A report prepared for the project

Lessons Learnt on Sustainable Forest Management in Africa

LESSONS LEARNT FROM SUSTAINABLE FOREST MANAGEMENT INITIATIVES IN ASIA

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Lessons Learnt on Sustainable Forest Management in Africa

Lessons learnt from Sustainable Forest Management initiatives in Asia

by

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1.0 INTRODUCTION

This paper analyses policy, institutional and management designs of a wide array of forestry sectors and initiatives and related socio-economic contexts in South and Southeast Asian countries. It discusses select and representative case studies from a number of forestry sectors across Asia. The paper also addresses key initiatives that have been taken in the past several decades to sustainably use and manage forest lands and usufruct. The purpose of this study is to learn from successes and failures of these initiatives in Asia and especially to better understand how successes can be replicated and failures avoided.

1.1 Structure of the report

The paper is divided into three parts. The introductory section provides an overview of forestry in Asia, the overall socio-economic and political context in which forest use and management operates in the region, along with a brief history and recent trends in forestry practices. This section lists the objectives and scope of this study and run through the background of each of the six case studies, reasons they were selected and the areas and situations that have been discussed (as well as omissions and limitation of the study).

The second part of the paper discusses six case studies, drawing examples from India, Pakistan, Nepal, Sri Lanka, Malaysia, Philippines, Indonesia and China. A chapter each discusses the historical background of forests management in the Asian and Southeast Asian countries, social forestry, farm forestry, industrial (plantation) forestry, non-timber forest products, and participatory forestry on state-owned forest lands. In each case study, the paper discusses the conditions that led to that particular initiative, the socio-political and institutional context in which the initiative has worked, and the successes, failures and criticism that each initiative has faced.

The concluding part of the study sums up the points that are made in case studies and draws lessons that can be learnt from the Asian forestry experience.

1.2 Asian forestry: A gamut of experience

Asia has had a pioneering experience in scientific forestry and, later on, in social forestry and involvement of rural communities in forest management, especially through initiatives like joint forest management. Also, large-scale plantations and farm forestry have shown promising results in producing wood for commercial purposes. Each of these initiatives has been discussed in academic research and received popular coverage in press and journals. It can be expected that a cross-case analysis of these initiatives will yield a format from which lessons can be drawn for a variety of forest management situations.

South Asia has been successful in lowering the rate of deforestation in the past decade even though it suffers from a scarcity of forest land, poverty and high population levels. The major concern is human-induced degradation of forests and other natural resources that ultimately threatens the sustainability of life, livelihoods and long-term development. Promoting economic development while conserving the environment and natural resources is a great challenge for South Asian countries. National and international developments during the last decade have changed the way people and institutions in South Asia perceive and value their forests. Countries throughout the sub-region are seeking to redefine traditional roles and expand participation in forest management, planning, monitoring and policy. However, these new perceptions and approaches have not yet been able to make significant changes in the traditional uses of goods and services from forests. The collection of fuelwood remains the main use of the forest, and it is recognised that fundamental changes will be difficult to make without major strides in economic development and poverty reduction.

Southeast Asia, on the other hand, has been successful in diversifying into plantation and industrial forestry; however, it is plagued with problems of illegal logging, deforestation and unmet needs of indigenous and local population groups. Although the process of forest policy and legislation in southeast Asia have evolved over the years to recognise the multiplicity of forest functions and the need to give local

people greater rights and responsibilities over forests, the bias towards timber production continues to persist in management practices.

1.3 Evolving face of society-forest relationships

The case studies presented here point to the continuum that exists in society-forest relationships and the management of forest has been evolving depending on the larger economic, social and environmental context. *Hammond (1997)* has pointed out how the inter-relationship between human development and forests has shown remarkably similar patterns throughout the world, and through time. The countries in south Asia and the Asia-Pacific region still contain different phases of forest-man interrelationship. For example, the primitive 'hunter/gatherer' situation is present in parts of Papua New Guinea, Malaysia, and other Asia-Pacific countries. The next phase of development of agricultural land from forest exists all over Asia, while smaller population groups have moved on to make industrial use of forests.

To complement the importance of society-forest relationships, there is a clear shift in the focus on how we understand deforestation, land degradation, and other problematic environmental issues in developing countries. The most compelling models to explain disturbances in natural systems in recent decades have not come from pure (physical) sciences but from factors that are embedded in history, social structures and sociopolitical forces. *Adams (1990)*, for example, views environment management (and development) as a political process where the core of green planning lies "not in its concern with ecology or environment *per se*, but in its concern with control, power and self-determination". In a much quoted work, *Blaikie and Brookfield (1987)* suggest that the causes of environmental problems lie in the societal infrastructure and inequalities. The stereotypes, such as population pressure (*Ehrlich, 1968*), carrying capacity (*Hardin 1968*), measures of productivity, and poor indigenous management that had marked the studies of environmental degradation (as the standard reasons for environmental degradation) were sidelined by concepts of sustainable indigenous practices (*Peluso, 1992; Sen, 1992*), policy, prioritisation of needs of the rural population (*Jodha, 1986; Agarwal, 1986*), and the need to harness community interdependence to build sustainable institutions (*Wade, 1994*). These approaches combined concerns of gender (*Sarin, 1996; Shiva, 1989*), heterogeneity of interests in rural societies (*Byres, 1994*), and even economic opportunities for the rural population and private sector in natural resources (*Naik, 1997*). A variety of solutions are being found to serve our forest needs, ranging from artificially raised plantations, making multiple uses of forests, and using global markets for better and sustainable returns.

2.0 FORESTRY OVERVIEW: COLONIAL LEGACIES AND CURRENT FORESTRY INSTITUTIONS AND POLICIES

2.1 Introduction

This chapter provides an overview of the history and current institutional arrangements of forest management systems in South and Southeastern Asian states. It provides an overview of forest policies and infrastructure and common themes of large state ownership, colonial infrastructure that the nation states inherited and post-Independence reforms that were carried out.

World War II hastened the demise of the colonial system in South and Southeast Asia. After the war, the European nations were too financially strapped with decimated infrastructure to continue with their stake in the colonies. However, in the immediate post Independence period little changed in administrations. The colonies were typically converted into nation states with bureaucracies virtually identical to the ones established by colonial governments, although in some countries the military assumed greater importance. Until the early 1970s, Asian countries continued to use older laws and management systems, which were proving to be hostile even to the subsistence needs of its forest citizens, and other goals such as production forestry or, later, devolution of decision at community level. To address these issues, the states began to chart unique forest management styles.

2.2 Southeast Asia

The sub-region consists of the countries of Brunei Darussalam, Cambodia, East Timor, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Viet Nam (see *Map1*).

2.2.1 Indonesia

Indonesia has 10% of the world's and 60% of Asia's tropical forests. There are at least 19 different forest types in Indonesia, including coastal forests, mangroves, peat, swamp, wetland, evergreen, bamboo, savanna and montane forests. Of the 4,000 species of trees in Indonesia, around 120 hardwood species are recognised as being suitable for commercial use. Of these, about 48 (mainly *Dipterocarp spp*) are used in the plywood industry. Secondary forest products, such as plywood, sawn timber, rattan and paper are the most important non-oil exports (earning $US 5.15 billion or 25% of the country's industrial exports in 1993). Indonesia also contains a significant proportion of the world's remaining virgin forests. In 1990, there were 46 million hectares of virgin production forest in Indonesia; however, a FAO study predicted that this may be significantly reduced in the coming decades (*Hammond, 1997*). Consequently, there are concerns to balance rich revenue generating forests with policies that could safeguard the health and diversity of the forests.

