CHAPTER 3

Sustainable forest management in Asia: Trends and prospects

Introduction

Forests in Asia play critical roles in accounting for most of the terrestrial plant biomass and in regulating global temperature by sequestering carbon. As a public good, they contribute to stable, fertile landscapes for human settlement, provide numerous timber and non-timber resources and are places of recreation. For indigenous peoples they are often places of important spiritual significance. However, the natural forests of Asia remain in a state of crisis, threatened by a complex array of forces that undermine their ability to fulfill vital ecological and societal functions.

In this chapter we examine the current state of forests in Asia and the underlying causes of loss in forest cover and quality (ecological integrity). The concept of sustainable forest management is introduced as a broad conceptual instrument to assess solutions to forest loss and degradation. This chapter is concerned with the strengths and weaknesses of new instruments that promote sustainable forest management. These instruments are discussed under the headings of fast-wood industrial plantations, certification, community forestry, protected areas and trade measures. The chapter concludes with sets of recommendations to improve forest management practices.

Forests in Asia: Recent trends

Asian countries share the fact that their forests serve important ecological, environmental, social and economic functions. Similarly, Asian countries have a common interest in dealing with the serious threat to forest cover and quality and share similar underlying causes of forest loss and degradation.

The total forest cover in the region was estimated by FAO (2001) at 585 million hectares, approximately 14 per cent of the global forest cover. Twenty-five per cent of the total landmass is covered in forests, though this figure differs widely from country to country: China (25.7 per cent), India (22 per cent), Indonesia (58 per cent), Japan (64 per cent), the Republic of Korea (63 per cent), Malaysia (59 per cent), Philippines (19 per cent), Thailand (29 per cent), Viet Nam (30 per cent), Cambodia (56 per cent), and Lao PDR (54 per cent) (UNEP/IUCN, 1998). The largest natural forests are found in China, Australia and Indonesia and two of the world's largest plantation programmes are located in China and Viet Nam.

Most natural forests lie in the tropical belt that form the Malay Archipelago, through the Philippines, the coastal lowlands of Southeast Asia, and the eastern Himalayan foothills to the southwestern coasts of Myanmar, India and Sri Lanka. Dense, moist, evergreen forest prevails in the tropical zone; the world's two largest mangrove forests are also found here. That over half the world's flowering plants are located in this belt is indicative of its significance to global biodiversity. Tropical, moist, deciduous forest is predominant in parts of South Asia, Indo-China, China and the Pacific Islands. Subtropical forests are found in western Asia, while a belt of subtropical mountain systems extends from Turkey to southern China. Dry, subtropical forest is confined to the Near East, whereas temperate, continental forest is found on the other side of Asia in China, Japan and the Korean Peninsular. Boreal, coniferous forest survives in the harsh climate of northeastern China. Evergreen, tropical rainforests are prominent in the Pacific Islands and dry forests are a feature of the Australian landscape.

While countries in Asia exhibit a diversity of forest types, many share a rapid expansion of planted forests. These include small homestead forest plots and strip plantations along roadsides and embankments, but it is the rapid expansion of large-scale, industrial timber stands that are prominent in the region. In 2001, 61 per cent of global plantations were in Asia (Brown and Durst, 2003), with around 34 million hectares of new plantations established in the 1990s (APFC, 2004). At 16 per cent, the proportion of the total forest estate in Asia accounted for by plantations is much higher than the global average of about five per cent (Brown and Durst, 2003). Moreover, this figure is rising rapidly as the coverage of natural forest continues to decline and because many states have begun to pursue ambitious plantation policies.

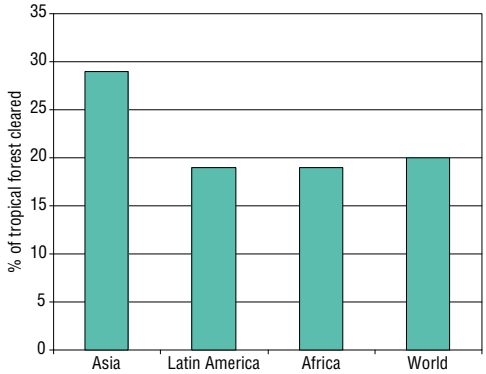
Wood from fast-growing trees, such as acacia and eucalyptus destined for pulp processing, is increasingly preferred. Because of their growing manufacturing sectors and rising consumer demand, Asian countries have become both major producers and consumers of timber, paper and other reconstituted wood products such as fibreboard. China, India, Indonesia, Japan, Malaysia, the Philippines, the Republic of Korea (ROK), Thailand and Viet Nam are now responsible for over 30 per cent of total global pulp imports (Tachibana, 2002), with Indonesia being the region's major exporter. The import of timber and pulp to be processed into finished products for export has become a feature of trade in the region. For example, in 2003 China imported 6.9 million tons of pulp and exported 1.2 million tons of printing and writing paper (faostats, 2005). China's surging export-oriented furniture industry, which increased in value by 30.6 per cent in the first half of 2003 (IISD, 2004), is another example of this "import-process-export" trend.

In addition to the common fast-wood varieties, FAO (2005) reports that rubberwood, oil-palm and bamboo are rapidly becoming important sources of timber and fibres for forestry industries in Asia. Rubberwood plantations cover approximately nine million hectares, with harvests in Southeast Asia estimated to exceed 6.5 million cubic meters per year (ibid.). Rubberwood is being used increasingly in reconstituted products, such as particle board, and continues to have an important role in furniture manufacturing. Five million hectares of oil palm in Asia are cultivated to produce food, soaps and cosmetics, and new technologies allow oil palm to be used for the production of particle board. Bamboo is used to produce paper in India, China, Bangladesh, Viet Nam, Thailand and the Philippines, and bamboo flooring and furniture are enjoying increased market share.

Overall steady economic growth has impacted on the trade in timber and wood products. China has overtaken Japan as the world's largest importer of tropical hardwood, with imports that more than doubled from 1997-2002 (Sun et al., 2004). One prediction suggests that this upward trend will continue through to 2010, though at a slightly slower rate (IISD, 2004). A ban on the harvesting of natural forests in China imposed in 1998 after devastating flooding, a rapidly expanding wood processing export industry, and a gradual reduction in tariff and non-tariff trade barriers, have fueled this growth. The Asian financial crisis of 1997 had a strong, depressive impact on trade in timber and wood products, but the region appears to have recovered. For example, Thai imports of wrapping and packing paper and board, much of which is used to pack export goods, declined by 44 per cent between 1996-1998, but almost doubled in the following two years (faostats, 2005).

The destruction of natural forests in Asia continues to be the greatest challenge to forestry. FAO (2001) estimates that the net forest cover declined by just over 1 million hectares per year during the 1990s. Once the expansion in plantations is subtracted, the actual loss of natural forest is calculated at closer to 2.5 million hectares (Brown and Durst, 2003). As Fig. 3-1 reveals, the rate of tropical forest loss has been significantly higher in Asia than in any other region.

Fig. 3-1: Percentage of the world's tropical forest cleared between 1960 and1990



Source: Bryant, Nielsen and Tangley (1997)

Rates of total forest loss differ significantly amongst sub-regions. In North Asia, the total forest cover has actually increased because of massive afforestation programmes in China. The highest rate of forest loss generally occurs in the tropical forests of Southeast Asia, where countries are affected by illegal logging and human-induced forest fires, and where conversion to agriculture is driven by the needs of expanding populations. The following figures for forest loss were recorded between 1990-2000: Indonesia (1.2 per cent), Malaysia (1.2 per cent), Philippines (1.4 per cent), Myanmar (1.4 per cent), Philippines (1.4 per cent) (FAO, 2005). Forest loss has also been rapid in South Asia: Nepal (1.8 per cent), Sri Lanka (1.6 per cent) (ibid.).

