

The Role of Policy in Forest Resource Development

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A nation that wishes to enhance its social and economic well-being through more intensive utilization of its forest resources must develop a rather comprehensive policy statement to ensure that the expanded exploitation does not lead to the destruction of these resources. The policy must specify the goals to be achieved, provide general direction on how these goals can be achieved, and develop a system of checks-and-balances to ensure achievement of the long-term objectives. The policy must consider resource protection, the economic needs at the various levels of government, the social impacts of utilization on ways of life in all areas of the nation, and the infrastructure needed in the short and long terms.

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Introduction

A well-conceived and carefully followed set of forest policies is essential for the proper management of public and private forests wherever there is an economic scarcity of forest resources. The need for sound policies in forestry is especially great because of the long periods required for forest development. Without sound policies and their attendant plans for management and utilization, it is easy to overutilize forest resources, as many nations in the world are now doing.

Sound management and utilization, with all their financial, physical, and biological constraints, are the end product of a long and sometimes agonizing decisionmaking process. That process begins with the establishment of national, institutional, or organizational policies with respect to forests.

Most people would agree that the utilization of renewable natural resources like forests over a large area should, in the long run, enhance the quality of human existence

for the people in that area. In many places in the world, however, the utilization of forest resources has resulted in the destruction of the resource base and a decline in the quality of life for most people in the areas. It is inconceivable that these results were envisioned as deliberate national policy. Rather, they were undesirable and largely unforeseen side effects. They were results of excessive emphasis on national economic needs; of a lack of understanding of the physical, biological, economic, and social aspects of forest exploitation; and of the failure to create the proper infrastructure.

Throughout the world, forest resources are being exploited without regard to their reestablishment. Tropical hardwood forests are being overcut for timber and shifting agriculture, and arid land vegetation is being overutilized for grazing and fuelwood (Office of Technology Assessment 1983). The immediate and desired result of forest clearing often has been the opening of new land for agriculture, which has improved the flow of capital

into the national economy. In tropical areas, however, the long-term results have often been disastrous. The soils have proved incapable of continuous cropping. They have been cropped to exhaustion, then abandoned. Where forest vegetation has not returned by natural means, erosion has been severe. Moreover, cropping has often reduced soil fertility to the point where the soil will not support forest stands of sufficient quality for future economic needs.

Policy development

Policy development is the first step in the decisionmaking process that avoids these disasters through proper management and utilization of forest resources. The policy must specify the goals of management and utilization activities and describe the parameters and limitations within which the activities can take place. The policy statement provides responsible officials with the objectives that must be achieved while defining the side effects that must not be allowed to occur. Such policies must be specific and realistic, and within the biological and physical constraints of the natural ecosystem. Moreover, policies must be based on the concept that product output will be periodic or continuous over a long period of time.

To repeat, a forest policy is the statement of the aims or goals to be achieved by the exploitation of the forest resources. All other factors that influence management or utilization activities are simply parameters that define the application of the policy. However, the relationship between policy and management activities is a two-way street. If one of the parameters overly constrains the application of a policy, the policy must be modified to reflect the reality of conditions on specific sites. In most cases, management activities are adjusted to meet policy definitions, but under some conditions, biological or physical constraints may require that the policy be adjusted if the resource is to be used to best advantage.

In policy development, the immediate and

the long range goals must be specified, evaluated and prioritized. Points of conflict must be identified and procedures for avoiding or minimizing conflict established. Alternative procedures must be developed and the most acceptable one designated. Schedules must be adjusted to ensure that policy goals are being achieved under the acceptable alternative. Potential adjustments should be identified so that shifts to other activities can be made if it appears that the goals are not being reached. Policy failures are usually caused by excessive emphasis on meeting economic needs; misreading of physical, and biological or social needs; and lack of infrastructure.

Resource protection

Forest resource policy must provide for maintenance of the ability of the forests of a nation to produce tangible and intangible products for the foreseeable future. Any action that prevents regeneration of forests with marketable species should be forbidden under the policy.

Hallsworth (1982) argues that protection must be the first emphasis of policy. He divides protection into five basic areas: (1) preventing erosion, (2) maintaining water quality and quantity, (3) providing wildlife habitat, (4) maintaining the pool of genetic resources, and (5) providing recreation opportunities.