Overview of forestry policy and infrastructure

The principle of forest land being owned by the state was established during the colonial era, and was reaffirmed in 1945 when the Indonesian Constitution was written. The country opted for a strong centralised control of legal and tenurial authority over forest resources and management practices.[1] However, when the Suharto regime replaced President Sukarno, it set up what was termed as the 'New Order' government. As part of this new order, the regime passed the Foreign Investment Act in 1967. This Act was indicative of a shift in economic and foreign policy away from economic nationalism towards rapid economic development through foreign investments. In the hopes of developing the forest sector, the Act outlined a number of significant incentives for foreign firms and set the stage for what was to become a heavily subsidised, corporate-controlled and export-oriented logging industry. Given the initial lack of processing capability (e.g. capital) and management capacity on the part of the national forest sector, Indonesia's logging boom was necessarily based on export of raw logs. By the end of the 1970s, Indonesia's share of total global exports of tropical wood had risen from 0 to over 40%, the majority of which was unprocessed (*Kuchli, 1997*).

Downplaying community rights and evolution of plantation forestry

In 1967, the 'Basic Forestry Law' empowered the Ministry of Forestry to, 'determine and regulate legal relations between individuals or corporate bodies and deal with legal activities related to forests', leading to a virtual legal disenfranchisement of forest communities (*Lynch and Talbott, 1995*). Also, the 'Basic Agrarian Law' of 1960 does recognise customary law as the basis for national land law. However, this is not extended to tracts that are classified as forest area (*ibid., 1995*). Given this legal rationale for overriding customary rights within a forest area, the government routinely interprets the Basic Forestry Law as superseding the Agrarian Law in designated forest areas.[2]

Since the resignation of Suharto, and in an effort to reprioritise national development objectives, a wide array of policy reforms have been sweeping all levels and sectors of the Indonesian economy. Large-scale commercial timber extraction within the Outer Islands, which contain the majority of Indonesia's forests,

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[1] Upon acquiring Indonesia in 1816, the Dutch gave primacy to plantation agriculture and due to the 1830's 'Culture system' law, the peasants were obligated to plant a part of their land according to colonial mandate, often neglecting their subsistence crops (*Lynch and Talbott, 1995*).

[2] In practice, the only tenurial right formally granted to forest communities in all of the 30 million hectares of protected forest is to collect rattan (*Lynch and Talbott, 1995*).

was limited in scale and extent until the mid to late 1960s. While the colonial state established legal authority over all forest lands in the late 1800s, a lack of state capacity – due in large part to the extensive geography of the Outer Islands, and limited market demand – enabled many forest-dependent communities on these islands to maintain traditional community-based management systems until relatively recently. In 1990, a regulation was passed restricting the claims of local institutions over the allocation of customary lands for timber plantations and other commercial uses (*Poffenberger, 1999*). However, a rapidly expanding and heavily subsidised wood processing industry has resulted in a continued high rate of deforestation and forest degradation. Persistently low costs for extraction of raw materials have encouraged wasteful production, and the state continues to be ineffective in regulating the industry (*Kuchli, 1997; Poffenberger, 1997*). The economic success that this industry has generated has been based on a cheap supply of raw materials and government protection, enriching a small elite group at considerable cost to the environment, the government, and local communities (*Poffenberger, 1997, 1999*).

Indonesia is the largest exporter of tropical timber in the world. About one tenth of its export earnings come from timber. However, Indonesia has also faced major problems in illegal logging that is widely seen as being institutionalised within the bureaucracy and intermediary institutions. Illegal logging is rampant, forest laws are not enforced, profits are concentrated in the hands of a few corporations, corruption is widespread and the forest industry is in disarray. At the present rate of deforestation of 1.8 million ha per year, Indonesia's remaining forests could be completely destroyed within 15 years. Sumatra has already lost 60% of its most valuable forest cover (*CIFOR, 2002*).

Recent trends

Until recently, the primary objective of Indonesia's forest management plans was to generate revenue to replace oil and gas export earnings. That phase of exploitation is now passing, with the Government turning attention towards protection of the environment and sustained yield management of the forests, to support a forest-based industry. The Ministry of Forestry developed the National Forestry Action Plan (NFAP) to coordinate forestry goals with the five year economic plans (*Repelitas*). For example, from *Repelita* I through IV (1969-1989), the long term national goals were mainly to open up the Outer Islands for forestry development and rapid development of forest-based industries. The *Repelita* V (1989-1994) saw emphasis move more towards sustainable development, including improved forest inspections, including the use of aerial photography and satellite technology, integration of logging and processing activities and forest training programmes. More recently, the *Repelita* VI (1995-1999) modified the focus of forestry to include conservation of ecosystems, with emphasis on forest protection and soil and water conservation, improvement of natural forest management, establishment of industrial plantations, improvement of the efficiency of forest based industries and, also, promotion of people's participation in forestry development.

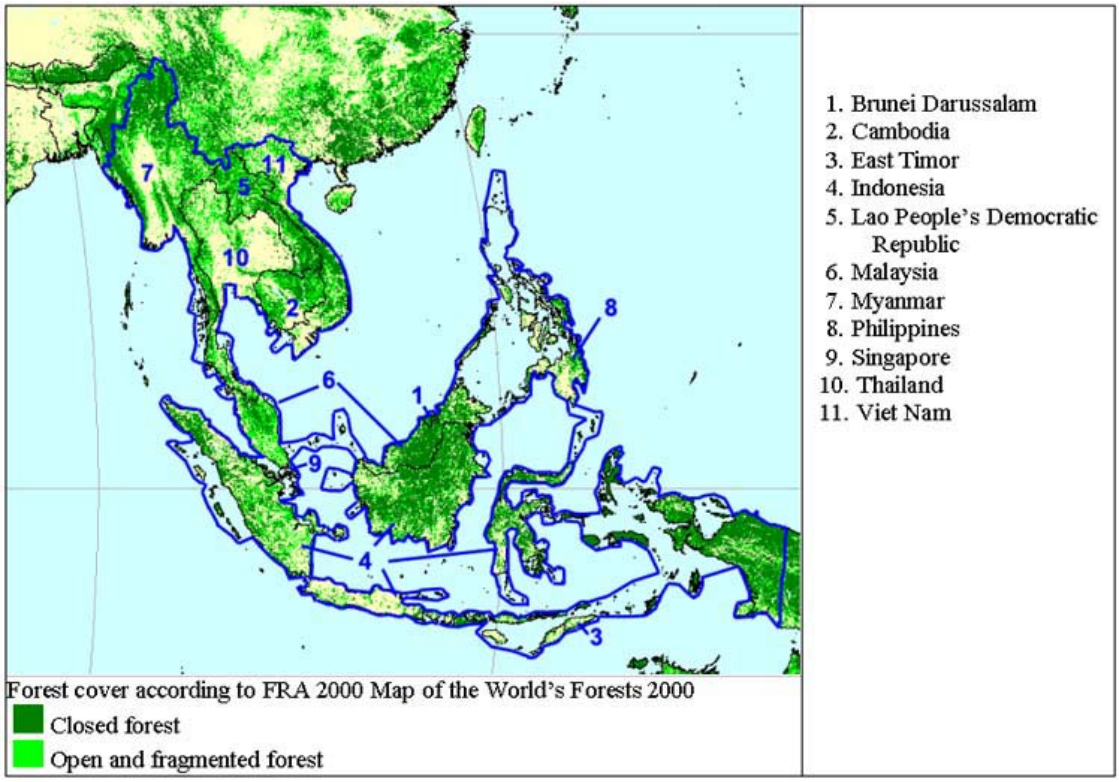
The country is developing fast growing plantations under the HTI (Industrial Tree Estate) programme. These plantations covered about 1.34 million hectares in 1994, with the majority being teak (67%), pine (23%), mahogany (8%) and *Agathis*. The government plans to decrease production from natural forests by 2% per year, and increase the reliance on plantations with a goal of having half the country's wood production sourced from them by 2020 (*Hammond, 1997*).[3] Also, there are efforts to seek community participation and decentralise forest management systems. As part of the decentralisation process, the 1999 revised forestry law gave district heads the right to hand out logging licenses for areas not larger than 100 ha (see also chapter 3 Social Forestry).

