

TRADE, SUSTAINABLE DEVELOPMENT AND GENDER IN THE FORESTRY SECTOR

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I. INTRODUCTION

In the forestry sector, discussions on trade, environmental and gender aspects tend to be conducted separately from one another. This overview paper attempts to bring these three areas together. Section II outlines the important goods and services derived from forests. Section III examines international trade in forest products, with a focus on recent trends in trade restrictions. Section IV looks at deforestation and possible linkages with trade in forest products. Sections V and VI discuss sustainable forest management and the means of achieving it, including timber certification and community forestry. Section VII looks at women as a main forest-user group in local communities. Section VIII identifies areas for future research.

II. GOODS AND SERVICES PROVIDED BY FORESTS

Forests provide a range of wood and non-wood products as well as social and environmental services. Meeting these various, often competing, demands and striking a balance between consumption and conservation are at the heart of the forest debate today.

A. Wood and non-wood products

Wood and wood products are the main commercial products of forests. They include fuelwood and charcoal (particularly important in developing countries), industrial roundwood, sawnwood, wood-based panels, wood pulp, paper and paperboard, semi-manufactures, and wooden articles. Demand for wood products - both industrial wood and fuelwood - has grown considerably in the last 25 years. According to FAO estimates, consumption of total roundwood (wood in the rough) increased by 40 per cent between 1970 and 1996 (from around 2,400 to 3,354 million cubic metres). "Total world roundwood production is dominated by fuelwood and charcoal, and about 90 per cent of this fuelwood production is in developing countries. Fuelwood consumption expanded more rapidly than industrial roundwood consumption, growing by 57 per cent, to 1,864 million cubic metres in 1996. Industrial roundwood consumption grew by 21 per cent to 1,489 million cubic metres in 1996 although actually declining from a high of 1,730 million cubic metres in 1990. Sawnwood production in the last 15 years has remained static ... In the case of

wood-based panels, growth in production has been substantial, both in developed and developing countries.” Developed countries produced and consumed some 70 per cent of industrial wood products (Bourke and Leitch, 1998 drawing upon data from FAO, 1997).

Between 1996 and 2010, global industrial roundwood consumption and production are projected to increase to 1,870 million cubic metres - an annual growth rate of 1.7 per cent. Within product categories, the paper and paperboard market is expected to grow the fastest, with annual growth rates of 2.4 per cent. Due to an expected increased use of recycled paper, the pulp market is projected to grow at a lower annual rate of 1.1 per cent. Consumption of sawnwood and wood-based panels is expected to grow at annual rates of 1.1 and 1.3 per cent respectively (FAO, 1999h).

Non-wood forest products (NWFPs) include food items (such as honey, nuts, berries, mushrooms and leaf fodder for animals), construction materials (including rattan and palm leaves), medicinal plants, other health care and cosmetic products, and items of cultural and spiritual significance. These NWFPs are primarily consumed at the local or national level, although some 150 are traded internationally in significant quantities. These include cork, essential oils, forest nuts, gum arabic, rattan and plant and animal components of pharmaceutical products. Around 80 per cent of the populace in developing countries use NWFP to meet nutrition and health needs (FAO, 1999g). Particularly for the poor in developing countries, NWFPs can be of crucial importance, both for the material needs of the family and as a means to generate a little income. This can be especially true for women in communities located near forests, sometimes providing their only source of cash inflow.

B. Social and environmental services

Besides their employment and income-generating possibilities, forests offer other social services including recreational opportunities, habitat for indigenous peoples, protection of natural and cultural heritage, maintenance of forest-related cultural and spiritual knowledge and values, enhancement of agricultural production systems, and improvement of urban, semi-urban, and rural living conditions (FAO, 1999h). Moreover, forests provide several environmental services which are important both locally and globally. These include the conservation of biological diversity, soil and water conservation, and carbon storage and sequestration for mitigation of global climate change.

Forests are arguably the single most important repository of the world's biodiversity (FAO, 1999h). “Biological diversity refers to three elements: the variety and number of different ecosystems found in a country or region, the number of different species and their relative frequencies, and the genetic varieties within each species.” (Panayot and Ashton, 1992). different eco from an economic perspective, conserving this biodiversity is important in order to improve agriculture, provide opportunities for medical and industrial innovations, and preserve choices for addressing future problems.

The role of forests in soil and water conservation impacts on many economic sectors, including agriculture, fisheries, transport, energy, water supply, and tourism.