Causes of loss in forest cover and quality

The proximate causes of forest loss vary widely among Asian countries, though conversion for agricultural purposes is common. Natural forests also have been cleared to establish more lucrative industrial monocrop plantations. Selective logging beyond sustainable rates has reduced the ecological integrity of many natural forests. Infrastructure development, transmigration and inadequate management plans have been identified as major proximate causes of forest loss (Yamane, 2003). Most forest fires in the region are started by people and in 2000 affected 20 countries (Brown and Durst, 2003). Table 3-1 lists the recent major proximate causes of forest loss in selected Asian countries.

Illegal logging, which is now rampant in many Asian countries, deserves special mention. In 1998, the G8 formally recognised that "illegal logging robs national and sub-national governments, forest owners and local communities of significant revenues and benefits, damages forest ecosystems, distorts timber trade markets and forest resource assessments and acts as a disincentive to sustainable forest management." The following statistics provide snapshots of the extent of this problem in Asia: between 20-50 per cent of logging in the Russian Federation is estimated to be illegal, with China (16 per cent) and Japan (17 per cent) being the major importers of Russian timber (Toyne, O'Brien and Nelson, 2002); nearly half of the total timber exported from Burma in 1999 was undeclared – China accounts for 42 per cent of Burma's export market (ibid.); recent estimates suggest that 88 per cent of logging in Indonesia is in some way illegal (Marijnissen, Ozinga, Richards and Risso, 2004); EIA/Telapak (2005) estimates that as much as 44 per cent of Chinese timber imports are illegal at source, making China the "largest buyer of stolen timber in the world."

Table 3-1: Recent major proximate causes of forest loss in selected Asian countries

Country	Proximate causes of forest loss
Philippines	Export-oriented unsustainable commercial logging; the failure of industrial plantations; frequent forest fires caused by local people; mining operations; forest conversion for agricultural expansion; upland farming; government projects such as dams and land clearing for the landless.
Indonesia	Export-oriented unsustainable commercial logging; logging for the domestic plywood industry; transmigration projects and paddy field development projects; non-traditional shifting cultivation; industrial tree plantations; frequent large-scale forest fires; oil-palm plantation development.
Thailand	Logging; forest clearance for cash crops; shifting cultivation; rubber plantations; shrimp farming.
Lao PDR	Direct and indirect impacts of the civil war and the Second Indo-China War; land clearance for rice self-sufficiency; shifting cultivation; hydropower development; commercial logging.
Viet Nam	Direct and indirect impacts of the Second Indo-China War; land clearance for rice self-sufficiency; in-country migration; coffee plantations; shifting cultivation; financial resources for the military from logging.
Cambodia	Land clearing for crops; logging under the protection of powerful people and the military.
Southern Russian Far East	Export-oriented unsustainable commercial logging; large-scale forest fires.

Source: Modified from Yamane (2003)

A failure of governance has been recognised as the basis of illegal logging and this recognition partly pushes the decentralisation of forestry administration in a number of Asian countries. FAO (2005) has noted that 30 countries in Asia, Latin America and Africa have reported some degree of decentralisation in the forestry sector. Decentralisation has been spurred by international development organisations concerned that centralised forest administrative systems were failing to control illegal and destructive logging. Decentralisation has appealed to forestry agencies struggling with small budgets as a means to reduce their overheads. Regardless of motivations, the outcomes of decentralisation have at best been mixed. Illegal logging may have in fact accelerated in some countries, particularly Indonesia, where local forestry agencies lacked the capacity to successfully carry out their new responsibilities; decentralisation has shifted corruption in the forestry sector from the capital to the districts (Djogo and Syaf, 2004).

The proximate causes of forest loss discussed above tend to obscure deeper underlying causes shared by countries in the region. IGES has identified the following key underlying causes of forest loss and degradation in Asia.

1. Lack of recognition of the real value of forests

Many of the functions that forests serve are not recognised in the value that the market place ascribes to forest products. For free trade in forest products to have a positive impact on overall human welfare, the full costs of the production of logs must be internalised. The full costs of production include externalities of forests such as a range of cultural, social and ecological functions. If such costs were reflected in the

prices of timber and wood products on the domestic and international market, then prices would be many times higher and the pressure on natural forests significantly reduced.

2. A development paradigm that stresses industrialisation

Under the modernisation paradigm, the exploitation of forests is seen as one means of providing the capital required to invest in infrastructure and industry. Land conversion is supported as a means of feeding a growing population and of gaining foreign revenue through the sale of export crops. Urban and industrial development is prioritised relative to rural development and natural resource conservation. Under this paradigm, natural forests are largely viewed as unproductive places.

3. Powerful actors with a vested interest in forest exploitation

Those who directly rely on the sustainable use of forests for their livelihoods - forest dwellers and others living on the border of forests – are for the most part politically marginalised. Elements of the ruling elite (traditional, local, political, military and business elites) in some countries of Asia, on the other hand, base their wealth and power on the exploitation of forest resources. Under-priced forest concessions become a form of patronage for the ruling party to extend its power base. Those who hold power are removed from the immediate consequences of forest loss and degradation, while those with little power are most vulnerable to such destruction. Systems to improve forest management become obstructed by powerful actors who have an interest in maintaining the status quo.

4. Lack of livelihood options and insecure land tenure

Poverty and a lack of alternatives can lead local people to exploit forest resources in an unsustainable fashion. Landowners might accept royalty payments for the unsustainable logging of their forests as they have few other opportunities to earn cash. In areas where shifting agriculture is practiced, growing population pressure might force a reduction in fallow periods, leading to a decline in soil fertility and the need to clear new forest. Insecure land tenure can lead forest users to engage in destructive forestry practices in order to maximise short-term benefits. In some countries, land tenure is secured by 'improving' the land, which requires the clearance of forest. When forest-dependent communities have insecure tenure, they are less likely to oppose outside groups that are seeking to exploit forest resources at unsustainable rates.

5. Political disorder

Political disorder may occur as countries change from strong, authoritarian rule to weaker democratic regimes characterised by instability and a precarious hold on power. Examples include post-Communist Russia, the Philippines after Marcos and Indonesia after Suharto. Weak governance at the national level, coupled with an inability to enforce forest regulation at the local level, results in an acceleration of unsustainable and illegal logging.

6. National debt

Debt pressure can have a significant impact on forest decisions. Governments with onerous debt obligations may be tempted to allow exploitation of natural forests and under-priced concessions as a means of attracting foreign investment. The public revenue gained from concessions may at best keep the country financially afloat for a period of time, but the unsustainability of this process limits its potential to contribute to long-term national development.

Sustainable forest management

Urgent attention is needed to address the causes of forest loss and degradation listed above. In order to examine instruments that tackle these causes, a conceptual anchor is needed to describe what might be considered an ideal state of forest management. The ideal state provides a frame of reference to gauge improvements in forest management. "Sustainable forest management" (SFM) is used for this purpose.

Since the 1990s, SFM has been at the forefront of international deliberations on forestry issues and is now widely embraced by inter-governmental, regional, national and sub-national conservation and development institutions. At the Second Expert Meeting on Harmonizing Forest-Related Definitions for Use by Various Stakeholders organised by the FAO and the IPCC in 2002, several definitions of SFM were presented. Of these, the definition developed by the Ministerial Conference on the Protection of Forests in Europe (MCPFE) best captures the multiple functions of forests. The MCPFE definition, though not formulated specifically with Asian forests in mind, does embrace the variety of critical forest functions in the region. MCPFE (1993) defines sustainable forest management as the:

> *Stewardship and use of forests and forest lands in such a way, and at a rate, that maintains their productivity, regeneration capacity, vitality and their potential to fulfill now and in the future, relevant ecological, economic, and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems.*

SFM has been the conceptual basis of an international movement to develop criteria and indicators to assess the state of forests and their management, in which a number of Asian countries participate. Because of the variety of forest types in Asia described earlier, it is not possible to present a region-wide specific set of criteria for assessing forestry practices. However, the concept of SFM can be used loosely to assess new policies and instruments of forest management and is employed for this purpose in the remainder of the chapter.