2.2.2 The Philippines

The forest area of the Philippines is estimated to have declined from 12 million ha in 1960 to a current level of about 5.7 million ha (which includes less than 1 million ha of virgin forests, largely confined to very steep and inaccessible areas). Harvests have been reduced from 6.4 million m^3 in 1980 to 0.8 million m^3 in 1995. The reduction has been the result of a number of factors including a Government ban on the export of logs in 1986, a ban on the export of timber in 1989, and a Forestry Master Plan introduced in 1991 banning the harvest of virgin forests. In spite of these bans, the rate of deforestation remained at about 150,000 hectares in the 1980s (caused by shifting cultivation, land use conversion, forest fires, illegal logging and

[3] In June 2002, Indonesia placed a ban on the export of unprocessed logs, and in August 2003 announced a complete ban on logging on Java (*FAO, 2003*).

fuelwood extraction). On the other hand, a total of 1.4 million ha of plantation forest has been established with the Master Plan aiming to have additional plantations of about 3 million hectares by 2015, although this goal may be difficult to achieve (*FAO, 1997*).



Map 1: Forest cover in Southeast Asian countries (source: *FAO, 2000*).

Overview of forestry policy and infrastructure

The history of forest policy in the Philippines can be divided into four main periods: a period of low exploitation during colonial, wartime and post-war eras; a period of increased exploitation for development during the post-independence era; a peak of logging and concession exploitation during the 1960s and 1970s; and one of building a forest products industry in the 1970s and 1980s (*FAO, 1997*). The colonial forest laws were different in the sense that the Spanish administrators, unlike the Dutch and the British, recognised two kinds of private property rights during the first 350 years of their rule: those held by custom and those held by the Crown. The first Spanish settlement was established in the Philippines in 1565, marking the onset of Spanish colonial rule. The Spanish-American War ended in 1898 with the transfer of the Philippines to United States control. However, the legal significance of land registration, for example, was never conclusively resolved by the colonial governments, nor were records systematically maintained. Also, many territories, not unlike other Asian colonies, remained beyond the actual control of the colonial government.

The second period coincided with independence (1946) and the need to develop the country and its economy. The new constitution provided that all timber land belonged to the state. Forest policy did not change much but greater emphasis was placed on the production of timber. This meant more revenue to the government, much needed to accelerate development. This period also saw the change to modern

mechanised technology. Also introduced was the application of selective logging of the *dipterocarp* forests.[4]

The third period was the peak period of exploitation of the Philippine forests, starting in the early 1960s. Harvests from the forest rose rapidly with little concern for long term sustainability of this harvest. The large multi-national logging companies were able to make enormous profits from the continued growth of harvesting volumes, often in association with local business people, the almost insatiable demand for logs from Japan in particular, and the government. Ironically, much of the revenue was being used to provide agricultural lands for rural populations who had no other way of making a living. The fourth period saw a move towards a local forest products industry. During the 1960s and 1970s, as much as 80% of the recorded log production had been exported as raw logs.

Recent trends

A major turning point in the history of the country and of forest policy was the democratic elections held in 1986, and the end of martial law which had dominated life and policy development of the country. The new government tried to implement a range of changes including decentralisation of powers and much greater involvement of the people in decision making and seeking greater input from NGO's and other interested groups. There were efforts also to secure land tenure for forest users. With consent from the government, private individuals and entities could use forest land for traditional forestry purposes, pasture, agriculture and other pursuits under short term permits and long term leases. In upland areas, occupancy is legitimised through issuance of Certificates of Stewardship Contracts (CSC) which grant 25 year tenure, renewable to 50 years.

A Master Plan for Forest Development (MPFD) was formulated in 1990. A new set of regulations, including a draft of the forest code, the National Integrated Protected Area System Act, and the Environmental Code have been introduced to conserve the forest resources and address the problems of environmental degradation. Pursuant to the MPFD, approximately one million ha of residual, logged-over forest have been targeted for management under the Community Forestry Programme over the next 25 years, which will involve local communities in the management of the forest resource and encourage large companies to focus more on processing of the products produced by the community projects. In another development, in 1992 a complete ban on the logging of the remaining old growth forest was introduced. Of the NTFPs, rattan was given special consideration in the development of forest policy due to its importance as an export earner and importance to rural people (see chapter on NTFPs).

The Philippines has moved from being a major exporter of wood in both raw and processed form to a country facing a significant shortage of supply. The recent changes in forest policy conform to the increasing recognition that government decrees and bureaucracy cannot alone achieve SFM, and it is only through and by the people who are affected that long term solutions can be found. A 'people-oriented' approach is expected to continue to be the focus of policy reform.

2.2.3 Malaysia

The forest area in Malaysia in 1991 was estimated to be 58% of the country (around 18.5 million ha, of which about 80% is *Dipterocarp* forest). The forests range from swamp (mangrove), to low to montane forests. The major timber producing region is Sarawak, which produces 44% of the total harvest. In Malaysia, the forestry sector has been shaped by historical factors such as the British influence, impacts of World Wars (and Japanese occupation of Malaya), and the post-1970s shift towards commercial forestry. More than 95% of the forest land in Malaysia is owned by state governments who have monopoly rights over their respective forest lands. However, in 1978 in order to address the problem of depleted forests, the federal government formulated a National Forest Policy aimed at coordinating forestry programmes. The National Forest Council, the body implementing the policy, has, however, no jurisdiction over Sabah and Sarawak, both areas of huge log supplies.

Overview of forestry policy and infrastructure

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[4] Prior to this development, logging occurred without much concern for any future harvest from the forest.

Forest harvesting in Malaysia is regulated and controlled under well-defined concession systems. Malaysia uses an area control approach, whereby a certain area of forest is designated for harvesting each year. This is done through the allocation of an annual felling coupe, based on resource availability and current forest management practices. These areas are allocated as forest concessions using a license tender process (*FAO, 2003*). As noted above, the states have a virtual monopoly over their respective forest land, with full powers of disposal. These forest lands provide an important source of revenue for financing the recurrent and development expenditure in the individual states. Because forest revenues accrue directly to each state, the state governments earn resource rents from logging. Downstream industries pay federal taxes, which accrue to the federal government and, therefore, often receive less attention from state governments. Thus, federal and state interests differ where forest resource utilisation is concerned.[5]

There are several commonalities and differences in forest policies and utilisation between the three principal States in Malaysia – Sabah, Sarawak and peninsular Malaysia. All states encourage forest-based industrialisation, and forest policy has traditionally placed an emphasis on wood production with much less on the non-wood potential of the forest. In the past, the state governments have all derived significant revenue flows from taxes related to forest products, especially from export taxes. In 1971, the National Forestry Council was established to facilitate the adoption of coordinated and rational utilisation of forest resources, consistent with the need to maintain forests as long-term renewable resources. In 1978, the National Forest Policy was formalised with the primary objective to expand the role of the permanent forest estate to protective, productive and amenity forestry. This represented the first concerted effort towards a holistic approach to forest management, with specific allowances being made for ecological considerations (*Kumari, 1994*).

