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Small-scale Forestry

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Introduction

This article reviews various aspects of small-scale forestry in the world, with an emphasis on industrialized countries. Definitions and demographic information on small-scale forestry are discussed. Aspects of administrative structures and policy instruments for small-scale forestry are presented. In particular, the importance of forestry to social welfare is noted, and the role of small-scale forests in conducting environmentally and socioeconomically sustainable forest management is discussed.

Small-Scale Forestry in the Center of Interest

Forestry has traditionally been conducted in most countries mainly by the public sector on public land or by industrial companies on large-scale natural forest areas or plantations. On the other hand, private nonindustrial and small-scale management of forests has been dominant in Western Europe and Japan, where forests may remain in the ownership of the same family for centuries. In recent years, there has been a trend to move gradually away from large-scale forestry towards landholder-based small-scale forest management. This trend is especially clear in developing countries in Africa and in Asia, as well as in the former socialist countries of Eastern Europe.

Small-scale forestry has been recognized as a promising tool in achieving the multiple forest-related

objectives of society, as well as in addressing the various global environmental issues of today. Regardless of the fact that the demand for forest industry products is continuously growing, environmental considerations and recreation have become increasingly important, often competing with financial considerations and wood production. Around the world, loss of biodiversity has become a major concern in the management of forest lands. Substantial deforestation has taken place in many developing countries. The wide range of social, economic, and ecological objectives of forest management are seen to be better met by small-scale forestry rather than by large-scale forest management.

What is Small-Scale Forestry?

It is apparent that small-scale forestry means different things in different parts of the world. There is no simple or consistent definition of what constitutes small-scale forestry. A farmer operating with a woodlot of 5 ha would certainly be a small-scale forest owner, whereas an industrial company with thousands of hectares would be large. But in between these examples there exists a wide variety of sizes that can be considered either small or large depending on the viewpoint taken.

There is no comparable or consistent statistical information about the amount of small-scale forests in different countries and continents. According to the latest United Nations Economic Commission for Europe/Food and Agriculture Organization statistics, private forest ownership plays a significant role in Japan (59%), Europe (55%), North America (37%), and New Zealand (31%). However, it is important to make a difference between small-scale forestry and private forestry, as private does not always mean small.

The terms 'small-scale forestry,' 'nonindustrial private forestry,' 'family forestry,' and 'farm forestry' are parallel and they are used rather synonymously to separate this type of forestry from industrial or public large-scale forestry. Small-scale forestry differs in many ways from large-scale forestry, for example, in aspects such as motivations for the establishment and management of forests, social and economic objectives of forestry, and the likely markets for wood and non-wood forest products.

Appearance of Small-Scale Forestry in Selected Countries

In the USA, the term adopted for small-scale forests is nonindustrial private forests (NIPFs) referring to forestlands owned by farmers, other individuals, and

corporations that do not operate wood-processing plants. NIPFs account for 59% of total timberland in the USA, and contribute nearly half of US timber production. In total, there are about 7 million NIPF landowners. Only about 600 000 holdings are larger than 40 ha, yet they contribute 80% of the NIPF harvest.

In Canada, private land ownership is unusually low in comparison with other developed countries. Only 6% of forest land is privately owned, whereas some 70% is provincially owned, with an additional 23% being owned federally by the national government.

In Japan, family-owned small-scale forestry is present in an extreme form: of the 2.5 million forest households, 1.5 million hold less than 1 ha. Nearly 90% of forest holdings are less than 2 ha. The national average for a forest holding is 2.7 ha. Private small-scale forests make up 59% of all forested area, providing almost 75% of the timber harvested. In recent years, these small-scale forests have become increasingly important because of drastically decreased timber production in national forests. No large forest land-holding companies are currently active in Japan.

In Australia, the term 'farm forestry,' or 'agroforestry,' is widely used due to the fact that forestry is often integrated into the farm business, generating revenue and environmental services to complement other enterprises on the farm. Unlike many European countries and Japan, farm forestry is a relatively new phenomenon in Australia, with the majority of farm forests being early in their first rotation. This is due to the fact that forestry activities were traditionally based on the exploitation of the extensive eucalypt forests that existed at the time of European settlement. However, nowadays significant areas of native forest have been withdrawn from timber production and placed within conservation reserves. As this trend is likely to continue, the role of plantation forests is becoming increasingly important. These plantations are mainly established by large-scale industrial companies, but plantations among small-scale farmers are also increasing.