Unfortunately, the obvious need to protect the ability of forests to supply human needs is often overlooked for the sake of immediate human needs that appear to be more pressing. Bunker (1980) concludes that Brazil is sacrificing social and natural environments to satisfy immediate political and economic demands for exportable commodities. He argues that the process threatens the "profound impoverishment of the Amazon Basin".

The Brazilian policy reflects in large measure a lack of understanding of the physical and biological characteristics of the natural ecosystems at the policy making level. Natural resource utilization must be tailored to the environmental conditions imposed by cli-

mate, topography, and requirements. Yet most developing nations will not accept a slowing of development to protect the environment. Too often, other considerations have a higher priority than the environment. For example timber harvesting followed by slash-and-burn agriculture can be extremely detrimental to the forest resource. However, it is encouraged in some nations to provide for the social needs of small, often landless farmers living in the forested areas. Thus, the social aspects of forest exploitation outweigh the vegetation regeneration requirements. On the other hand, some countries have been able to find compromises that permit the small farmer to be productive without adversely affects the environment (Hoskins 1983).

National economic needs

In a nation that is trying to expand its economic base, there is always a strong temptation to utilize natural resources to provide immediate economic returns for investment in other sectors of the national economy. However, this approach too often has adverse impacts on the future productivity of the forest lands involved. Expectations of returning at a future date to rehabilitate the abused lands have, historically, not been realized. The pressures of current needs prevent expenditure of time or resources for rehabilitation of cutover or otherwise abused lands.

The driving force behind most forest utilization activities, especially those that can have a lasting adverse impact on the forest, is economic need. The present decline in tropical rain forests is largely a result of the need to improve national economies. Slash-and-burn agriculture and sheep and goat grazing are destroying tropical forests, but a larger problem is cutting of tropical forests by large nonlocal firms. Most of the proceeds from the sale of the timber go out of the community and frequently out of the country. Rao and Chandrasekharan (1983) point out that logging for export concentrates on commercially exploitable species, ignoring forest products

or industries that can improve the living standards of nearby local communities. While such operations generate funds for national development, they leave in their wake depleted timber resources, erosion, and unfortunate water flow patterns.

The need for policy direction arises from the potential conflicts between the demands for economic and social benefits at national, regional, and local levels. Perceptions of needs and priorities vary widely among the three levels, and policy must reflect a consensus. Hallsworth (1982) points out that almost every nation has passed legislation to control the varying demands and to regulate interactions between them. However, most of this legislation has been focused on obtaining national economic benefits. While such legislation usually provides some local and regional economic benefits, such benefits are usually short-lived. In the long run, the effects of the emphasis on national economic benefits are adverse impacts on forests.

Local demands on the forest can also have adverse impacts. Fuelwood harvesting and grazing can destroy the forest's ability to produce quality wood products, and agriculture, even under the taungya system, frequently does not result in a proper reforestation of the area. And of course, cut-and-burn agriculture has an even more disastrous impact on the forest.

Earl (1975) argued that a forested nation might generate capital by prohibiting commercial logging and encouraging fuelwood production. The local people would be able to reduce their consumption of imported fossil fuels and invest the savings in industries. This concept of using forest products domestically to reduce expenditures on imported goods and using the savings in other areas seems to be growing in popularity. The introduction of large, mostly foreign-owned forest industries that are export oriented seems to be declining. There are just too many examples of such operations causing too much damage. The decline in tropical hardwood forests is largely attributed to the exporting of forest resources to increase capital flows.

Social forestry

A critical consideration in the development of forest policy is the social impact of utilization of the resource. Human populations are active components in the production, distribution, consumption, and development of forested ecosystems (Scerianegara 1982). Forest exploitation is carried out to improve human conditions, so the impacts of timber harvesting or other forest products removals must be evaluated. The positive and negative impacts that such activities may have on national, regional, and local social conditions must be considered both in the long and short runs. Care must be taken to ensure that, in the production of economic benefits, the ability of the resource to produce further economic benefits and intangible noneconomic outputs is not impaired. Lewis (1972) described the need for maintaining forest productivity over the long run and recommended an approach for ensuring such productivity. Pardo (1985) emphasized the need to develop forestry programs around what the UN Food and Agriculture Organization terms "forestry for local community development". However, the concepts identified by both authors are too narrow for today's world. Lewis' allocation of forest land to the production of specific products and benefits may ignore the potential for multiple use management, and Pardo's emphasis on "local community development" may put excessive limits on meeting national and regional needs.