For example, some 40 per cent of developing country farmers live in areas dependent upon watershed functions provided by forests (World Bank, 1987, cited in Panayotou and Ashton, 1992).

Forests retain large quantities of water, slowly releasing it over time. This mitigates flooding during heavy rains and preserves water supplies for drier times. Forests also reduce soil erosion caused by rain and floods, and therefore decrease sedimentation rates in irrigation canals, rivers, harbours and reservoirs (Panayotoa and Ashton, 1992). Forests play a significant role in global climate regulation. "Forests act as reservoirs by storing carbon in biomass and soils. They are sinks of carbon when their area or productivity is increased, resulting in the uptake of atmospheric CO₂. Conversely, they are sources when the burning and decay of biomass and disturbance of soil result in emissions of CO₂ and other greenhouse gases. Net CO₂ emissions from changes in land use (primarily deforestation occurring mainly in tropical areas) currently contribute about 20 per cent of global anthropogenic CO₂ emissions." (FAO, 1999h). The Kyoto Protocol of the Framework Convention on Climate Change permits use of a limited list of activities in the forest sector to meet country commitments for reduced emissions of greenhouse gases.

III. TRADE IN PRIMARY FOREST PRODUCTS

A. Overview

Over the past decades, exports of most wood products have been expanding in terms of value, volume and percentage of global production. Trade in primary forest products (logs, sawnwood, panels, and pulp and paper) reached US\$ 135,000 million in 1996.¹ Exports of non-wood forest products and secondary processed products (e.g. furniture, mouldings) were also significant, although harder to estimate. Between 1970 and 1996, export volumes of industrial roundwood increased by 22 per cent to 120 million cubic metres; sawnwood and wood pulp exports nearly doubled (to 113 million cubic metres and 33 million metric tons respectively); wood-based panels exports quadrupled to 45 million cubic metres; and exports of paper and paperboard trebled to 74 million metric tons.

Between 1970 and 1996, the share of paper and paperboard in the value of global exports increased from 35 to 48 per cent. That of wood-based panels increased from 9 to 12 per cent. Conversely, the shares of industrial roundwood, wood pulp, and sawnwood decreased in this period (from 15 to 8, 20 to 13, and 21 to 19 per cent respectively). Except for industrial roundwood, the share of total production being exported increased for the above categories of wood products.

Developed countries dominate global trade in wood products. They account for some 75 per cent of the value of total exports and imports. This is particularly true for the high value-added category of paper and paperboard, where they account for 91 per

¹The figures on trade in forest products in this section are quoted generally from FAO (1997) as presented in Bourke and Leitch (1998).

cent of exports and 77 per cent of imports. A handful of these countries account for the bulk of imports and exports. In 1996, some 54 per cent of world exports of forest products came from five countries: Canada, Finland, Germany, Sweden and the United States, with Canada and the United States alone accounting for 31 per cent. Japan and the United States accounted for almost one-third of world imports, with the imports of Germany, Italy and the United Kingdom rounding out the 49 per cent share.

Tropical wood products (mostly from developing countries) make up only a small share of trade in most forest products, with the exceptions of plywood (71 per cent) and wood-based panels (39 per cent). Their share of world wood products production has been rising on the whole, but the volume of tropical timber trade has been declining. Although their share in global trade is small, tropical wood products comprise a significant share of developing country exports. Wood-based panels (especially plywood) comprise nearly one-third of developing country wood product exports. In 1996, around 70 per cent of developing country wood product exports came from Asia.

Most roundwood produced in developing countries never enters the international market. Approximately 80 per cent of it is used for fuelwood and charcoal, which is usually consumed locally. Only 6 to 8 per cent of non-industrial roundwood is exported.

B. Recent trends in trade restrictions

There are three categories of trade restrictions which affect the forestry sector. The first two, tariffs and non-tariff measures (NTMs), are formal institutional measures which can be discussed at formal trade negotiations, such as the World Trade Organization. Trade impediments, on the other hand, are outside the scope of formal negotiations or may be legal under GATT/WTO rules; nevertheless, they can act to restrict trade. Each of these categories is discussed below.

1. Tariffs

Tariffs on wood products in the main importing countries are relatively low, generally less than five per cent. However, tariff escalation exists. Rates on certain processed wood products such as wood-based panels (particularly plywood), woodwork items, some paper products and furniture often fall in the 10-15 per cent range. It should be recalled that tropical timber products account for a large share of the exports of plywood and panels. Many developing countries, however, manage to avoid paying the full tariff rates as they are covered by various preference schemes, notably the UNCTAD Generalized System of Preferences (GSP) applied by developed countries.