Instruments to promote sustainable forest management[8]

(i) Fast-wood industrial plantations and some alternatives

As noted above, the rapid spread of fast-wood plantations is a defining characteristic of forestry in Asia. Planted trees are found on a variety of scales in the region with functions ranging from primarily industrial to multiple uses. In addition, planted trees occur on a small scale as shelter belts, strip plantings along embankments and roads, recreational areas, stands owned by villages or individual households, and as components of agroforestry or homestead forestry. Partly because such plantings often involve and are more likely to benefit local communities, they are less contentious than the extensive industrial monocrop stands that are rapidly becoming a feature of the forest landscape in many countries of the region.

Asian countries often operate state-owned plantations and/or offer incentives to encourage private investment including tax exemptions, soft loans and low cost seedlings (Enters et al., 2003). Since banning the harvesting of natural forests in 1998, the Chinese government has implemented four new planting programmes to control erosion, combat desertification, and establish shelterbelts and high-yield timber plantations. In Viet Nam, the government plans to re-establish or rehabilitate 5 million hectares of forests by 2010, one million of which are expected to be fast-growing plantations. In India, the National Afforestation Program launched in 2002 has set a national target of 25 per cent tree/forest cover. India's plantations are dominated by fast-growing varieties, especially eucalyptus and acacia.

The new industrial plantations primarily consist of fast-growing trees, in particular varieties of eucalyptus, rubber, acacia, teak and pine. Use differs according to species, but much of the timber is destined for reconstituted products such as paper and fibreboard. The market value per unit of "fast-wood" is low compared to hardwoods and to non-plantation softwoods, but is compensated for by high annual growth rates. Tropical countries have a comparative advantage in growing fast-wood because of favourable climates and low labor costs.

The spread of large-scale industrial timber plantations is a source of much contention. Proponents argue that such plantations provide higher economic rates of return than natural forests, provide much needed employment and foreign exchange, take pressure off existing forests, can have positive environmental and ecological impacts, and can play an important role in sequestering carbon (Cossalter and Pye-Smith, 2003). Critics counter by contending that: the rights and concerns of local people are often ignored by plantation owners and governments; plantations are responsible for the clearing of large swathes of natural forest, loss of biodiversity, lower water tables, depleted soils and are prone to pest invasion; large-scale, industrial plantations create little employment relative to the land and resources consumed; and that when governance is weak, large-scale industrial plantations facilitate corruption and cronyism (Lohmann and Carrere, 1996). Both sides of the debate are liable to generalisation and over-exaggeration; interpretation of these claims requires circumspection.

Despite vocal opposition, including street protests in India and Thailand, it appears that industrial plantations are here to stay. The challenges are: a) to develop new instruments to maximise the benefits of existing industrial plantations, b) to find ways of minimising their social and environmental costs, c) to search for alternatives, and d) to reduce unnecessary consumption of timber and wood products.

Because of the competing claims to land and natural resources in developing countries, a comprehensive framework must be used to gauge the potential value of plantations against existing land uses and other alternative uses. In 1993, the International Tropical Timber Organization (ITTO) presented guidelines for the establishment and sustainable management of planted tropical forests. In 2000, the Center for International Forestry Research (CIFOR) published a set of criteria and indicators specifically for sustainable forestry plantation in Indonesia and India. Aimed at the forest management unit, these guidelines and criteria provide a basis for forest managers and administrators to identify systems to promote the sustainable management of plantations. Principle 2 of the ITTO guidelines affirms that "the creation of plantations must be balanced with the needs for protection of the site and the environment, the conservation of biological diversity of all types, the needs and aspirations of the present people and the potential demands of future generations" (ITTO, 1993). Industrial plantations must be placed in a broader integrated land-use framework that supports SFM by recognising the multiple functions, future value and public good aspects of forests.

Prior to the advent of the nation state, forests in Asia were often managed under communal land tenure systems. After independence many governments appropriated all natural forests within their borders, some of which were sold to plantation companies. Conflicts have often arisen between plantation owners and local communities over land tenure and these have proven difficult to resolve because of the fundamental differences of competing claims. In Sumatra, for example, plantation owners pointed out that they were granted the right to establish plantations by the state (APRIL, 2004). Local communities, however, argued that they originally owned the land and that their rights were recognised in international law (Wieting, 2004). Some plantation companies have attempted to mitigate community grievances by sponsoring infrastructure, alternative livelihood and educational programmes. In addition, local communities can be given preference for employment and industrial plantations can be modified to be more acceptable to communi-

ties by allowing intercropping and incorporating fuelwood and fruit trees (ITTO, 1993). However, outstanding community grievances, especially in relation to land tenure, are unlikely to be resolved successfully without government intervention, including formalised procedures to involve local communities in decisions regarding existing and new plantations.

Box 3-1 discusses an alternative to the more typical large scale industrial plantations that have been introduced in China. This Chinese programme (*tui geng huan lin*) can be commended for supporting the planting of native species to recover degraded land and involving local families in managing the plantations. However, the sustainability of the programme has been jeopardised by not adequately reflecting the concerns and aspirations of local families in the overall design of the planting programme.

Box 3-1: *Tui geng huan lin*: A need to reflect the concerns of local families in programme design

In 1999, just a year after the catastrophic flooding of the Yangtze River, the Chinese government initiated the world's largest afforestation programme, namely *tui geng huan lin* (Land Conversion Programme from Farmland to Forest). *Tui geng huan lin* aims to convert farmlands in ecologically sensitive areas, such as sloping land with an inclination of 25 degrees or more, to forests. Farmers who support the programme receive compensation and subsidies from the government for a maximum of eight years. Compensation is calculated according to the value of grain that would have been harvested from the original farm.

Tui geng huan lin is not a monoculture plantation programme, making it distinct from the fast-wood industrial plantations that are increasingly a feature of the Asian forest landscape. Rather, the programme aims to recover ecologically adaptive mixed vegetation through supplying various native species. Another positive aspect of the *tui geng huan lin* programme is that the plantations are managed by local families.

The Chinese government reports that 19 million hectares were planted under *tui geng huan lin* from 1999 to 2004 (State Forestry Agency, 2005). China's forest cover ratio has rapidly increased from 16.6 per cent in 1999 to 18.2 per cent in 2004, according to the national forest resources survey (ibid.). The government hopes to reduce what it views as China's excessive dependence on imported timber and timber products in the near future by a supply from the domestic plantations.

Research supported by IGES has found that farmers who participate in *tui geng huan lin* are not as optimistic. This is especially true in the western mountainous areas, where eight years of compensation is not enough incentive for farmers to preserve plantations. In a research village in Guiju province, 43.8 per cent of farmers stated that they will have no alternative but to re-cultivate the land under plantation once compensation is ended (Xiang and Seki, 2003).

Our research reveals that while the Chinese government prohibits intercropping, illegal intercropping actually improves plantation quality. *Tui geng huan lin* should thus be amended to allow intercropping and other forms of appropriate agroforestry to provide further incentive for farmers to maintain plantations, and to improve the quality and growth rate of trees (Xiang and Seki, 2003).

In addition to land tenure, issues of financing pose difficulties to industrial plantations. Large initial outlays, long rotations and the costs of compound interest make plantations unattractive to investors.