Recent trends

At present, Sabah contains some of the world's richest remaining rainforests, and shifting cultivation remains a major driver of deforestation. Peninsular Malaysia, however, has much poorer forests and conversion of forest to permanent agriculture is the major cause of deforestation. Sarawak contains valuable peat swamps where the much prized *ramin* trees are harvested.

The increasing evidence of the impact of deforestation on both industrial and domestic wood users has resulted in significant changes in forest utilisation. The levels of harvest are declining and even the current reduced harvest is, according to some, unsustainable. There has also been a significant move away from the export of unprocessed logs and a move towards much greater levels of local processing.

As in many Asia-Pacific countries, conflicts between traditional resource users (usually indigenous people) and the more recent demand for industrial fibre supply to industry and to produce export income, continue to plague Malaysia. Fuelwood demand in Malaysia is significantly less important than in may other countries in the region. Nevertheless, requirements pose a largely insidious threat to forests. Much of the market for fuelwood is informal, making it difficult to measure and even more difficult to manage. It is being realised by the policy makers that in fuelwood and other forest-related issues, local people involvement is vital. Also, accepting the paradigm of forests as multifunctional, has gained currency in forest management in Malaysia.

2.3 South Asia

The South Asian sub-region is made up of seven countries – Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan and Sri Lanka (see *Map 2*).

[5] The Constitution, under Article 94(1), ninth schedule, however, empowers the federal government to formulate such forestry legislation as may be necessary to promote uniformity between two or more states.

2.3.1 India

Although India is the seventh largest country in the world, only 1.8% of the world's forests are found here. Based on 1997 data, obtained by Indian Remote Sensing Satellite, forests in India cover approximately 23% of the area. However, a more realistic estimate shows that forests cover only 11% of the land base. Out of India's population of one billion, 360 million live in or around forest areas, exerting tremendous pressure on limited forest resources. This is in addition to the need to fulfil the requirements of urban population and wood-based industries.

Overview of forestry policy and infrastructure

Growing demands for timber, associated with the railway boom of the late 1800s, and a growing dissatisfaction with the legal restrictions imposed by previous legislation led to the institution of the Indian Forest Act in 1878. According to this, the state was recognised as sole proprietor of classified forest lands. State forest lands were loosely defined as lands which did not fall under 'continuous' cultivation or 'permanent' settlement. Traditional forest practices, including grazing, forest-based gathering, and forest-based swidden or rotational agriculture were rejected as a basis for private property rights (*Lynch and Talbot, 1995; Poffenberger and Singh, 1996*). A new Indian Forest Act was instituted in 1927 (with few substantive changes over the 1878 Act) and it remains the legislative basis for state forest management today for over one-fourth of the country's land that are under the state-run Forest Departments (FDs).

In 1976 (during the national Emergency period), there was an important shift in the management paradigm when the Agricultural Commission recommended that forests that had remained under the control of individual provinces were to be made a *concurrent* subject between the States and the centre. The government in New Delhi was to play the core role in formulating policy guidelines and coordinating forestry programmes. The private contractors who had worked as intermediaries in forest work such as harvesting and sale of timber were not permitted to enter forest land, and, instead, the Forest Development Corporation (FDC) was established to carry out forestry work on behalf of the government. It was argued that, because the interests of the centre and the States did not coincide, the government in New Delhi could arguably take a long-term view (*Vira, 1995*). This arrangement allowed conservationists, international agencies, and voluntary groups, despite their low numerical strength, to have a considerable influence on the direction of policy at the level of the centre (*Guha, 1994*). State governments were subject to regional and local pressures, which might not be a factor for decision making at the centre, it was argued (*Vira, 1995*). However, the centralisation of control of forest resources left the forest departments with less power to deal with regional realities and bargain with pressure groups from the community and other institutions from civil society (*Rangan, 1993*).

Although the States are entitled to have their own forest policies, very few States have done so. The implementation of the GOI-issued policies are limited because, first, these are non-statutory and advisory statements issued by GOI and lack the force of law; second, implementation of forest projects and policies is under the control of State governments who may have different political compulsions from the GOI. Third, what is implemented in the field is generally what is provided in the budget, and many policy prescriptions, not supported by matching funds, remain unimplemented. Fourth, India's powerful bureaucracy has its own predilections and may act as filter to what is demanded of it by governments. Radical and swift changes in policies may therefore take longer than expected to implement if the officers are unconvinced of the need for the changes (*Kumar, 2000*).

India has addressed deforestation problems more constructively than many other Asian countries. In India, degradation, not deforestation, is the major forest management concern.[6] Agricultural intensification in India has helped to remove some of the pressure on marginal lands on which most of the degraded forests remain. Still, the main problems that adversely affect the forest resources of this sub-region are the inability of forest resources to satisfy demand at the local level, the rapidly increasing use of forest resources by a fast-growing population, and a poor enforcement of forest regulations (*FAO, 2000*).

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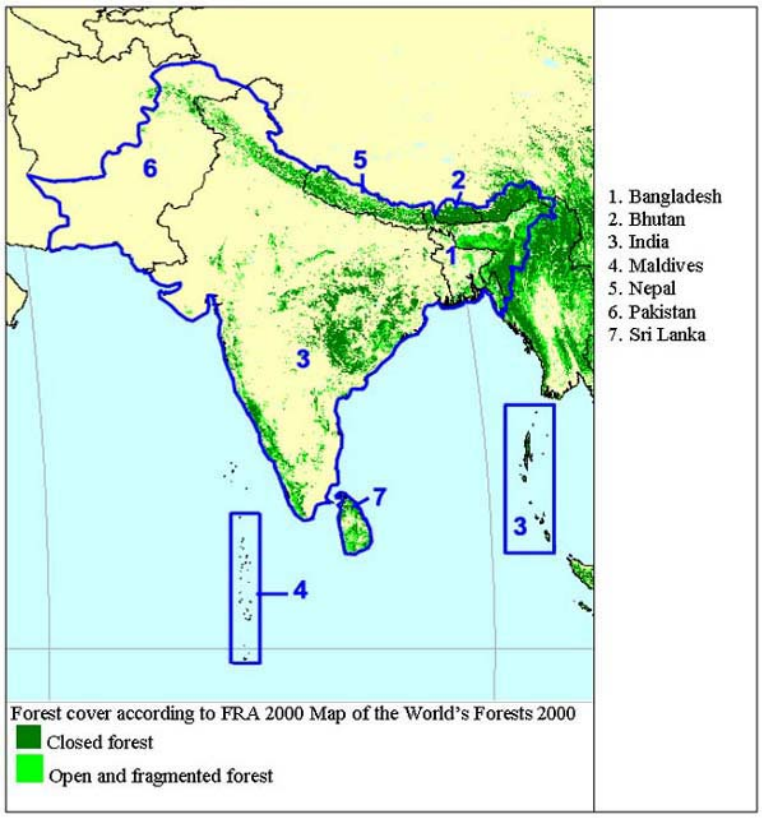
[6] *Hammond (1997)* provides a useful distinction between deforestation and degradation of forests. By deforestation, a permanent change of land use is implied. For example, if one hectare of secondary forest is cleared by swidden cultivators and allowed to re-grow after one or two years of cropping, we consider that as a disturbance; it may be degradation, but is not deforestation. Degradation on the other hand means a substantial decrease in the ability of the forest to supply particular benefits.

2.3.2 Pakistan

Pakistan has less forest than most Asian countries. Its natural forest asset is small – covering only around 3% of the total land area (*FAO, 2000*). Yet Pakistan's demands on forests are high and getting higher – the population is growing at 3% per year and industrial growth at about 6% demands construction wood, fuelwood and water from forested watersheds (*Ahmed and Mahmood, 1998*).