As a result of the Uruguay Round agreement which came into force on 1 January 1995, tariffs on forest products will continue to decline or be completely eliminated. Some actions have already begun, whereas others will become operative over the following 5 to 15 years. In developed countries, import tariffs will decline substantially and tariff escalation will be reduced. On a trade-weighted basis, these

reductions will average 99 per cent for pulp and paper products, with the main importers eliminating them completely over a 8 to10 year period. Reductions on solid wood products average 43 per cent. (GATT, 1994, quoted in Bourke and Leitch, 1998). While generally a positive development, these tariff reductions will partially erode the margin of advantage enjoyed by GSP-covered countries.

Tariff rates on wood products in developing countries tend to be much higher than those in developed countries. They range from 10-60 per cent, with additional taxes and duties often elevating the total burden considerably. Moreover, few developing countries offer preference schemes. As a result of the Uruguay Round, these tariff levels will be reduced, but in general will remain significantly higher than those of developed countries.

In addition to the Uruguay Round, numerous bilateral and regional trade negotiations will also significantly impact on trade in forest products. These include APEC, ASEAN, NAFTA, the European Union (EU), and MERCOSUR. For example, APEC proposes to create a free trade and investment region by 2010 for developed countries and 2020 for developing countries. The forest products sector numbers among the 15 chosen in November 1997 for Early Voluntary Sectoral Liberalization.

2. Non-tariff measures

A variety of non-tariff measures (NTMs) exist for wood products. NTMs are often less visible and more complex than tariffs and it can be harder to gauge their impact. It is thought that, in recent years, they are having a greater trade-restricting effect than tariffs. NTMs include quantitative restrictions such as import quotas, technical standards and plant health (phytosanitary) standards, export restrictions, and sometimes cumbersome import licensing, customs procedures and domestic policies.

The use of import quotas for forest products is declining, but in some cases still causes difficulties. In contrast, the use of export restrictions, particularly on logs, has been increasing. They have had a major impact on trade in forest products. Most export restrictions are employed by developing countries as revenue-generators, as means to encourage value-added processing of wood products, and more recently to reduce harvesting levels. Complying with import licensing and customs procedures adds costs to foreign suppliers which domestic producers do not bear. Certain domestic policies, including subsidies and tax concessions, affect the competitiveness of foreign producers by reducing domestic producers' costs.

Technical and phytosanitary standards are likely to continue to create difficulties for exporters for many years to come. "Technical regulations and standards related to the protection of animal and plant life from pests and diseases; to human health and safety; and to maintenance of air, water and land quality, result in considerable adjustment and readjustment in terms of trade. While perhaps they are not trade restrictions in the formal sense of the term, since they do not aim mainly at the restriction of trade, they do create difficulties for trade by changing relative costs and comparative advantages, and consequently trade patterns." (Bourke and Leitch, 1998). For instance, while most of these standards apply equally to domestic and foreign firms, domestic firms have less trouble complying with them due to easier

access to information and less paperwork involvement. Also exporters may have to inform themselves of and comply with different sets of standards in different markets, a problem which domestic firms producing for domestic markets do not have to face.

For wood products, safety concerns usually revolve around strength characteristics and suitability for use in construction. This affects logs and sawnwood more than higher value-added processed wood products, which are less often used for structural purposes. The same holds true for health and phytosanitary standards, as most value-added products contain timber which has been dried before use, thus reducing phytosanitary risks. Health and phytosanitary regulations could be of more importance to trade in NWFPs, since these are often used in food and pharmaceutical products. Many technical regulations are motivated by environmental concerns. These include, for example, restrictions on wood-based panels containing formaldehyde glue, controls designed to discourage companies from using chlorine to bleach pulp, and regulations regarding the recycling and recovery of waste paper and packaging.

While some NTMs have been declining, others have been on the rise. Two agreements which were part of the Uruguay Round could lead to a reduction of the trade-distorting impact of NTMs: The Agreement on Technical Barriers to Trade (TBT) limits the use of technical regulations to legitimate safety, health and environmental protection purposes, and the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement), might improve quarantine and inspection conditions.