A more positive way to address the social aspects of forestry has been developed by the World Bank as part of its efforts to help local communities. The Bank requires that all new loan requests for agriculture development contain a detailed plan for integrating forest utilization and management into the overall plan. In this way the Bank ensures the the development of forest resources is not neglected during the development of agricultural resources. Moreover, the requirement increases the awareness of the role that forest resource utilization can play in improving the social and economic conditions in rural communities.

Nations going through a period of rapid industrialization are prone to view natural resources as sources for investment capital for

other industries. Forest-based industries can aid in capital formation, labor development and agricultural progress. They frequently flourish during the transition from agricultural to industrial predominance because they make excellent use of the limited capital available during the development period. However, if the capital that these industries develop is siphoned off to build other industries and none is left for the management of the forest land used by the forest based industries, then the forest resource is destroyed and all potential benefits, tangible and intangible, are lost. Diaz (1982) reports that in the Philippines forest industries are highly mechanized and integrated and are heavily capital intensive. Their significant contributions to the national economy, however, are offset by the forest destruction arising from their cutting activities.

Infrastructure

In 1983, a special issue of *Unasylva* was devoted to forest administration for development. Topics included organization, legislation, land use planning, and forestry research and educational facilities. However, there was a thread of commonality running through all of the articles — the need to develop the infrastructure to make optimum use of natural resources. Efficient use of available forest benefits requires a host of things — financial institutions, manufacturing facilities, transportation networks, and distribution systems. Collectively, this host of things is called infrastructure. It is the "mechanical" system that conducts and supports the activities required for the successful long-term utilization of forest resources.

The need for infrastructure is well illustrated in the recent efforts to aid the starving people in Ethiopia. The policy of the more affluent nations of the world is to provide aid to famine-stricken countries, and relief supplies were shipped to Ethiopia. The relief supplies arrived at the major airports and seaports there, but they could not be distributed to the refugee camps inland in the

quantities needed to alleviate the situation. Highways were in poor condition, and there weren't enough trucks or railcars. An excellent policy was almost defeated by the inability of one segment of the infrastructure to perform as expected.

Forest utilization is often viewed simply as the turning of timber into financial gain. The process is much more complex than that. It requires policy direction, legislative actions, financial institutions, manufacturing facilities, and transportation networks. The infrastructure — the facilities — are absolutely necessary for successful long-term utilization of forest resources.

Forest policy must consider the development of the infrastructure that will be needed to fully realize the potential of the forested area. This consideration must extend beyond the needs for exploitation of the forest resource. A properly designed infrastructure can also lead to expanded agriculture, and to industrial growth (Lewis 1967). The roads and railways that were developed to transport forest products can be utilized to transport agriculture products grown on selected cleared tracts. The repair facilities developed to maintain logging and sawmilling equipment can also be used for agricultural and industrial equipment. The banking and medical facilities can serve nonforest-based activities, and consumer goods suppliers can supply farmers or industrial workers as well as loggers.

Conclusions

A nation that wishes to enhance its social and economic well-being through more intensive utilization of its forest resources must develop a rather comprehensive policy statement to ensure that the expanded exploitation does not lead to the destruction of these resources. The policy must specify the goals to be achieved, provide general direction on how these goals can be achieved, and develop a system of checks-and-balances to ensure achievement of the long-term objectives. The policy must consider resource protection, the

economic needs at the various levels of government, the social impacts of utilization on ways of life in all areas of the nation, and the infrastructure needed in the short and long terms.

The role of forest policy in natural resource development is to specify the goals to be achieved and provide guidelines within which management activities can be conducted. Policy acts as a guide to ensure that all aspects of natural resource utilization are considered, evaluated, and prioritized so that the nation achieves the maximum net benefit from its natural resources.

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Part IV

EFFECTIVENESS OF FOREST POLICY PROGRAMS ON PRIVATE FORESTRY INVESTMENTS