Forest Departments directly control around 66 % of the forest area. A big part of these forests came under Government control in 1970-71 when forest lands owned by several former princely states were merged with the state. The forest departments and laws that were initiated in the 19th century under British rule continue more or less unchanged. The forestry framework is centralised in management operations, focused strongly on timber harvesting from natural forests, and place governmental control above local need. Due to the unrealistic policy framework and poor bureaucratic infrastructure the '*de facto*' position in several areas is that forest lands are 'free-for-all', and are treated as open property resources.

Pakistan has carried out limited forestry reforms, notably through the National Forest Policy of 1991, and has encouraged participatory rural development forestry projects. Several forestry reform guidelines in Pakistan have been initiated as a result of donor programmes (USAID) and UN agencies (FAO), with meaningful policy changes on paper but little effective change at the field level. Pakistan continues to need a multi-stakeholder forest management system, with greater decentralisation at provincial and lower levels, a considerable expansion of community forest management activities, strengthening of rural organisations to practise sustainable forestry, support income for rural people from forest products and reorganising and strengthening forest authorities to support these initiatives (*Ahmed and Mahmood, 1998*).



Map 2: Forest cover in South Asian countries (Source*: FAO, 2000).*

2.3.3 Nepal

Nepal's geo-political situation has influenced how its forest policies are designed. The Himalayan Kingdom covers an area of 147,000 sq. km (*MOPE, 1998*), of which forests and shrubs occupy roughly 40%. Nepal can be divided into three physiographic regions: Terai, or the plains, Hills and Mountains. Economically, the most important forest area is in the Terai – a narrow, fertile and densely populated lowland along the border with India.[7] Traded timber from the terai provides a major source of revenue for the state. By contrast, forests in the mid-hills region are scattered, intermixed with settlements and agricultural land, not easily accessible, and valued primarily for meeting the basic needs of the local population. In the period between1978 and 1994, the forest area in Nepal decreased at an annual rate of 1.7%. Forest is the main source of energy for about 70% of the people. About 42% of the total digestible nutrient to cattle is obtained from the forests (*MOPE, 1998*). Forest products continue to be items of daily requirement of the ordinary people (*Dhungana. 1999*).

Overview of forestry policy and infrastructure

Influenced by India's Independence, Nepal replaced the Rana regime with the Shah monarchy in 1951, and, again, following India's example, abolished private ownership of forest lands in 1957 and brought all of country's forest under the direct control of the state (albeit resulting in large scale destruction of forest to convert forest lands to agricultural land to save from government ownership). Thus, these laws helped consolidate the state's power over vast areas of forested land and provided it with immense tenurial powers. The declaration of martial law and the establishment of the *Panchayat* system in 1959 meant that, though seemingly rooted in culture, it did not encourage popular participation and power rested mostly with local elites. In the next several years, Nepal's forestry saw consolidation of central power over the resources and management. Policing was given primacy with certain laws (Forest Preservation Act of 1967 empowered district forest officers to open fire at violators).

In 1978, the government handed over limited areas of forest lands to *panchayats* (now replaced by local elected governments), a practice that excluded forest users who lived outside the *panchayats* administrative area. This led to adoption of the concept of user group management in 1988 (*World Bank, 2001*).

Recent trends

A number of factors, including political resistance, regulatory enforcement and adjustments, population growth, excessive dependence of the people on forest resources, and a paradigmatic shift in global development thinking have contributed to evolve the forest management systems in Nepal into the present phase of decentralisation and devolution. The early statutes had proved harmful to the development and conservation of the Nepalese forests.

The change started with the National Forestry Plan of 1976 that listed the major constraints to forest management and proposed policies to tackle them. The Plan recognised the critical situation of forestry at the time and laid down, as objectives for forest management, the restoration of the balance of nature, economic mobilisation, practicing scientific management, development of technology and promotion of public cooperation. However, the Plan was only partly implemented (*MPFSP, 1988*). The community forestry thrust followed the formulation of *panchayat* forest rules in 1978. In the late 1980s, a rhetorical consensus was reached between the Government of Nepal and donors over the need to hand over the management and usufruct rights of forests to Community Forest User Groups (CFUGs) (*Robinson and Pokharel, 2004*). With the restoration of democracy in 1990, the country moved towards a more effective decentralised process that started to replace the elitist *panchayats*. Under the current arrangement, the government owns the land, but UGs are entitled to 100% of the benefits flowing from forests under their protection. Currently, 15% of Nepal's forest land is protected and managed by community forest user groups with greater success in mid-Hills areas than in *terai* (*World Bank, 2001*) (see *chapter 6* for a detailed discussion on community forestry in Nepal).

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[7] 80% of Nepal is either Hills or Mountains. The country experiences tropical, mesothermal, microthermal, taiga and tundra types of climate (*CBS, 1998*). The vegetation of Nepal includes tropical zone forest, sub-tropical forest, lower temperate forest, upper temperate forest, sub-alpine forest and alpine zone vegetation.

2.3.4 Sri Lanka

Sri Lanka currently has a forest cover of about 20% of its area.[8] Much of the forest loss is attributed to the creation of plantations of tea, rubber, coconut and other crops during the colonial period (*Carter et al., 1994*).[9] Plantation establishment aimed to replace forest loss have been encouraged through cultivation of fallow or *chena* lands.

Overview of forestry policy and infrastructure

In Sri Lanka, the Forest Department has depended on colonial scientific management methods and perceptions (for example, blame traditional swidden agriculture as a main reason for forest degradation). The colonial marginalisation of Sinhalese people started with the Portuguese rule in the 16th century, continued with the subsequent Dutch rule in the 17th and better part of the 18th centuries to finally give way to the British occupation in 1796. The conflict between the British and Sri Lanka's forest-dependent peoples was primarily economic. At issue was coffee, the East India Company's most profitable commodity. In 1840, the British Colonial Administration ruled in favour of the planters by promulgating the Crown lands (Encroachment) Ordinance which abrogated undocumented community-based property rights and declared that 'all forests, waste, unoccupied or uncultivated land' were vested in the Crown. As a result, all fallow (*chena*) lands lying uncultivated were made available to the cartel's planters. A century and half later, this ordinance remains the legal foundation for most recognised property rights in Sri Lanka.

Recent trends

The annual planting rates by the Forest Department have been on the decline compared to the 1960s and 1970s. The forest plantation sub-sector has become increasingly dependent on foreign funding. Other recent trends are the almost complete cessation of planting of pines and limiting the planting of eucalypts mainly to replacement after felling of the up- country stands, and responding to popular criticisms, the emphasis is now being given to planting of indigenous hardwood, such as teak and *margosa*. As the forest policy emphasis was given to timber and fuel wood production, the expansion of planted forest was used as the main strategy to meet new demands and reduce pressure on the natural forests.

Despite the agreement on the need to strengthen the various sectors, forestry infrastructure and policy remain low-key in the country. The first forestry sector master plan, which was formulated in 1986, was revised and a new plan was developed in 1995. As a part of this formulation exercise, a new forest policy was also developed and accepted by the government in mid-1995. Some of the objectives and goals of the sector include establishment of a protected area network, creation of permanent forest estates, and also encouraging agro-forestry systems. It is proposed that forest plantations will be managed as commercial ventures with partnerships from community based organisations and the private sector. Also, the use of NTFPs and building of rural industries based on non-timber forest resources are encouraged.

2.4 Discussion

South and Southeast Asian nations started with Western legal doctrines, principles and bureaucratic management systems to manage their forests. To secure legal access to forests, colonial governments often usurped traditional tenurial rights. Having legally appropriated land and forest resources, the colonial states granted extensive logging concessions without regard for the needs of forest dependent communities. On acquiring their Independence, the newly created nation states inherited large chunks of the countries' land as forests that were put under the management and control of the state.