3. Trade impediments

The third category of trade restrictions, trade impediments, are usually motivated by environmental concerns. In the forestry sector of late, they are particularly aimed at encouraging sustainable forest management. These impediments include bans and boycotts on the use of timber from forests which are not sustainably managed. Such bans have been imposed by local authorities (e.g. municipalities) as well as retailers and traders. Often the main target has been tropical timber, due to concerns about tropical deforestation. Many of these bans are linked to the certification of forest products, whereby consumers could be assured that the wood in the product they are buying comes from a sustainably managed source. Certification is described in more detail in section VI below. Finally, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) uses degrees of trade restrictions to regulate trade in endangered species. Recently, CITES became a controversial forestry issue when developed countries attempted to place several commercially important tropical tree species (such as mahogany) on the CITES restricted lists.

Trade impediments are currently having some impact on trade levels and patterns of forestry products. In the future, it seems likely that this impact will continue to strengthen. Some of these measures could then have positive influences on exports, including for those companies which use certification of forest products as a marketing tool. Other measures, however, could act more like barriers to trade. At any rate, they certainly contribute to market uncertainty and will continue to do so in the future.

IV. CHANGES IN FOREST COVER AND CONDITIONS

A. Trends

The future supply of the valuable forest products and services outlined in section II is threatened by the considerable deforestation and forest degradation, which has taken and is taking place, particularly in developing countries. Deforestation and forest degradation can have a large negative impact on the poor in these countries, particularly on rural women (see section VII).

The most recent data on global forest coverage available are for 1995. In that year, there were approximately 3,454 million hectares of forest, covering about one-quarter of the earth's land area. About 97 per cent was natural or semi-natural forests, with the remaining three per cent being forest plantations. Half of these were tropical/subtropical and a half were temperate/boreal. Around 55 per cent of forests were located in developing countries (FAO, 1999h).

Between 1980 and 1995, global forest cover decreased by some 180 million hectares. The deforestation was even greater in the developing world, where a net 200 million hectares were lost - an amount equal to 9.1 per cent of the 1980 developing country forest cover. In developed countries, on the other hand, there was a net increase of 20 million hectares in forest cover. In developed countries, afforestation and reforestation (including on abandoned agricultural land) more than compensated for the clearing of some forests, mainly for urban growth and infrastructure (FAO, 1999h).

Much work and discussion has revolved around the underlying causes of deforestation in developing countries. Causes which have sometimes been cited include: population growth, poverty, lack of legal rights over the resources, privatization of forests for the benefit of large private and/or corporate landowners, lack of participation of local communities in forest management decisions, unsustainable agricultural practices, perverse economic incentives, rapid growth of consumer consumption of forest products (often exacerbated by trade liberalization), inadequate management, weak institutions, lack of regulatory control, lack of regulation of transnational corporations, the promotion of large-scale development projects, and inappropriate and conflicting policies relating to natural resource management (Foley, Moussa and Verolme, 1999). According to the FAO, "the major causes of change in forest cover in the tropics appear to be expansion of subsistence agriculture in Africa and Asia and large economic development programmes involving resettlement, agriculture and infrastructure in Latin America and Asia." (FAO, 1999h).

Forest degradation has also taken place. Causes vary from place to place and include diseases, insects, overharvesting, poor harvesting practices, air pollution, and storms. In 1997-1998, wildfires and forest fires were particularly important causes of degradation, especially in Indonesia and Brazil. Low rainfall was compounded by human intervention, particularly fires set by farmers and ranchers to burn newly cut

forest or clear old cattle pastures which then ran out of control, as well as arson (FAO, 1999h).

B. Linkages between trade in forest products and deforestation

Positions and views on the linkages between trade and deforestation vary widely. Some NGOs argue passionately that excess consumption, exacerbated by trade is an important cause of deforestation. They believe that trade restrictions can play an important role in relieving the pressure on forests. For example, as reported in the *Financial Times* in June 1999, environmentalist groups announced a global campaign to oppose the elimination of tariffs on lumber and wood products. They are concerned that eliminating tariffs without safeguards would lead directly to increased consumption, more logging and thus more rapid deforestation (Christie, 1999).

On the other side, producers and exporters of forest products argue that adequate market access is necessary for the economic viability of maintaining and harvesting forests. Otherwise, forests will tend to be converted to agriculture, which offers quicker returns. This was the position, for example, of Dr. Seri Mahathir bin Mohamad, Prime Minister of Malaysia, when he opened the 1998 International Timber Conference (Mahzan, 1998).