Governments have provided subsidies, tax concessions and grants as incentives to the private sector, but perhaps too enthusiastically. The World Wide Fund for Nature (WWF) and the World Conservation Union (IUCN) argue that at times incentives have acted perversely to reduce the cover of natural forest and to destroy local livelihoods (WWF/IUCN, 2000).

International financial institutions and development agencies play a critical role in enabling the establishment of new plantations by now usually requiring rigorous, not merely perfunctory, environmental and social impact assessments, as an integral part of their loan pre-assessment processes. In Indonesia, exceptionally large pulp mills were set up next to natural forests with the intention that natural timber would be "mined." The mills could thus operate while waiting 10 years for the plantations to reach maturity. Because of the vast over-capacity of the pulp mills, extensive tracts of natural forest were cleared, and continue to be cleared: FOE (2001) estimated that a Singaporean held company had cleared 220,000 hectares of natural forest in Sumatra by 2001, with the company announcing plans to clear a further 147,000 hectares by 2008. This process was facilitated by international financial institutions that were previously indifferent to social and ecological impacts of the plantations they were financing. A number of mills are in serious financial difficulty, providing an opportunity for the banks now to demand improved social and environmental practices as part of their refinancing arrangements.

Many alternatives to large-scale industrial plantations exist and may offer better prospects for promoting local development and conserving forest resources. Box 3-2 presents an example of how such benefits have been realised by involving local people in the management of teak forests in Java. Another alternative is for forest companies to enter into agreements with local people for timber production. Known as outgrower schemes, these programmes vary from local people leasing land to companies, to arrangements where local people are fully responsible for production. Outgrower schemes are particularly popular in India where government policy limits the amount of land that can be owned by an individual. Here, the companies commonly provide growers with improved seedlings and technical assistance, while growers plant and maintain the trees (Desmond and Race, 2000). Examples of outgrower schemes can also be found in the Pacific Islands. In the Solomon Islands, one company provides seedlings and silvicultural advice to growers who plant trees in small wood lots averaging two hectares. In Vanuatu, another company runs a similar programme allowing growers to keep lower grade timber, in addition to paying the market price for timber purchased. Future initiatives could draw upon the various guidelines for outgrower schemes that have been proposed by FAO (Desmond and Race, 2000), CIFOR (Nawir and Calderon, 2001) and IIED (Mayers and Vermeulen, 2002).

As a strategy to directly tackle poverty alleviation, household forestry has more to offer than large-scale corporate, capital-intensive investments. Household fruit trees have begun to play an important role as a substitute source of timber, especially in countries that have enacted logging bans on natural forests. In Sri Lanka, 40 per cent of timber is supplied by home gardens, a figure that rises to 83 per cent in the Indian state of Kerala (FAO, 2005). Household forestry can be further supported with technical training, credit and marketing schemes.

Box 3-2: Farmer groups participating in the management of teak forests, Java

Teak forests were first planted by the Dutch in Java at the end of nineteenth century. The state-owned forestry enterprise *PN Perhutani* (later renamed *Perum Perhutani*) became responsible for the management of forests after Indonesia won independence. Illegal cutting became prominent from the 1960s, leading to the collapse of the teak plantations.

The situation changed significantly in 2001 when a new regulation on forestry enterprise declared a new paradigm of state-owned plantation forest management. "Collaborative forest management," involving various interest groups such as local government, local communities, private companies, aid institutions and educational institutions, was advocated. Under the previous regulation, ad hoc farmer groups were formed to undertake planting on a periodic basis. In contrast, the current groups are permanent and are engaged directly in forest management; they are not merely a means to provide labour. Gadjah Mada University and a local NGO supported farmer groups to establish self-reliant decision-making systems, supported capacity-building of the groups, and constructed a mechanism for sharing benefits.

IGES research has shown that the new system of forest management was successful in increasing awareness of forest conservation. By allowing continuous intercropping, cultivation under trees, and benefit-sharing from thinning or final cutting, the new regulation offered incentives for local people to preserve the forests. This further motivated them to participate in forest patrols and farmer group meetings. Furthermore, collaborative forest management was successful in building mutually beneficial relationships between local people and *Perum Perhutani*. Growing recognition in *Perum Perhutani* that collaboration with local people was vital to reduce illegal cutting led to in-depth discussions and improved communication with the farmer groups, and greater respect of the opinions of group members. In return, the positive attitudes of *Perum Perhutani* staff improved the local people's perception of the forest enterprise.

Source: Harada (2004a)

(ii) Forest certification

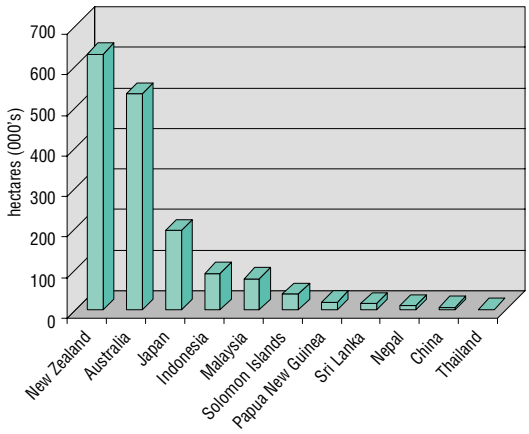
Certification has emerged as a leading instrument in the international dialogue on SFM. Certification was originally envisioned by the Forest Stewardship Council (FSC) as a means of improving the management of the world's largest tropical forests.[9] Expectations have been high: the World Commission on Forests and Sustainable Development (1999) described certification as "perhaps the most powerful 'soft policy' instrument to be designed and implemented outside government."

Certification was developed as a market-based, voluntary instrument under which a third party evaluates performance against minimum standards of forest management. While the concept of certification based on independent forest monitoring using consistent standards has considerable merit, the amount of certified timber in Asia compared with the total timber output remains very low. In Indonesia, despite the advent of a national certification scheme, since 1998 only 14 of 300 forest management units have undergone certification processes, four of which failed altogether, and only one of which fully complied with certification standards (Muhtaman and Prasetyo, 2004). Certification has thus far favoured developed over developing countries, temperate over tropical forests (Fig. 3-2) and large-scale plantations over smallholders and community forests.

Despite the relatively small coverage of certified forests, the rate of expansion in coverage has been rapid.

From its beginnings in 1993, FSC had certified 45 million hectares of forests by 2004. Various innovations to make certification more accessible to producers and growing consumer demand also provide reason for optimism.

Fig. 3-2: Coverage of FSC certified forests in the Asia-Pacific region (2004)



Source: UNEP-WCMC, WWF, FSC and GTZ (2004)

National certification schemes have been established, or are in the process of being established, in several countries in Asia. This is a welcome development that could contribute significantly to SFM. In Papua New Guinea, a national working group was formed in 1997 to develop a national certification scheme. In 2000, the group successfully delivered a set of National Forest Management Standards to FSC for review. A certification working group was also established in Indonesia, leading to the foundation of the Indonesian Ecolabeling Institute in 1998. To gain international recognition for its standards, the Institute signed a Joint Certification Protocol with FSC in 2000.

These schemes, however, need to be placed in perspective and treated cautiously. National standards have not been free of criticism, especially with regards to the claims of indigenous people. For example, although the certification scheme established by the Malaysian Timber Certification Council was based on the ITTO criteria and indicators for sustainable forest management, denial of indigenous people's rights in the Malaysian states of Borneo has a long history and appears to be continuing under the national certification scheme.[10]

Concern has also been expressed that a multiplication in national certification schemes will confuse consumers and procurement agencies. Harmonisation is not desirable, however, as this would compromise the flexibility that underpins the argument for national standards. It is preferable that national standards be developed with the intention of receiving FSC recognition.[11] "Mutual recognition" is another option and can be sought through the global Program for the Endorsement of Forest Certification.