In the past few decades, there has been an increased acceptance of community involvement in forestry and a certain withdrawal in policing of forest resources by the Forest Departments. The evolution has resulted

[8] At the turn of the century nearly 70% of the country was forested.

[9] However, after Independence a major cause of deforestation is attributed to the Mahaweli Development Programme, a major irrigation scheme fed by a series of dams across Sri Lanka's largest river (*ibid. 1994*).

in several contradictory factors: often, there are presences of colonial statutes, modern laws, ecological and peoples goals along with legal and business agreements and a variety of community-based tenurial arrangements. Indeed, when these systems come into conflict, the government's inability or outright refusal to negotiate and enforce equitable outcomes undermine incentives for local level sustainable management. There is a growing realisation on the importance of involving local communities in forest management if forest cover and diversity are to be sustained. The states (often under the influence of donors and private industries) have tried to redesign policies to ensure local participation (on the other hand, several state-sanctioned incentives for local sustainable management were found inadequate as discussed in later chapters).

The massive, sometimes transient, populations of Asia, along with some traditional tenure systems that have relied on common access to forests, have often conflicted with policy initiatives. This has led to a general failure to meet many forest management objectives defined by governments, particularly those relating to conservation and sustainability. While many countries are experimenting with participatory systems, the region generally retains a strong paternalistic approach to forest management. In most countries, government forestry agencies continue to dominate forest ownership and management, and government officers display high degrees of scepticism over local people's ability to manage forests sustainably and often resist changes towards more participatory forestry.[10] Some countries have, on the other hand, moved to specialised production and industrial forestry while still battling with problems of sustainable supply of raw materials, illegal logging and fulfilling local needs in rich-timber areas.

3.0 SOCIAL FORESTRY

Over the last two decades, a number of Asian countries have made widely celebrated reforms designed to give local people greater rights and responsibilities over forests. One of the earliest experiments involving people in forest management was through social forestry schemes. Through these programmes, the forest department sought participation of local population in varying degrees for afforestation of a variety of lands – albeit not on state-owned forest lands – such as village grazing commons, revenue lands, roadsides, along railways, private nurseries, homesteads and farmlands. This chapter addresses the achievements and failures the social forestry programmes in India and the lessons that were learnt from various projects. The chapter also discusses other Asian countries' attempts at involving communities in afforestation programmes and to address peoples' needs.

3.1 India: A leader in social forestry

By the mid-1970s, it was clear that India's Forest Departments were unable to conserve forest and the ever increasing pressure on forest (mainly for fuelwood) had visibly challenged the state's control over the resources. Also, the traditional and extension forestry models were heavily criticised as inadequately meeting the social demands on forests. As a result, social forestry programmes were started based on the report of the National Commission on Agriculture (NCA) which recommended using private farm land and community lands for growing fuelwood and fodder to meet rural peoples' subsistence needs.[11] The social forestry programme also emerged as part of a larger national rhetoric on equity and poverty eradication. Unlike traditional production or protection forestry, the responsibilities of raising, protecting and maintaining social forestry lie with the people, with technical and institutional support from the forest departments. Social forestry thus implied a paradigmatic shift in seeing forest management bringing

[10] In Europe, public ownership is found in Germany and Switzerland, while farmers are the major forest owners in Scandinavia, Britain, Austria and the Mediterranean countries. Fifty percent of Latin America's forests are in private hands, as are the bulk of forests in Japan and Korea. Both the USA and China have swung towards and then away from public forest ownership (*Shepherd, 1986*).

[11] Industrial needs of the country too were addressed in the report. (To be discussed)

economic, ecological, and social benefits to the people, particularly to the poor rural population, and not focus on the silvicultural management alone.

3.1.1 Social forestry schemes

As a leader in social forestry (*Warren, 1995*), India embarked on a series of participatory interventions in support of it:

- village woodlots,
- strip plantation (roadsides and along railways),
- fuelwood plantations,
- farm forestry,
- agroforestry,
- home gardens,
- urban forestry,
- festival of trees (van mahotsava), and
- education camps, nurseries, research and training, and so on.

In doing so, social forestry was the state's effort to keep the pressure off the natural forest resources by creating pools of fodder and timber that would cover the needs of people and also arrest the deterioration of natural forests. Every Indian State took up social forestry and engaged in distribution, raising, plantation of seeds and saplings, either free of cost or at highly subsidised prices. Large afforestation programmes were conceived using fast growing trees.

3.1.2 Performance of different social forestry models

In terms of meeting tree planting targets, most social forestry projects were extremely successful. The drive to plant trees was unparalleled. For instance, the total area planted between 1950 and 1979 was 3.5 million ha, at an average of 0.11 million ha/year. The total area planted between 1980 and 1989 was 11.8 million ha, at an average of 1.3 million ha/year (*Krishnaswamy, 1994*). However, social forestry programmes were also criticised for failing to realise their primary objective of producing fuelwood for domestic use, even while becoming successful in growing trees (*Blair, 1986*). The various social forestry programmes brought in a mixed bag of results:

***Forestry on common lands*:** The results on village woodlots were mixed; while some local institutions participated in the programme, most had reservations on whether to participate. The target under this programme was never quite met because of asking of free labour that had to come from the poor and the landless while the benefits were open to all members of the community, in fact, with village elites having better access to the forest management and use. Village woodlots instead came to be viewed as government plantation schemes and were treated with the same ambivalence and disdain as any other forest land.

Strip plantations on public lands proved expensive and difficult to establish. Spread along long areas, trees are difficult to manage, monitor and they take years to mature. The FD on its part failed to come forward with management systems for these plantations.

Farm forestry turned out to be the most efficient method of increasing overall wood supply in the face of acute scarcity. The greater preference for private farm forestry over village wasteland afforestation was because the former permitted greater control over management and access to benefits (see the following chapter for a detailed discussion on farm forestry).

Extension programmes (education camps, nurseries and training): The extension services that were intended for participants of social forestry were never fully effective and sustained in India.[12] The services, when available, came with a top-down approach, where external agents made the choice and demonstrated authority and the farmers played a passive role (*Falconer, 1987*). There were few attempts to diversify forestry extension into other concerns and priorities of rural life, such as agriculture and husbandry.

3.1.3 A barrage of criticisms

The major criticism that social forestry faced was the disjunction between its intended goals and actual products. Villagers, for example, found the income generation a prime incentive for participation. The planners had overestimated the demands for fuelwood and the severity of the situation. To secure fuelwood from the programmes was often relegated to a secondary priority by the villagers. There was also criticism of the promotion of monoculture[13], the low participation of women and tribals, and the benefits awarded to richer sections of society. The tribal populations were left out from afforestation programmes because of either lack of information and access, or plain apathy on the part of Forest Departments. It is now understood that women too – despite having an important role in forest use and management and being the first to be affected in cases of fuelwood shortage – were left in the cold: whenever any income got generated from the social forestry programmes it went to the male head of the family. The programmes also failed to actively address women needs or involve them in management and decision-making processes.

Two problematic aspects, however, involved (i) the programme's commercial orientation, as exemplified in the species selected, and (ii) the level of intervention and type of management institution utilised. First, most projects focused on planting of eucalypts, which, due to its rapid growth and marketability for construction poles, was conceived as providing a quick economic return. However, they require excessive watering and discourage both undergrowth planting and the production of non-timber related products. The preference of rural communities was the planting of mixed tree species for fruit, fodder and timber. In focusing on growing eucalyptus monocultures for sale, state directed projects did little to address the problems of fuelwood or fodder scarcity and thus the unregulated use of state production forests (*Palit, 1996; Josayma, 1998*).