As is often the case, there is truth on both sides of the debate. The Intergovernmental Forum on Forests (IFF)² concluded that “the impact that international trade in wood and non-wood forest products has on sustainable forest management can be both positive and negative. Trade liberalization adds value to the resource and has the potential to promote economic development, contribute to poverty alleviation and reduce environmental degradation, provided it is accompanied by sound environmental and social policies.” Moreover, “mutually supportive trade and environmental policies can effectively promote the achievement of the management, conservation and sustainable development of all types of forests.” (United Nations, 1999).

C. Need for sound environmental/social policies

The key, therefore, is to have sound environmental and social policies which can help countries reap the economic benefits from trade in forest products, both now and in the future. One such policy is full cost accounting of forest products and their substitutes. According to Dr. I.J. Bourke, Senior Forestry Officer of FAO, “of the problems that can be directly linked to trade and trade practices, many are the result of market and intervention failures ... The market is often unable to value the full range of benefits correctly or to internalize environmental costs because of policy distortions and the failure to set in place the conditions that would enable producers to take proper account of the costs of sustainable resource use and their impacts on other

²The IFF was created by ECOSOC in 1997 to continue the intergovernmental policy dialogue on forests which had taken place in the Intergovernmental Panel on Forests between 1995 and 1997.

goods and services provided by the forest. The result is that environmental costs are not recognized or fully accounted for by those who should bear them, leading to insufficient attention being given to the environment during harvesting, processing and marketing; excessive consumption; and inadequate provision being made for environmental issues in government policies. The appropriate policy response to address such failures is to internalize the costs through regulations and systems to ensure compliance with standards set or, alternatively, through the use of market-based economic instruments.” (Bourke, 1995). The IFF concurs that “forest products and services and their substitutes should be adequately valued through full-cost internalization.” (United Nations, 1999).

In this debate, it is also important not to lose sight of the facts that a) deforestation is mainly a developing country problem and b) approximately 80 per cent of the roundwood produced in developing countries is used for fuelwood and charcoal, which is rarely traded internationally. It therefore makes more sense to directly address the underlying causes of deforestation, including population pressure and poverty, than to seek solutions mainly in the international trade arena.

V. SUSTAINABLE FOREST MANAGEMENT

Today, the debate on reducing deforestation and forest degradation is inexorably linked with the topic of sustainable forest management (SFM). SFM and how to achieve it are much-discussed issues on the international environmental agenda these days. SFM “aims to ensure that the goods and services derived from the forest meet present-day needs while at the same time ensuring their continued availability and contribution to long-term development needs.” (FAO 1999i). This goal is increasing in importance and difficulty in the light of growing population pressure and hence demand for forest products. Sustainable forest management will generally reduce harvest yields in the short run, but increase harvest yields in the long run (Williams, Duinker and Bull, 1997 in FAO, 1999h).

The United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, 1992 adopted a set of “Forest Principles” which, *inter alia*, highlighted the multi-faceted nature of SFM: “Forest resources and forest lands should be sustainably managed to meet the social, economic, ecological, cultural and spiritual needs of present and future generations. These needs are for forest products and services, such as wood and wood products, water, food, fodder, medicine, fuel, shelter, employment, recreation, habitats for wildlife, landscape diversity, carbon sinks and reservoirs, and for other forest products.” (United Nations, 1992).

The global commitment to improving the management of the world’s forests is reflected in the fact that more than 150 countries are participating in regional and international processes aimed at establishing criteria for sustainable forest management. Member countries of the International Tropical Timber Organization (ITTO) which account for 95 per cent of the global tropical timber trade have made a commitment to have their exports coming from sustainably managed forests by the year 2000. Likewise, ITTO consumer countries committed themselves to sustainably managing their own forests in that time-frame.

Unfortunately, “with the exception of Europe and North America, India, Malaysia, Ghana, Japan and Australia (where a significant part of the forests are managed according to an officially approved forest management plan), the majority of natural forests are not managed at all or managed without an approved management plan. In addition, many existing management plans are limited in their objectives, as they are in many instances drafted for wood production only, not regularly applied, implemented or supervised.” (FAO, 1999i). There seems to be a long road to travel here.

VI. MEANS OF ACHIEVING SUSTAINBLE FOREST MANAGEMENT

So how do governments and the international community encourage and support moves in the direction of sustainable forest management? There are various possibilities. A main one is to approach the problem at the national level by putting in place environmental and social policies aimed at addressing the biggest underlying causes of deforestation and environmental degradation. Among the policies to consider is full-cost accounting of forest products and their substitutes, as discussed above in section IV.