A common complaint from timber producers is that FSC certification standards are too high; the costs incurred in meeting these standards far exceed the higher prices certified timber can command. Stepwise certification has been proposed as a means of inducing producers to make gradual improvements in their harvesting practices. Stepwise approaches involve an assessment of how present practices differ from certification standards, creation of a step-by-step system to improve forest management, and an independent means of verifying progress. Incentives to producers can include the labelling of "transition timber,"

grants, tax-breaks and credit.

Stepwise certification has generally been well received by the logging industry and would appear to have considerable potential to meet the shortfall in supply of FSC certified timber. The Global Forest and Trade Network established by the World Wildlife Fund successfully employs a stepwise approach and now accounts for 53 per cent of the total global trade in certified forest products (Tacconi, Obidzinski and Agung, 2004). However, stepwise models must be treated carefully. A permanent market could develop for 'transition timber' that inhibits progress towards fully certified timber, effectively resulting in a lowering of standards. Timber producers may also be rewarded through government incentives and by the market place for certain improvements in harvesting, while they continue to ignore legitimate claims and grievances of forest-dependent communities.

Other innovations have been directed at making certification more accessible to smallholders and communities. Under "group certification," a local institution acts as an intermediary between the certifying organisation and small-scale timber producers. The intermediary institution provides support necessary for the individual producers to meet certification requirements and, ideally, secures a reliable market for the certified timber. A group certification scheme has been successfully established in East and West New Britain, Papua, New Guinea by the EU funded Eco Forestry Program. Group certification should be strongly promoted as the benefits for producers and the environment can be significant (Box 3-3).

Certification for community-based forestry has proven particularly challenging because of rigidity of the schemes as well as the financial and administrative costs involved. Recognising the need for a certification system suitable for small-scale producers, FSC established the Small and Low Intensity Managed Forests (SLIMF) initiative. Auditing, monitoring and methodologies have been altered to reduce the financial and administrative burden borne by small-scale and intermittent producers. The Indonesian Ecolabeling Institute, working closely with FSC, has established a certification system specifically for community-based forest management. Two villages in central Java received certification for teak and mahogany forests in October 2004. Although the SLIMF and Indonesian Ecolabeling Institute initiatives are positive developments, compliance with all criteria may still be a daunting task for many communities. Communities have expressed a desire to see greater flexibility in the SLIMF initiative that would allow them to draw upon indigenous systems of forest management and in making organisational choices (Molnar, 2003). Some indigenous groups see certification almost as a continuation of the colonial legacy in which outsiders force alien systems upon them. Hence, certification of community-based forestry needs to be approached carefully and weighed against alternative, less demanding strategies to place forest products on the international market place.

Box 3-3: Group certification in the Solomon Islands

The Solomon Western Islands Fair Trade (SWIFT) programme was established in 1994 to enable landowners to resist the approaches of logging companies, as well as provide them with an adequate income. SWIFT was successful in recruiting 250 family, clan and tribal groups as 'producer groups' to supply timber under an "eco-timber" label. SWIFT assisted the groups to formulate management plans, provided credit and technical training for the sustainable harvesting of timber, and established a subsidiary company in the Netherlands to purchase the timber. SWIFT also monitored the producer groups to ascertain whether they were meeting the standards demanded of the "eco-timber" label.

Producer groups received the same income by felling only two trees per year under the SWIFT scheme as they would have received from royalties for allowing loggers to fell between 70-100 trees (SWIFT Netherlands Foundation, 1996). Sustainable harvesting also meant that producer groups could continue to source a variety of resources from their forests. Moreover, selective harvesting did not compromise the environmental functions of the forests.

National producer groups are also being promoted in Asia as an instrument for expanding the coverage of certified forests. The World Wildlife Fund's Global Forest and Trade Network consists of buyer groups - retailers, distributors and specifiers of forest products - and producer groups - forest owners/managers, processors and manufacturers that have achieved, or have displayed commitment to achieving, certification. Two producer groups in Southeast Asia have been established, and further groups are in the process of development. The producer groups are attractive to members as they are able to access international markets while in the process of improving their environmental record. In Japan, a Forest Trade Network was established in 2002 by the World Wildlife Fund to promote credible forest certification. Its members include forest owners/managers, timber processors, forest product retailers, furniture manufacturers and architects. Efforts are needed to expand the number of such buyer and producer groups and their membership, as well as to raise public awareness of their purpose.

In addition to the above innovations, NGOs have an important role to play in advocacy, monitoring, research and public education if certification is to spread more rapidly. Consumer demand for certified timber products in Asia is generally very weak but appears to be growing.[12] Corporate sensitivity to the potential demand for 'green labels' has been heightened by the activities of the NGO sector. A few Japanese companies have made declarations to no longer procure woodchips from old-growth forests in Tasmania in order to avoid potential legal battles with international NGOs such as Greenpeace and the negative public imagery that would result. After pressure from Japanese NGOs, one of those Japanese companies announced it would take steps to source all products from responsible operations and a Japanese paper mill company has recently stated it will introduce certification into all its overseas and domestic forests. Important relationships are developing between NGOs in importing and exporting countries concerned about the global trade in wood products. Japanese NGOs are working closely with their Indonesian counterparts to encourage Japanese importers to reject wood products from several corporations.

(iii) Towards well-adjusted community forestry [13]

The increase in plantation forestry in Asia discussed earlier has been paralleled by a trend towards greater community involvement in forestry over the past three decades. As with plantation forestry, however, the history of community forestry has not been smooth.

During most of the 20th century, forest management in tropical countries developed largely under the paradigm of sustainable timber yields. Cooke (1999) observed that "the aim was to produce a steady supply of timber (sustained yield) by cultivating even-aged plantations; the tenets also promoted conversion of natural forests (viewed as low-productivity) into high-productivity plantations." This focus on economic gain excluded communities from forest management and resulted in social unrest. A growing number of foresters came to acknowledge that the traditional concepts of industrial and scientific forestry did not provide adequate models for SFM. By the late 1970s, the concept of "social forestry" had begun to gain prominence in international forestry dialogue, spurred by the World Forestry Congress held in Jakarta in 1978 with "Forests for People" as its central theme. The social forestry movement was further propelled by the FAO report *Forestry for Local Community Development* released in the same year. The FAO emphasised that forest conservation and management should be devolved and that local participation should be encouraged. Reflecting popular sentiments of the time, community forestry was defined very broadly as forestry that includes any situation which intimately involves local people in a forestry activity (FAO, 1978).

It seems probable that official adoption of social forestry occurred first in India.[14] In 1970, the Indian National Commission on Agriculture was constituted to look into the problems of the forestry sector. In order to free forest lands for commercial forestry, it suggested that local communities' needs should be met by a social forestry programme on non-forest lands, such as village commons, government wastelands and farmlands. The two components of the Social Forestry Program were the reclamation of degraded lands for fuelwood plantations and farm forestry to supply timber to processing factories. However, these were not as successful as anticipated. The conversion of agricultural land to farm forestry reduced the long-term demand for rural labour and mainly benefited wealthier farmers who could afford to wait the seven years for trees to mature. The fuelwood plantations also did not receive the expected local support as the species chosen were inappropriate and as local communities had already developed strategies to cope with shortages (Cooke, 1999).