There were problems of an institutional mismatch when implementing the social forestry programmes. In the attempt to involve local communities in the activities, state forest departments typically worked through local government units (LGUs), or specifically, the *gram panchayat*. These LGUs often exhibit little reference to existing social, cultural or economic boundaries. Experience with social forestry in India has shown that these institutions are typically too large, heterogeneous, politicised, and far removed from the resource to serve as effective management structures (*Sarin, 1996*). As discussed above, the extension services that were planned to support the social forestry programmes were inefficient. Still, the most serious constraint to social forestry was poor understanding of the social, economic and political heterogeneity in rural communities. Although still not fully understood, it is now generally agreed that community forestry is more successful in cases where socio-economic homogeneity is high.

The lands on which social forestry was being practiced (which were often common property resources - CPRs) had poor tenure security that could encourage sustained participation. Many CPR theorists have tried to explain how a woodfuel shortage may have been perceived, but to expect the needy villagers to plant trees was always problematic. For example, if the shortage was on common land, no user has a duty to replant. Decision about the redefinition of common land for some other purpose was difficult and, as every villager knew, was likely to lead to lost usufruct rights for some (added to this was the fact that trees are a long-term investment; delayed returns are especially unattractive to poor farmers (*Shepherd, 1985*)). Also, individuals are reluctant to spend their labour on tree-raising if they have doubts about their rights to the trees they grow. In countries where all trees legally belong to the state and may not be cut without its

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[12] In the broadest sense, extension is an education process where there is exchange of information between farmers and other resource users, local leaders, researchers, administrators, managers and policy makers (*Falconer, 1987*).

[13] The debate on monoculture is discussed in the next chapter, Farm Forestry.

permission, villagers will, quite rationally, refuse to plant trees. *Warren (1995)* noted failures in 'distributional characteristics' of usufruct that were generated from social forestry schemes.

The social forestry programmes found willing funding bodies in the World Bank, USAID, DANIDA, DFID, Sida, and Overseas Economic Cooperation Fund (OECF).[14] These donors were, however, accused of attempting to influence the direction of policy, especially for regeneration of degraded forest areas and wildlife conservation (*Vira, 1995*). The international agencies came under increasing attack for promoting a 'top-down' approach, which the participatory programme, in theory at least, was to eliminate. They also were alleged to have a vested interest in the country's corridors of power (*Nesmith, 1991; Shiva, 1989*).

3.1.4 Discussion

Social forestry proved more difficult to institute than what was hoped by the policy makers. For one, the priorities for foresters and for villagers in growing of trees were often different. Villagers' priorities and problems were not always elicited; the village, and, within that, the household, were often not sufficiently disaggregated, so that conflicting goals or exploitative relationships went unobserved. The legislative and institutional frameworks within which social forestry was proposed were never reassuring to the villagers. The conservative mindset of forest bureaucracies was of little help since there was a lack of training in human and social science skills, which social forestry demands of them. Until then, they had been taught to try to keep 'trees and people separate'. For most of the social forestry projects, individuals and households were taken as units that would participate in the programmes. This approach never ensured group commitment and social forestry programmes had no provision of institutionalising cohesive groups within villages to form parties to planting activities and management. The *panchayats* that were responsible for overseeing the social forestry programmes functioned to the detriment of poor. The undemocratic power structure that typically exists in villages needs to be appreciated.

In India, the relationship between the community and forest department evolved and improved when some of these problems were addressed in next phase of state-citizen partnership – in the shape of Joint Forest Management (JFM), where communities could be involved directly in state-owned forest lands with important usufruct rights (discussed in *Chapter 8*).[15]

3.2 Social forestry in other Asian countries

3.2.1 Sri Lanka

Sri Lanka has done little in promoting and institutionalising community-based forest management. This is partly because there is only a token public registration of concern over forest depletion. Communities have rarely faced severe shortages of forest products that sparked the rhetoric for community-based management in India, Nepal, the Philippines and other countries. Nonetheless, in 1980, responding to world forest management trends, Sri Lanka's National Forest Policy was expanded to specifically add a community forestry agenda to involve local communities in the development of private woodlots and forestry farms through programmes of social forestry.

In the current Forestry Master Plan (1990-), the importance of involving community-based organisations in the management and preservation of Sri Lanka's forest has been accepted as a concept. On the other hand, there has been no revision in forest legislation to support community initiatives or any major structural changes in the Forest Department to attune it to community forestry schemes. The only government-sponsored social forestry initiative was in 1982 and funded by ADB (called the Upper Watershed Management Project) and was in operation for eight years (*Sekhar et al., 2003*). It failed because local

[14] Projects worth Rs. 9,940 million were initiated with external assistance in the period between 1981 and 1986 in fourteen states (*Vira, 1995*).

[15] It should be noted that the announcement of JFM did not necessarily mean that social forestry had ceased to exist. Many States carried on with several components of social forestry, such as farm forestry and plantations (*Bannerjee, 1996*).

farmers were not really involved in planning or managing the project.[16] On one hand, the initiative demonstrated a shift in the thinking and approach of the planners in involving rural communities in forest and ecosystem conservation. The project, however, could ensure limited participation; villagers were involved only as paid labour and there was minimal participation from women (*Sekhar et al., 2003*). The failure also stemmed from the fact that the programme was based on the false assumption that the country was facing a severe shortage of fuelwood which was not the case (*Carter et al., 1994*). Also, the farmers were not interested in merely being contracted to plant seedlings of exotic trees, typically pines and eucalypts. Sri Lanka's social forestry was also criticised for being little more than a means for the FD to obtain cheap labour, rather than facilitating true community participation in plantation establishment and management.

This is not to suggest, however, that Sri Lanka has not benefited from community forestry. Estimates suggest that biomass accounts for about 55% of total energy consumption in Sri Lanka, half of which comes from woodfuel. The National Forestry Policy (NFP) of 1995 emphasised the importance of social forestry with the following three key policy statements:

- Tree growing on homesteads and other agroforestry will be promoted as a main strategy to supply wood and other forest products for meeting household and market needs.

- The establishment, management and harvesting of industrial forest plantations by local people, communities, industries and others in the private sector will be promoted.

- The state will promote tree growing by local people, rural communities, NGOs and other non-state sector bodies, for the protection of environmentally sensitive areas.

3.2.2 The Philippines

In the Philippines, the official support for community forestry has increased steadily since the late 1970s. Community forestry became particularly popular after the demise of the Marcos regime in 1986 (*Lynch and Talbott, 1995*). Virtually no one opposes it and the laws, policies and programmes in the country are highly supportive, although the profusion of laws could be read as contradictory. However, the progressive laws and policy frameworks are yet to be translated into effective programmes (at fault, arguably, is the political will and a near oligarchic control of land tenure). In the Philippines, community forestry was put in place through programmes such as the Community Forestry Management Agreements and Forest Land Management Agreements of 1987 that are signed between the state and individuals (these initiatives were funded by the ADB and the government of Japan). However, community forestry has taken another hue in the sense that the agreements are typically awarded to a contractor who then hires individuals to plant trees in a designated area. Many contractors are outsiders and often local interests are ignored (*ibid. 1995*). In 1991, the Philippines government (with involvement of the World Bank) tried to answer to this criticism by passing a policy to safeguard ancestral domains and to recognise the importance of community-based management of natural resources (as the National Integrated Protected Areas Act). On the other hand, the government allows traditional timber licence agreements to be converted to Industrial Forest Management Agreements (with the condition that the contractors will have to replant the residual forests). This agreement has faced popular opposition from forest communities and NGOs. Nonetheless, the Industrial Forest Management Agreement remains the preferred means within the Department of Environment and Natural Resources and the commercial forestry sector for managing Philippine forest resources.