A. Certification of forest products and country certification

Another route is certification, a topic which is currently high-profile and rather controversial on the international agenda. This generally refers to a written statement attesting that wood originates from sustainably managed forests according to certain criteria and indicators. Certification efforts are being made at all levels. The main international efforts are being undertaken by the Forest Stewardship Council (FSC) and the International Organization for Standardization (ISO). There are also regional initiatives including the African Timber Organization as well as national programmes, including those of Brazil, Ghana and Indonesia.

At the international level, the FSC and ISO embrace divergent approaches. “FSC favours a performance-based approach, i.e. stipulating that a specified level of forest management, covering all aspects - including social aspects - must be achieved. ISO’s approach is based on the management system, i.e. stipulating that specific management systems and commitment to specified actions and procedures must be in place. The FSC approach also considers chain-of-custody monitoring as an essential part of the process, while other certification approaches do not. Many consider chain-of-custody too difficult and expensive to contemplate.” (FAO, 1999h). A degree of mutual recognition between the two approaches is necessary to avoid fragmentation and weakening of the certification process.

According to UNCTAD forestry expert, David Elliot, “as with other trade-related incentives that influence forest use, there are limits to the scope of effectiveness of certification and eco-labelling of timber and timber products. Forests used for the production of timber comprise only a part of all forests and account for only a part of the whole problem of forest loss and degradation. Further, only a part of the logs harvested in production forests are destined for international trade.” (Elliot, 1997).

There is considerable concern among producer countries, particularly developing countries, that certification and eco-labelling (which encompasses more issues than forest management) of forest products will be used as non-tariff barriers to trade. They worry about the increased costs involved with certification, which would be particularly burdensome for small forest owners, including those in developing countries. To date certified timber comprises only a very small portion of the global timber trade and the future trend is uncertain. Much will depend upon how much of a green premium consumers are willing to pay. In its continuing deliberations on this topic, the Intergovernmental Forum on Forests (IFF) recognizes the potential role of voluntary certification of forest management as being among the potential tools for promoting sustainable forest management and differentiating forest products and services in the market. But it calls for properly designed and transparently-applied schemes, so as to reduce possible unjustifiable obstacles to market access (United Nations, 1999).

Another possible tool is country certification: “Originally proposed in a report to ITTO, country certification involves certifying through explicit bilateral or multilateral recognition all timber products from a country that can prove it is complying with an internationally agreed objective, such as a sustainable forest management target.” To be effective, country certification would require producer countries to review their forest-sector policies to determine their impact on deforestation and consequently correct distorting policies. Consumer countries, in exchange, would commit to removing trade barriers to timber products from these producer countries. Such policy reform-oriented schemes could be complementary to certification of forest products (see United Nations, 1996).

B. Community forestry

Another tool is that of increasing the involvement of the local community in decisions about local forests, as an alternative to complete centralized state control. Over the past two decades, it has become increasingly recognized that active stakeholder participation is a key, even an essential, element of natural resource management, including sustainable forest management. Consequently, “ a variety of approaches to increasing the participation of local communities in natural forest management have been developed. The past few years have seen a significant acceleration in the implementation of community-based forest management programmes and considerable improvement in the results as experience, both good and bad, has accumulated.” (FAO, 1999h).

Community forestry aims at promoting a balance between sustainable forest management and the socio-economic welfare of local communities which depend on the forests. “Although participatory forest management has been implemented over a relatively short period, information is emerging which indicates that these approaches are having a positive effect on the condition of forest resources. This is partly because the direct accrual of benefits to local communities gives them greater incentive to manage and conserve forest resources actively.” (FAO, 1999h).

VII. THE IMPORTANCE OF GENDER ANALYSIS: WOMEN AS A MAIN FOREST-USER GROUP

The recent attention given to community forestry is a positive step taken in the direction of sustainable forest management. But to have a complete picture and to reap the full rewards of community forestry projects, it is necessary to have precise information on who the people in “people-centred” development are and what roles they play vis-à-vis the forests. Within each community, these roles vary according to age, social class, race, occupation, sometimes caste, and always gender.