By the mid-1980s, it was apparent that the strategy suggested by the National Commission on Agriculture was not working. Forests were continuing to be degraded and there were increasing conflicts between the local communities and the forest department. A new forest policy was issued in 1988 that completely reversed the objectives of forest management. The new policy stressed management of forests for conservation and meeting local communities' needs and made commercial exploitation and revenue generation subsidiary to these objectives. In 1990, based on the new forest policy and encouraging results from some pioneering experiments in community-based forest management, the government initiated Joint Forest Management (JFM). Under JFM, the forest department and the village community enter into an agreement to protect and manage jointly forest land adjoining villages and to share the responsibilities and benefits. The village community is represented through a body specifically formed for the purpose, most commonly referred to as forest protection committees. Currently, 27 states have adopted JFM and by September 2003, there were 84,632 JFM groups protecting and managing over 17 million hectares of state forest lands (Bahuguna et al., 2004).

The Philippines also experienced a similar progression in community forestry. Under the Integrated Social Forestry programme that was introduced in the 1970s, 25-year stewardship contracts are offered to upland forest dwellers. 25 per cent of the land under the agreement must be planted in trees, and the remainder can be used for livestock rearing or agriculture. Community-Based Forest Management was introduced officially in 1995 and is based on NGO-community partnerships to replant degraded lands. Three years after the plantations are established, the NGOs withdraw and the community is awarded a 25-year contract to manage the afforested land. The communities are entitled to use the forested land and gain a percentage of earnings from harvesting. The government plans to assign 900 million ha (58 per cent of the entire forest of the Philippines) under community schemes by 2008.

Other examples of government policy to involve local communities in forest management can be found in most countries of the region, but it is beyond the scope of this chapter to describe and assess all of these. The discussion of social forestry in India above, however, is indicative of a lesson that many countries share; that is, simply involving local people in forestry will not necessarily improve forest management.

The example of forest user groups in Nepal presented in Box 3-4 highlights that for community forestry to succeed, individual schemes must be finely-tuned to reflect local circumstances. Well-organised local communities aware of the need to preserve natural resources have an important role to play in SFM. Problems, however, do exist in these communities. Conflict, factional rivalries, unequal access to resources and unequal power relations within communities can impact negatively on community forestry.

Box 3-4: Community forestry in Nepal

Nepal was the first country in Asia to pass legislation supporting community-based forest management. Under the Panchayat Forest and Panchayat Protected Forest Rules of 1978, bare forest land and forests were handed over to the smallest political unit, the *panchayat*. Communities in the *panchayat* were responsible for sowing seeds, protecting and maintaining forests and implementing a scientific forestry management plan. The achievements of community forestry can be seen in terms of better forest condition, social mobilisation and income generation for rural development (Kanel, 2005).

Panchayats proved to be too large as social units for community forestry, however, as forests and land were not handed over to actual users. The new Forest Act (1993) and Forest Rules (1995) gave absolute right to local people in managing their community forests. Under this legislation, local community forest user groups (CFUGs) were institutionalised as independent self-governing entities. The CFUGs are voluntary, independent and self-governing organisations legitimised by the District Forest Offices. Approximately 25 per cent of existing national forests has been handed over to 13,300 CFUGs, constituting about 35 per cent of the total population.

A study commissioned by IGES concluded that thus far the decisions of CFUGs are not as conducive to the poor, women and lower castes as anticipated (Kanel, 2005). Elites and the wealthy capture many of the benefits from community forests. In order for decision–making to be more effective and equitable, the Joint Technical Review committee, 2001 recommended two members from each household, one woman and one man, be included in the CFUG committees. At present, 25 per cent of the executive members of the CFUGs are women. Such representation is a step forward, but disadvantaged groups still find it difficult to participate at meetings. Local people consider their position on the committees to be prestigious and are reluctant to surrender these to disadvantaged groups (Mahajan et al., 2004). The next challenge thus lies in building the confidence of the poor, lower castes and women to express their concerns at public meetings.

IGES research on community forestry in the Philippines (Pulhin and Pulhin, 2003) has delivered a number of strong messages. The Philippines experience has highlighted the importance of secure land tenure for community development. Until recently, forest occupants, including indigenous people, were treated as "squatters" or "encroachers" in forestlands. This situation has been largely corrected under Community-Based Forest Management (CBFM) and its early predecessors. Six different types of tenure instruments

have been developed since 1983 that recognise the vested rights of forest occupants, both migrants and indigenous people, to access and enjoy the benefits of forest resources.

The Philippines experience suggests that community forestry will succeed only if communities can build sustainable livelihoods through a combination of forest-based and non-forest-based activities. An innovative source of capital for livelihood projects under CBFM has come from limited use of forest products such as timber and rattan. This applies particularly to those projects that have been given a resource-use permit to utilise forest products to augment participants' incomes. The scheme is based on the principle of "borrowing from nature to finance community and forest development." Part of the income from the sale of legally harvested products from natural forests is invested in existing plantations to finance livelihood projects, reforestation and related forestry activities to ensure forest sustainability. Despite such innovations, the inability to provide sufficient levels of employment and sustainable livelihoods remains one of the greatest challenges to CBFM projects.

In addition, CBFM requires that forestry personnel see their roles as facilitators in catalysing SFM, rather than primarily as regulators. Most forestry personnel responsible for the implementation of CBFM projects in the Philippines have found it difficult to make this transition. CBFM requires strong institutional support, which in the Philippines has been hampered by advocates of corporate forestry and the competing interests of the different actors including NGOs, local government units, project organisers and those from various layers of the bureaucracy.

(iv) Protected areas: Melding biodiversity conservation with livelihoods

The histories of community forestry and protected areas are markedly different, though both arose in response to the failure of industrial forestry to conserve forest resources. Community forestry sought to actively engage local people in forestry, whereas the protected area movement sought to establish boundaries to keep local people out of forests. However, just as community forestry has progressed as lessons have been learnt, so too has the design and management of protected areas.

While Asia is broadly recognised as rich in biodiversity, the recent acceleration of biodiversity loss has become a critical issue in SFM. Indonesia, Malaysia and the Philippines are listed among the world's biodiversity hotspots (Yoshida, 2003) and under the World Conservation Union's 'red list' of threatened species, 4,103 species in Asia (excluding Oceania) are labelled as critically endangered, endangered or vulnerable (IUCN, 2004).

Conservationist groups have stressed that Asian governments must respond to the growing threat to biodiversity by setting aside protected areas under strict regulations. This argument led to a rapid increase in the number of protected areas, especially from the 1970s onwards (Harada, 2005a). In 2000, 9.7 per cent of natural forests in the Asia-Pacific region were classified as protected areas, only slightly less than the 10 per cent target set by the World Conservation Union (IUCN) (FAO, 2001). Bhutan, Brunei Darussalam, Cambodia and Lao PDR have all set aside 20 per cent or more of their forests as protected areas, compared with Russia where the figure falls below 4 per cent (ibid.).

Protected areas have succeeded in promoting SFM by enabling forests to serve a variety of traditional and newer functions: conservation of watersheds and ecological processes; the protection of biodiversity; the creation of recreation/tourism possibilities; as well as providing resources for education and research. However, the conventional model of protected areas has excluded local people from forests with detrimental consequences for their livelihoods and in some instances the ecological integrity of the protected areas themselves. The administration of protected areas has focussed primarily on ecological issues, disregarding

the needs of local populations and often thrusting them into difficult circumstances where their livelihoods are undermined and they are labelled as law-breakers. In Southeast Asian countries, local people commonly ignore forest policies that prohibit them from entering protected areas as these encompass localities where they have lived and constructed their livelihoods for many generations (Box 3-5). Mistrust and misunderstanding between local people and park authorities associated with the fundamental concept of national parks have further marginalised local people and forced them to resort to destructive forestry practices.

Box 3-5: Gunung Halimun National Park, West Java

In Indonesia, forest laws of protected areas explicitly prohibit local communities from dwelling inside national parks. Local people living nearby are also strictly prohibited from accessing forest resources within the parks. Problems arise as local communities have no alternative but to enter the parks and extract resources.