In Europe, there is no commonly adopted term for small-scale forestry, though 'family forestry,' launched by the Nordic countries, has recently gained ground in Central Europe where the term 'farm forestry' has traditionally been used most often. Forest land ownership in Europe is approximately equally distributed between public and private owners. However, in Western Europe two-thirds of forest land is privately owned, whereas in Eastern Europe forests are mainly public domain, although this is now changing rapidly with privatization in the formerly socialist countries.

Most European countries have large numbers of smallholdings. In the 15 member countries of the European Union, there are approximately 12 million private individuals who can be classified as forest owners. In France and Belgium, more than 90% of the holdings are under 5 ha. This is in contrast with Sweden and Finland, where 25% and 14% of holdings respectively are larger than 50 ha. Private forests contribute most of the industrial timber as well as other wood and non-wood products. Due to the significance of private ownership, small-scale landowners are an integral part of forest policies, forest management planning, and forest extension in Europe.

Administrative Aspects of Small-Scale Forestry

In most countries small-scale forest owners have established voluntary national organizations, associations or other such establishments, to promote sustainable forest management, to serve as a link between forest owners, and to represent them in forest policy-making. In many countries these organizations, varying with legal bases and organizational arrangements, also provide help in timber sales and silvicultural operations.

A number of international organizations for forest owners also exist. For example, the Confederation of European Forest Owners (CEPF) was established in the 1990s to form an umbrella organization of the national forest owner organizations in Europe. The most recent establishment is the International Family Forestry Alliance (IFFA), representing some 30 million family forest owners in Europe and North America.

In the governmental systems of most countries, small-scale forestry has traditionally been under agricultural administration, due to close linkages between forestry and farming. Only in some countries, e.g., Finland, has the role of forestry been emphasized by naming the ministry as Ministry of Agriculture and Forestry. A few countries, including Portugal, have a separate Directorate General for forestry administration.

The practical implementation of public forest policies on private lands typically falls under the responsibility of governmental field organizations at the regional and district level. Recently, there has been an international trend towards lighter public administration. Therefore, forestry administrations throughout the world have also faced budget reductions. In addition, along with the increasing number of nonfarmers as forest owners, the link between forestry and agriculture has gradually weakened. There has been some consideration about

whether forestry administration should be made more independent of agriculture; whether there should be a common administration for all natural resources; or whether forestry should be merged with the environment (as in Denmark), industry, or trade portfolios (as in Sweden).

Small-Scale Forestry in Resolving Global Issues

In the past, the main emphasis of forest policies on small-scale forestry was to ensure a constant flow of timber to the processing industries. In recent decades, growing environmental consciousness has raised the ecological perspective to a more central position. Countries around the world have been active in taking on commitments concerning the protection, development, and sustainable management of forests.

A crucial step in this direction was the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992. The UNCED has given forests an increasingly important role in the context of sustainable development and environmental conservation. The concept of sustainable forest management has been recognized as a fundamental guiding principle by all participating countries.

As many as 149 countries, representing 85% of the world's forests, are engaged in efforts to identify criteria and indicators of sustainable forest management, and to collect information on the indicators. Over the last 10 years, a number of private initiative certification systems have evolved based on these criteria and indicators. There seems to be no 'one-fits-all' solution when it comes to certification of sustainable forest management, but one has to support bottom-up approaches within the different regions and countries.

During the international follow-up processes of Rio, small-scale forest owners have been seen as key partners for the implementation of sustainable forest management. In the first phase, the emphasis was on ecological aspects of sustainability. The contribution that forests can make to the environment in such diverse areas as water catchment protection, habitat creation and conservation, and recreation is now widely recognized. Increasingly, forest owners are either required by statute or influenced by financial incentives to alter their management practices to increase these environmental benefits, or to decrease environmental costs.

Recently, socioeconomic aspects of small-scale forestry have gained increasing attention. For example, in the resolutions of the European Ministerial Conference in Lisbon in 1998, socioeconomic

sustainability was given the main emphasis. Probably the most important socioeconomic aspect related to small-scale forestry is the income from forests, which can play an important role in maintaining a sound social structure, and thus, forestry can contribute to the overall economy of rural areas.