A. Food security and family welfare

In almost all communities worldwide, men and women have different gender-based roles responsibilities, needs and priorities as well as knowledge of, access to and control over the local environment, in this case, the forests. In most developing countries, men often view forests in terms of commercial possibilities, whereas women usually see them as a source for meeting their domestic needs. “Women’s relationship with the environment revolves around their central concern with household food security and family welfare, and with the provision of water and fuel. Changes in land and tree tenure, land use, technology and inputs are viewed by women according to their effects on the supply of water for domestic use and small-scale irrigation; on the possibilities for gathering food, fuelwood, fodder, medicinal plants and raw materials for small industries; and on tree, plant and animal production for consumption and sale. Women are also custodians of biodiversity and caretakers of agricultural and livestock genetic resources: wildlife is a major component in household food security for poor women, as is the identification, preservation and use of a wide diversity of domestic plant and animal species which women have carefully selected, bred and exchanged throughout human history.” (FAO, 1995).

In the developing world, women are the main harvesters of many wood and non-wood forest products. For example, they are the primary collectors of fuelwood, which serves as the principal domestic energy source in most developing countries. This fuelwood collection does not generally contribute to deforestation as much as is often claimed: “as women mostly collect dead wood, which is easier to cut, their work does not damage the trees”. (Rodda, 1993) Women generally use only a few simple tools or no tools and carry the wood home themselves. Collecting fuelwood is a very time-consuming and arduous process, often involving long walks and the carrying of heavy loads. Moreover, women are frequently forced by necessity to gather firewood illegally, expending efforts in avoiding guards and/or paying bribes when caught.

On the other hand, “men generally engage in firewood collection only on a larger scale and when it becomes profitable to do so”. Their access to both more effective tools, such as axes and chain saws, as well as to means of transport increases the number of trips possible as well as the harvest per trip. Moreover, “higher firewood prices have been associated with men taking over this activity from women” (Zein-Elabdin, 1997). This latter tendency should be borne in mind when considering schemes to increase the prices or profitability of forest products traditionally gathered by women.

Charcoal-making is almost always in the man's domain, as it is more commercially oriented. For example, "the highly organized charcoal industry provides the energy requirements of over 90 per cent of urban households in Africa ... But charcoal is also more deleterious of the environment than firewood. It involves clear-cutting of large areas of land, thus imposing intense pressure on local ecosystems, whereas firewood production is spread over time and space." (Zein-Elabdin, 1997).

The forest is a valuable source of food. Whereas men hunt forest animals, women gather a wide variety of plants, insects and plant products to supplement the basic diet. These include leaves, seeds, nuts, fruits, bark, fungi, leafy vegetables, caterpillars, beetle larvae, and honey. In a case study in Sierra Leone, for example, women were found to rely much more heavily on plant resources than men. They used wild foods as ingredients for making a sauce which was central to the daily diet, as snacks for children, and as buffers during food shortages. In fact, several famines of the last century were recalled by the name of the forest product which had been most important for survival (Leach, 1993).

Collecting animal fodder is generally performed by women. They gather grass, leaves, fruit and branches to feed small domestic animals (such as rabbits, pigs and poultry) and also sometimes to feed the large animals. For example, in India and Nepal, women and girls collect the food for the buffaloes. (Rodda, 1993). Women must also find the leaf litter which is used for the bedding of domestic animals. In addition, forests provide the materials for many household products, including baskets, bowls, brushes, etc.

Many rural women rely on the sale of forest products as an important component, and often the sole source, of income. They sell fuelwood as well as other forest products. This income is used to improve household food security and the welfare of the women's families. Limiting their access to forest resources by, for example, changing property or user rights, can thus deal rural women a double blow: directly, by depriving them of a means of fulfilling household needs through consumption of forest products, and indirectly, by taking away an important source of income to meet those needs.

B. Impact of environmental degradation on women

Research has shown that, in general, when confronted with environmental stress, "men are better able to diversify and expand their livelihood sources through the money economy. Women remain far more dependent on a declining natural resources base than men ... the more rigid and restrictive gender relations are, in a given area, the more women bear the costs of environmental change and the less likely it is that sustainable improvements in natural resource management will be introduced." (Joeke, 1997).

Since rural women are dependent on forests for so many resources, deforestation and environmental degradation hits them especially hard. It can, in one blow, vastly increase the amount of time they must spend to gather the forest products and reduce or eliminate their income-generating possibilities. This translates into additional hardship for children as well, as mothers have less time for child-care and food

preparation and less income to meet household needs. The family's health can also be negatively affected by the reduced availability of forest food products and medicinal plants.