Gunung Halimun National Park, designated as a national park in 1992 in West Java, exhibits these problems. Administration was based on the zoning management system - core zone, wilderness zone, intensive use zone. Buffer zones and enclaves were established around and inside the park, respectively, to allow people to pursue livelihood-related activities.

Local people have resided inside and near the park from long before it was established. IGES research has found that while local people acknowledge the importance of conserving forest ecosystems to some extent, they continue to utilise the land for agricultural purposes with traditional techniques such as swidden cultivation, paddy fields and gardens. They continue to depend heavily on the forest resources within the park. The borders of the buffer zones and enclaves, which regulate the geographical scope of their activities, are not clearly identified leading to encroachment into the park.

Local government authorities have adopted a policy of strictly adhering to official policies, disregarding the livelihood needs of local people. Latent conflict between local people and park authorities has the potential to trigger the further destruction of forests.

Source: Harada (2003, 2004b, 2005b)

Protected area management appears to be moving beyond the policy of exclusion. For example, buffer zones are located around many national parks in Southeast Asia, usually permitting local people to undertake a range of economic and subsistence activities. In Cambodia and Lao PDR, forest policies allow indigenous people to gather non-timber forest products from buffer zones. Enclaves, on the other hand, are located geographically inside of national parks, but are not administered by the park. Local people can cultivate crops and use resources within enclaves. If protected areas are to play a role more successfully in sustainable forest management, further innovative measures, such as those described in Box 3-6, will have to be found to meld biodiversity conservation with the livelihoods of the people.

When establishing protected areas, Harada (2005a) has found that consideration should be given to gaining a thorough knowledge of traditional land tenure systems, of how forest resources are used, and boundaries must be carefully determined. Many boundaries of protected areas in Southeast Asia are delineated on maps, but these boundaries cannot be identified on the ground. Outsiders can use poorly identified boundaries to their advantage by crossing over into protected areas and logging illegally or converting forests to

plantations and other agricultural uses.

Box 3-6: Jiuzhaigou Biosphere Reserve, Western China

In the Jiuzhaigou Biosphere Reserve, resident Tibetan communities host more than a million Chinese tourists per year. The administration of the park was established not only with conservation in mind, but also to serve the needs of the local Tibetan communities. To restore the ecology of the park, local people were asked to cease farming, yak rides for tourists and other activities inside the park boundary that were damaging the environment. Strict controls were placed on the numbers of tourists visiting the park. "Green buses," using clean burning fuel, now transport tourists on roadways through the park - they stop only at designated spots where tourists can stroll on boardwalks. No overnight stays in the park are allowed.

Local people were offered a variety of compensation measures for halting business activities within the park. In addition to a lump sum cash payment, every local is entitled to employment, either waged or sales-dependent. The types of work range from bus-drivers, tourist guides, rubbish collectors, environmental protectionists, tree planters, costume-renters and photo sales, to fire wardens. Those who wish to run their own business can request a site in the park's business centre. Unemployed local residents can apply to the park administration which is obliged to find them work. The park also has one restaurant in which each family is entitled to purchase shares the equivalent of a ¥20,000 maximum. Local people own 49 per cent of shares, the park owns the remainder. Almost all tourists eat here – an average of 6,000 visitors per day - making this a lucrative investment.

According to members of the Tibetan village Panyazhai, their well-being has been enhanced through their association with the park. The success of the park is based on appropriate regulation achieved through partnerships between local communities, the tourism industry and the State as represented by the county government and the reserve administration.

Source: Dombroski (2005)

Even if protected areas are well-designed taking into account the local livelihood needs, governments often do not provide sufficient resources for their protection and administration. Entrance and user fees can be charged as a means of gaining revenue to better finance protected areas, though visitor numbers and activities must be controlled in order to minimise the negative impact on the natural environment. An additional common problem is that administrative officials may have insufficient knowledge of protected area management and lack a firm grasp of world trends. It is vital that governments provide responsible personnel with the right training and, when involved parties alone cannot properly manage protected areas, further reinforce their management systems by involving outside parties, such as development agencies, domestic and foreign NGOs and researchers.

(v) Trade measures for sustainable forestry: a new agenda

As a result of a broad movement towards the relaxing of import controls and the lowering and removal of tariffs on timber and wood products, international trade has become increasingly significant to SFM. A unique feature of the trade in forest products is that natural resources and man-made resources compete in the same market. This competition is advantageous for the former because in man-made forests (regenera-

tive forestry) planting and maintenance costs must be met, whereas these costs are absent in logging from natural forest (exploitation forestry).

The exploitation of natural forests gives some countries a strong, albeit unsustainable, competitive advantage. Other countries seeking to establish or preserve their own forest industry find that timber from local regenerative forestry cannot compete in the domestic market with wood imports from exploitation forestry. For example, in Japan, at US$73 per square metre of wood produced, planting and maintenance costs of man-made forests are the world's highest (Shimamoto, 1998). Increasing numbers of plantation owners in Japan are abandoning their forests (Endoh, 2000). Mountainous communities, dependent on the sustainable management of forest plantations, have been impoverished due to their inability to compete with imported natural forest products. The unregulated market place, in which natural forest products of Southeast Asia compete with man-made forest products of Japan, has resulted in over-cutting in the former and the abandonment of sustainable management of the latter.

Many Japanese scholars have presented the above circumstances as a problem unique to Japan. However, research supported by IGES has found that unequal competition between man-made forest and natural forest products is reflected in inter-South trade.

Shimamoto, Ubukata, and Seki (2004) analysed the timber trade of the Philippines, Thailand, and Indonesia, finding that ASEAN countries can be divided into two categories: the first consists of timber importing countries where large expanses of natural forest have already been lost partly due to commercial logging in the past. For such countries, reforestation and supplying timber from domestic plantations are now an important component of the forestry agenda: the Philippines and Thailand are examples. The second category is represented by timber exporting countries, such as Indonesia, that enjoy a competitive advantage in forest products as they still have large expanses of natural forests to exploit.

The Philippines has been a net importer of timber since 1986, though in the 1960s it was one of the world's biggest timber exporting countries. In the 1990s, timber trade liberalisation accelerated in response to the request by ASEAN and the WTO. The Philippine government reduced its tariffs on plywood imports from 50 per cent in 1995 to 20 per cent in 1997. The outcome was an increase in total forest product imports at the expense of local regenerative forestry.

Philippine domestic timber industries, such as plywood companies, secured supplies of timber from small-scale upland tree farmers. This encouraged Philippine upland farmers to plant fast-growing tree species. However, domestic plywood companies predicted that if tariffs fell further, domestic plywood would no longer be competitive with imported plywood. Further liberalisation of international timber markets is likely to lead to the abandonment of tree plantations by upland farmers.

In Thailand, market-driven, small-scale reforestation has been successful only for eucalyptus destined for pulp. The planting of indigenous species including teak has stagnated. Domestic sawn wood and plywood producers have already forsaken the domestic wood supply and now rely on imported logs including illegally harvested timber from neighboring countries. In contrast, with its vast primary forests and a cheap, largely unprotected labour force, Indonesia can still produce natural forest products competitively. Rampant illegal logging, and a policy of promoting the export of forest products to secure much needed foreign currency, has accelerated the degradation of natural forests.

Shimamoto, Ubukata and Seki (2004) conclude that the conventional wisdom of free trade in forest products as consistent with SFM when the government has adequate administrative capacity is not persuasive.

They argue that the control of trade in forest products should be considered under international rules from the viewpoint of forest sustainability. For countries where domestic primary forest has already been lost, import tariffs can be an effective way to encourage regenerative forestry. In countries where primary forests are under threat, export tariffs can be effective to discourage unsustainable, exploitation forestry.

