinking water and scenic beauty (Jehl, 2000).

It is also possible to increase the value of forests through non-damaging uses such as ecotourism and the managed supply of genetic materials.

Forests serve as carbon sequestration. Carbon sequestration is the storage of carbon. Forests are well known carbon sinks because they absorb carbon dioxide and release oxygen into the atmosphere, thus helping to regulate global warming. An acre of trees can absorb about 10 tons of carbon dioxide a year (Little 1997, 205). Selective cutting of forests can result in an annual net storage of carbon, whereas clear cutting creates a net carbon release into the atmosphere, contributing to global warming.

The 1997 Kyoto Protocol of the United Nations Framework convention on climate change, signed by 164 countries, is intended to reduce greenhouse gases that contribute to global warming. The primary mechanism to achieve reductions is the establishment of an international trading system in carbon credits (Schlamadinger et al. 2000). This trading system is similar to the sulfur air pollution trading credit used in the United States. Carbon generating businesses, such as energy, utility and manufacturing companies will need to buy carbon credits or significantly reduce their output of carbon. The purchase and protection of timberland is one way that these businesses can help to reduce overall greenhouse gas emissions, especially carbon dioxide (Natural Resources Conservation Service 2001).

Forest conservation policies will help to improve the recognition of the social, economic and ecological values of trees, forests and forest lands, including the consequences of the damage caused by the lack of forests.

It will promote methodologies with a view to incorporating social, economic and ecological values of trees, forests and forestlands, into the national economic accounting systems; to ensure their sustainable management in a way that is consistent with land use, environmental considerations and development needs.

Conserving the forests will help to promote efficient, rational and sustainable utilization of all types of forests and vegetation inclusive of other related lands and forest-based resources, through the development of efficient forest-based processing industries, value-adding secondary processing and trade in forest products, based on sustainably managed forest resources and in accordance with plans that integrate all wood and non-wood values of forest.

THE PROBLEMS OF FOREST CONSERVATION POLICIES

In the development of forest policies, concerted action is needed in order to increase people's perception of the value of the forests and the benefits they provide, taking due account of the local needs and cultural values. The survival of forest conservation policies depends to a great extent on succeeding in this endeavour.

Forests areas can be an important part of a rural community identity and economy. Forestry practices often raise heated debate because of the trade-off between harvesting methods and environmental damage. The department of forestry must assess the cumulative impact to the environment that the harvest plan might generate (Harris 1997, 184, 198).

In forest conservation policies, assessment and systematic observations are essential components of long-term planning for evaluating effects, quantitatively and qualitatively, and for rectifying inadequacies. The mechanism, however, is one of the often-neglected aspects of forests resources management, conservation and development. In many cases, even the basic information related to the area and type of forests, existing potential and volume of harvest is lacking. In many developing countries, there is a lack of structure and mechanism to carry out these functions.

There is an urgent need to rectify this situation for a better understanding of the role and importance of forests and to realistically plan for their effective conservation, management, regeneration and sustainable development.

PROMOTION AND SUSTAINING FOREST CONSERVATION POLICIES

Forest conservation policies are intended to ensure the regeneration of forests, to provide some environmental safeguards for soils, water and wildlife and to prevent nuisance that would harm neighbouring landowners or the general public. Sustaining and promoting forest conservation policies will require:-

1. Improving opportunities for participation of all people, including youth, women, indigenous people and local communities in the formulation, development and implementation of forest-related programmes and other activities, taking due account of the local needs and cultural values.
2. Promoting/popularizing non-wood forest products and other forms of forest resources, apart from fuel wood (e.g medicinal plants, dyes, fibres, gums, resins, fodder, cultural products, rattan bamboo) through programmes and social forestry/participatory forest activities including research on their processing and uses.
3. Stimulating development of urban forestry for the greening of urban, peri-urban and rural human settlement for amenity, recreation and production purpose and for protecting trees and grooves.
4. Carrying out revegetation in appropriate mountain areas, highlands, barelands, degraded farmlands, arid and semi-arid lands and coastal areas for combating desertification and preventing erosion problems and for other protective functions and national programmes for rehabilitation of degraded lands, including community forestry, social forestry, agro forestry, silvipasture, while also taking into account the role of forests as national carbon reservoirs and sinks.
5. Increasing the protection of forests from pollutants, fire, pests and diseases and other human made interferences such as forest poaching, mining and unmitigated shifting cultivation, the uncontrolled introduction of exotic plant and animal species as well as developing and accelerating research for a better understanding of problems relating to the management and regeneration of all types of forests.
6. Alternative form of energy apart from fuel wood energy should be popularized.

RECOMMENDATIONS/CONCLUSION

More effective measures and approaches are required at the national level to improve and harmonize policy formulation, planning and programming. Government at the appropriate level should facilitate and support the effective implementation of the non-legally binding

authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all type of forests, adopted by the United Nations Conference on Environment and Development.

Promoting participation of the private sector, labour unions, rural cooperatives, local communities, indigenous people, youth, women, user group and nongovernmental organizations in forest related activities and access to information and training programmes within the national context.

Establishing, developing and sustaining an effective system of forest extension and public education to ensure better awareness, appropriation and management of forest with regard to the multiple roles and values of trees, forests and forest lands.

Rationalizing and strengthening administrative structures and mechanisms, including provision of adequate levels of staff and allocation of responsibilities, decentralization of decision-making, provision of infrastructural facilities and equipment, inter-sectoral coordination and an effective system of communication.

The aforementioned recommendations are important towards a rational and holistic approach to the sustainable and environmentally sound development of forests.

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