Generally, farm forests are concentrated in rural and mountainous areas, which are economically disadvantaged compared with industrialized areas, and undergoing depopulation. Therefore, farm forestry has a key socioeconomic role relevant to policies at regional, national, and international levels. Attention is paid not only to traditional questions such as the continuing viability of individual farms, to which the production of timber and other products can contribute, but also to more recent questions such as the contribution that the landscape value of attractive woodlands can make to the rural economy through tourism.

In the ongoing debate on forest policies, the role of forests in implementing the 1997 Kyoto Protocol to the Framework Convention on Climate Change has also raised much discussion. Developments towards a market for carbon emissions by governments and industries preparing for national reductions of greenhouse gas emissions have stimulated interest in the carbon sequestration values of forests. Forest owners could have the opportunity to manage their forests for carbon, along with other wood and non-wood products. Emissions trading could provide positive cash flows earlier than usually available from wood production, thus improving profitability. For the moment, however, the forest policy implications and practical consequences of the Kyoto Protocol remain unclear.

The most recent milestone in the international debate on the various aspects of sustainable development was the World Summit on Sustainable Development, held in Johannesburg in 2002.

Forest Policy Instruments for Small-Scale Forestry

Considerable differences exist in forest policy instruments between countries. In most countries the full range of policy means – normative, financial, material, and informative – has been adopted. However, the policy instruments are modified by so many conditions and variations that it is not possible to draw simple comparisons.

A fundamental review and reappraisal of forestry legislation has recently been or is currently being undertaken in many countries, in the light of the new priorities identified during the widespread debate on sustainable forest management.

Taxation and subsidies strongly influence the economic performance of small-scale forests. Differences can be observed in the balance between property taxation and income taxation, as well as indirect taxes such as value-added and fuel taxes. In this connection, special mandatory fees connected to timber sales have to be mentioned, as well as the general tax load on income, including social security fees which influence labor costs.

In general, financial support for forestry measures is at a rather low level, and normally only part of the costs of forestry measures can be covered by public support. Partial public support is typically available in many countries for measures such as regeneration of harvested areas, noncommercial thinning of young stands, forestry road building and maintenance, and forest fire protection.

The economic performance of small-scale forests is of importance for various policy objectives, but the availability and comparability of the information required to assess economic performance are not sufficient. Hence, evaluation of the efficiency of the policy tools is difficult. Indeed, the recent economic and political developments suggest a need for a more comprehensive information base and analysis on the socioeconomic situation of small-scale forestry.

Due to agricultural overproduction, one of the major concerns in industrialized countries has recently been the extent to which agricultural land can and should be converted to forestry or woodland, and the policy measures which would achieve this. For example, in almost all European countries there are policies to support farmers who convert their agricultural land to forestry.

Extension services, information distribution, and education are increasingly important forest policy tools. They activate forest owners to own contributions, and thus compensate for the reduced direct financial support for forestry measures. Indirect subsidies can be found in various forms, the most common example being the provision of management consulting services to small-scale private landowners by members of the forest service or foresters employed by semigovernmental institutions. Systematic forest management planning is seen as being one of the most important and efficient tools in many countries in this respect.

There appears an international trend to increase public participation in forest-related policy-making and decision-making. One sign of this is that national forest programs have become an important tool in the preparation of the future strategies for forestry. Evidently, small-scale owners play an essential role in

these strategies. Especially in countries where small-scale forestry is dominating, only the strategies that are accepted by small-scale owners can be successful.

Final Remark

An important aspect to be noted here is that the land ownership structure and management goals for forestry around the world are heterogeneous and becoming even more so. One indicator of relative importance of forests for society is the share of forest area per capita. Even within Europe the extremes are from 0.2 ha in the Netherlands to 4.0 ha in Finland. It is self-evident that the owner's expectations as well as public values related to forests cannot be the same in these two countries. Indeed, the significance of forest resources for owners, as well as for the public, varies tremendously between countries and continents. This, on the other hand, guarantees the diversity of forest uses and management practices in the world.

See also: Plantation Silviculture: Multiple-use Silviculture in Temperate Plantation Forestry. *Tree Physiology:* Forests, Tree Physiology and Climate.

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