Assuming this to be correct, then it would follow that to achieve the interests of SFM specific trade measures for forest products should be permitted. At present, the WTO recognises only two categories of trade commodities - industrial and agricultural goods. Forest products are classified as the former. A new subcategory of natural resources specifying logs and roughly processed forest products could be introduced under "industrial commodities." Opposition to such a proposal would doubtless arise, given that it runs counter to the precepts of full trade liberalisation. In this regard, the Japanese government has resisted further tariff reductions in forest products, but its position remains relatively isolated internationally. If breakthroughs are to occur on this issue through a reshaping of the current WTO position, then new arrangements and agreements between both developed and developing countries will be required.

Non-tariff trade measures will be critical in moving towards more sustainable forestry. The need for a comprehensive response to illegal logging was spelt out at the first meeting of G8 Environment and Development Ministers in March 2005. The G8 Ministers resolved to take steps to halt the import and marketing of illegally harvested timber, for example, by giving appropriate powers to border control authorities through voluntary bilateral and regional arrangements or other arrangements consistent with WTO rules.

Regional responses are necessary when dealing with the trade in illegal timber and wood products. The consequences of unilateral state responses to illegal logging highlight the importance of regional co-operation: bans on logging in Thailand and China have to some extent relocated logging sites to other countries. A regional initiative should be taken, with possible guidance sought from the Forest Law Enforcement, Governance and Trade Action Plan presented by the European Commission in 2003. The Action Plan is centred on voluntary timber import licensing schemes applicable on a product-by-product basis under bilateral arrangements. Indonesia and Malaysia have already joined in discussions with the Commission. However, the Action Plan has been criticised by international NGOs as lacking the compliance and enforcement regimes required to successfully combat illegal timber imports. Voluntary arrangements alone will not stop illegal timber imports from countries outside the arrangements, or from illegally harvested timber being processed in a third country before re-export. Legislation is required for officials to seize what they suspect to be illegal timber at the point of import for voluntary licensing agreements to be successful. Coordination between customs agencies, including a system of prior notification, is required to identify shipments of timber transported under forged documents. Though solutions appear relatively straightforward, communication among customs agencies in Asia is very poor and it is rare for shipments of illegal timber to be seized.

Bilateral agreements between Japan and Indonesia, and China and Indonesia have yet to yield significant results in stemming the tide of illegal timber imports, and are unlikely to do so in their present form. The Japanese government has forged a bilateral arrangement with Indonesia for procurement of timber favouring the Indonesian BRIK (Revitalization of Forest Industry Board) scheme. This scheme has been criticised however for lacking transparency, independent auditing and traceability (Royal Institute of International Affairs, 2004). In a recent study of 16 Indonesia mills, including several recognised by BRIK, all failed to meet minimum criteria of legality (ibid.). For bilateral agreements to be successful, independent monitoring of timber harvesting, processing and transportation is required. Credible systems, such as FSC chain of custody certification, already exist and could be used by Japan under its bilateral

agreement with Indonesia. To meet Japan's timber needs, efforts would have to be directed at building the capacity of Indonesian suppliers to achieve chain of custody requirements.

Public procurement can be used as a catalyst to promote legal timber imports; roughly 18 per cent of global trade in timber, pulp, paper and furniture is to satisfy government procurement demands (Toyne, O'Brien and Nelson, 2002). Japan has made progress through establishing a green procurement law in May 2001, with the Ministry of Environment setting annual targets for a range of products including paper, stationary and construction goods. However, the guidelines do not deal adequately with issues of the legality of wood products and an independent study of one construction project commissioned by the Ministry of Environment found no checking of the legality of the timber used (Nakazawa, 2005). Reform of the green procurement law is thus required to include the legal status of all wood products and construction materials.

Initiatives outside the region may offer instruction for improving public procurement practices in Asia. The UK established an interdepartmental working group in 2000 to coordinate wood purchasing policy across all departments. A Central Point of Expertise on Timber was established in June 2004, initially focussing on definitions for legal and sustainable timber. The UK approach envisions that preference for public contracts will firstly be given to sustainably harvested timber, and secondly, to timber that can at least meet minimal standards of legality. Asian countries should closely monitor progress in the UK and other states with more advanced procurement policies, with a view to reforming their own timber and wood product requirements in public contracts.

Conclusion: Meeting the challenges for sustainable forest management in Asia

Broad appreciation of the need for SFM now exists within Asian countries. Unfortunately, this recognition has not been translated into practice on a large scale, though new innovations discussed in this chapter are signs of progress. The following key strategic messages can be drawn from the preceding discussion:

(i) Forestry must be positioned within a broader inter-sectoral approach to rural development

First, as many of the underlying causes of forest loss and degradation cut across all sectors of the national economy, forestry must not be viewed in isolation; rather, forestry must be positioned within a broader inter-sectoral approach to rural development. In this chapter, the discussion on instruments to tackle the ongoing depletion and degradation of natural forests was necessarily restricted to the forestry sector. Yet, solutions to the forest crisis must also be sought in policy reform outside forestry. For example, agricultural policy has an important role to play in reducing pressure on remaining natural forests. Agricultural research and policy can mitigate the demand of expanding populations for land by improving the productivity of existing agricultural land, by providing land-use opportunities to the landless and by creating off-farm employment opportunities. The call here is for a second "Green Revolution" in which new agricultural technology is not just made available to larger landholders, but also to smallholders with little capital, as well as to the landless.

(ii) Reform of governance structures is critical

Second, governance mechanisms that hold decision-makers accountable and reflect the legitimate concerns and aspirations of all social groups, not merely those with influence, are critical. The mixed experience with decentralisation of forest management in the region indicates how difficult a task this is. The manner in which forests are governed in the Asian region is being shaped by the interplay of a complex and often competing set of dynamic global, national and local forces and an increasingly diverse array of actors. Many of these forces, if left unchecked, are clearly not conducive to SFM.

(iii) Ecological concerns must be melded with sustainable livelihoods

Third, to achieve SFM ecological concerns must be melded with efforts to build sustainable and adequate livelihoods. Living standards are said to have generally improved in many Asian countries, but poverty remains widespread and the challenge remains how to improve livelihoods without irreparably damaging the natural resource base. Clearly, ecological policies that do not pay heed to the livelihood needs of resource poor communities are not only unjust, but, as spelled out by the experience of some national parks, are likely to be ineffective. Conventional interventions to build livelihoods through the sustainable use of natural resources such as agro-forestry and homestead forestry have considerable potential for expansion. Newer approaches, such as involving local communities in providing services to tourists visiting national parks and small forestry enterprise certification, must also be pursued to their fullest potential.

(iv) Innovative market and trade instruments needed that promote and reward sustainable forest management

Fourth, consumers and producers, as well as developed and developing countries, must be brought together to support trade practices that prioritise the conservation of forest resources. Globalisation is often described as a contraction of both time and space; due to advances in communications and transport technologies, goods can be transported rapidly around the globe from the site of production to that of consumption. While this phenomenon is usually viewed in positive terms, the contraction of space removes consumers from the immediate impacts of production processes. A teak chair manufactured from timber in Indonesia that finds its way to a furniture store in Europe may be associated with illegal harvesting processes, unsatisfactory working conditions and the destruction of local livelihoods. How is the consumer to know this? Forest certification offers one means of altering production processes and consumption patterns to more sustainable ones. The reflection of SFM concerns in public procurement policies might also act to catalyse trade in sustainably harvested timber. Bilateral arrangements could likewise play an important role in curbing trade in illegal timber and may be an important step towards a regional trade mechanism. Given the extent of illegal and destructive logging practices in Asia, as well as the involvement of powerful interest groups, the challenge remains immense.