Women in developing countries are also the main collectors of water. When the local forests' watershed functions are disturbed, this can cause their traditional sources of water supply to dry up, necessitating longer walks and more time spent in search of new sources. Moreover, disturbed water patterns negatively impact on farmers. Women farmers, who are generally poorer, may have less reserves built up to tide them over in difficult times.

C. Gender roles in decision-making about forests

Although women possess a wealth of knowledge about forests and forest resources, they are generally excluded from the decision- and policy-making process in the forestry sector. Forestry services employ mostly men, particularly at higher levels. Where local forestry committees have been formed, they are male-dominated, often including women only in response to project donor demands. Even when women are included, they are usually much less vocal in the presence of men. In a case study in Nepal, for example, it was found that "women's lack of knowledge and involvement in the local level decision-making processes led to their intimidation at meetings." This was particularly true for married women who were supposed to defer to their husbands (Hobley, 1993). Thus the needs and priorities of the main forest-user group go unheard and are not taken account of in forest decision-making. This certainly does not bode well for making the best possible decisions.

D. Community forestry projects

There is an increasing tendency for gender to be taken into account when designing community forestry projects. But designers must be aware that simply having female participation in the project does not necessarily mean that they will benefit from it. Too often, women have been expected to volunteer their time for these projects, thus diverting their energies from other, often income-generating activities. Moreover, the fruits of their labour often accrue to the men of the village.

To ensure project success, it is important to take account of the different roles, needs and priorities of men and women. For example, if in a certain village, women traditionally carry out the task of caring for tree seedlings, training men in that area would be a waste of resources. Or if women are asked to care for seedlings which are of interest only to men, such as hardwood for furniture or carvings instead of softwood for firewood and fodder, they have less incentive to do a good job (FAO, 1995b).

E. Property rights

Another key aspect to be aware of is that of property rights, both legal and customary. Insecure property rights distort incentives for environmental conservation and reforestation efforts. According to the FAO, “because trees grow slowly, few farmers are prepared to plant trees unless they are sure they will enjoy the benefits. They need secure tenure to land and trees. If this is often a problem for men, it is nearly always so for women.” (FAO, 1985). Moreover, “insecure rights to land may force women into situations where they may compromise their knowledge of sustainable land management by prioritizing short-term livelihood needs.” (Leach, Joekes and Green, 1995). Thus, precarious property rights can directly lead to environmental degradation.

In many countries, laws and/or traditions discriminate against women. Often, they are dependent upon their husbands for access to land. In many areas considerable ambiguity exists about women’s land and usage rights, especially at the intersections of customary and statutory laws. Sometimes this is to women’s advantage. For example, “research in Kenya indicates that women have been adept at manipulating the meanings of and exploiting the spaces between customary and statutory legal tenurial frameworks. This ... suggests that the replacement of customary land rights with statutory rights may remove for women a vital basis for negotiation over land.” (Leach, Joekes and Green, 1995).

Consequently, any proposals for land tenure reform require thorough and cautious analysis of existing local legal and customary land tenure and usage rights systems. It is overly simplistic to assume that when you give to the men or to the household, you give to the women. Particularly when common land is privatized, women can lose out considerably. They generally have neither the financial resources nor often the right to buy their own land.

VIII. CONCLUSIONS AND FUTURE RESEARCH DIRECTIONS

This paper has documented the growing consumption and production of forest products. It has shown that international trade in these products is also growing. At the same time, deforestation is proceeding at an alarming rate, particularly in developing countries. Means of halting this trend by encouraging sustainable forest management were discussed, including internalizing environmental and social costs of forest products, certification of timber, and increasing the involvement of local communities in forest decision-making. It also highlighted gender-based differences in needs, rights and responsibilities vis-à-vis forests within these local communities.

The paper attempted to address trade, sustainable development and gender aspects of the forestry sector. But there are still many areas where the linkages are unclear. The relationship between trade in forest products and sustainable forest management/deforestation is still controversial enough to merit and further more thorough research. While a fair amount has been written on women in developing countries and their relationship to local forests, there have been few, if any, attempts to link this to trends or events at the national or international level. For example, gender-differentiated impacts of trade in forestry products could be explored, as could

possible effects of international trade and investment on women's land tenure and forest usage rights. Better understanding of these complex linkages, is an important step in the direction of sustainable development of the forestry sector.

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