3.2.3 Indonesia

Since the onset of Indonesia's commercial logging boom, millions of forest-dwelling and forest-dependent people on the Outer Islands have lost their traditional rights (or *adat*), to access ownership and control

[16] The programme had tried to establish farmers' woodlots, block fuelwood plantations, demonstration woodlots and community woodlots.

forests. The forest communities have found themselves unable to assert their *adat* rights in the face of government-sponsored concessions or programs (see *chapter 1*). Although some timber firms negotiate informal settlements with *adat* forest landowners, many establish their claim by fiat (*Lynch and Talbott, 1995*). Apart from a few cases of grants of concessions to forest-dependent communities (for example, through occasional timber and NTFP allowances) by a Ministry of Forests decree, community-friendly forest practices are nearly absent. There were calls for re-examining laws and policies in order to ensure more community participation, which may also help to revive the health of the nation's forests (*ibid. 1995*).

The reform movement that started in 1998 (following the economic crisis of 1997) has provided a strong impetus for decentralisation in the country in a relatively short period of time. The new policies now call for strengthening the decentralisation process in forestry (apart from other reforms such as controlling illegal logging and forest fires, rehabilitation and conservation). The more recent forest regulations have promised to hand over several forestry decisions, including issuing forest utilisation licenses, to local institutions. The government has also recognised the rights to livelihood by communities who have lived in forests for generations; however, they are not prepared to cede the land tenure rights to them. The results from the process have, however, not always been encouraging. The deforestation rate, for example, has only increased in the past decade (currently at nearly 2 million ha/year) and local institutions have been blamed for inefficiency and corruption. Nonetheless, the decentralisation process and involvement of communities in forest management has found firm grounds in the national forest policies.

3.3 Discussion: Making social forestry work

The new forest policies of Asia have tried to accommodate community concerns. Indeed, the theoretical attractions of community forestry schemes are considerable. They offer one of the few practical approaches to tackling the problem of degradation of communal and public land from excessive wood cutting and over-grazing. They also provide opportunities for landless people to take part in forestry activities and obtain benefits that would otherwise be reserved for landowners. However, the participation from local communities is often passive, with the responsibility for initiating the scheme and planting the trees being taken by the state forestry services. For a better performance, the tenurial rights need to be resolved. Also, the division of costs and benefits from community participation should be made clear. To ensure these three – participation, access to products and allotments of benefits – local institutions and leadership should be strong, communicative and equitable.

Social forestry proved more difficult to be instituted than originally thought and performed differently in countries and communities. In countries like Sri Lanka, social forestry initiatives were doomed to failure because the demand for participatory forest schemes did not arise within the communities but were rather response to world trends in forestry development and donor interests. In India, partly successful in places and projects, the experience with social forestry helped evolve policy frameworks and management rhetoric that were at once more complex and liberal.

A clear lesson that emerged was that if participation is associated with power and the rural poor are passively acquiescing to the project, then there will be no success (*Hobley, 1987*). The success of social foresty programmes, irrespective of the models, depends largely on effective people's participation at various stages of the implmenation (*Sen and Das, 1987*), and land tenurial and usufruct security (Foley and Barnard, 1984). For the state, it is important to understand that projects focussed only on achieving physical targets are liable to do badly; instead, a process-oriented approach (*Sekhar et al., 2003*) that keeps participation and institutional objectives at the core of the project and remains flexible to adjustments depending on outcomes, would perform better. Indeed, these lessons will help evovle the manners on how community participation will be achieved in Asia.

4.0 FARM FORESTRY

4.1 Introduction

This chapter examines case study reports from India, Pakistan and Nepal to analyse the reasons for successes, failures and constraints of farm forestry.[17] The chapter also discusses farm forestry schemes that are supported by industries. It discusses market situations for farm forests, institutional finance (for example, NABARD) available to the farmers, human-ecological backgrounds to these initiative and typical socio-economic characteristics of tree planters.

4.2 Farm forestry: A successful offshoot of social forestry?

The farm forestry programme in India, along with other components of social forestry programmes (see *Chapter 3*), started in the late 1970s following the recommendations of the National Commission on Agriculture (NCA). Social Forestry was formulated more in recognition of an inference that the growing need for fuel by the rural population should be met with trees planted on private lands. It said:

"Free supplies of forest produce to the rural population and their rights and privileges have brought destruction to the forest and so it is necessary to reverse the process. The rural people have not contributed much towards the maintenance or regeneration of the forests. Having over-exploited the resources they cannot in all fairness expect that somebody else will take the trouble of providing them with forest produce free of charge… (such) needs should be met by farm forestry, extension forestry and by rehabilitating scrub and degraded forests" (GOI 1976, 25).

In this sense, afforestation on private farm lands was to redress the situation of fuelwood scarcity. On the other hand, the National Forest Policy (NFP) of 1988 had stated that forest-based industry should meet its raw material needs by establishing a direct relationship with the farmers (*GOI, 1988*).[18] Thus, farm forestry was born with a sense of duality literally written on its agenda.

4.3 The rise and fall of farm forestry

The beginning of farm forestry in India was made in the late 1960s in the States of Tamil Nadu and Gujarat, where farmers were growing *Casuarina* on a large scale to be sold as firewood in urban centres. However, the formal onset of social forestry programmes gave a boost to these private plantations. For example, the annual distribution of eucalyptus seedlings in Gujarat rose from 6.1 million seedlings in 1971 to 41.7 million in 1978 (*Saxena and Ballabh, 1995*) and an estimated 200 million in 1983 (*Foley, 1984*; in *Falconer, 1987*). Many other provinces experienced a similar pattern, even in places where other social forestry programmes had failed farmers had eagerly lapped up on the free or subsidised distribution of saplings and had assigned significant chunks of their lands for farm forestry. Indeed, farm forestry had reasons to be successful. Cultivating trees on homestead and farm lands achieves a number of purposes for the farm family. It provides inputs into the households and farm systems, such as animal fodder, mulch, fuelwood, fruit and timber. Moreover, the practice of planting trees is no stranger to the South Asian farmers. In high rainfall areas, perennial crops such as coconut, arecanut, rubber and pepper are intercropped with seasonal and annual crops like tapioca, bananas, pulses and vegetables. Indeed, a typical homestead garden is a mixture of trees, shrubs and herbs. In arid lands (such as Rajasthan or Sind), the trees planted by farmers are used for fodder, mulch and even food (examples are *bordi*, *Zizyphus* spp. and *Prosopis cineraria*). In Himalayan areas, trees such as *bhimal* (*Grewia optiva*) and *Morus cerrata* are

[17] The basic difference between farm forestry and social (or community) forestry lies in the element of individual cash profit motive. Social forestry may not promise any direct individual profit other than (often, uncertain) acess to fuel, fodder and timber.

[18] This guideline in a sense was contradictory to one of the recommendations of the NCA that favoured commercial plantations on state-owned forest lands and tree planting for meeting the subsistence needs on private farm lands of rural people.

planted for many purposes.[19] The farm forestry was clearly experiencing a boom: by early 1980s, farmers in north-west India had begun to plant eucalyptus on a large scale for sale as pole and pulpwood (*Saxena and Ballabh, 1995*). A marked difference was in the fact that farmers showed a clear preference for commercial wood species and products like poles, construction timber and pulpwood, instead of trees that would only fulfil subsistence needs of a household. However, the entrepreneurship that was triggered during the initial phases of farm forestry did not get a chance to crystallise into a sustainable forestry model where farming households produced commercial forest species on their farm lands.

Box 1. Farm forestry in Nepal and Pakistan

In Nepal, the reasons for involvement of farmers in farm forestry were similar to those in India. The need for fuelwood, timber and fodder were apparent and formed an important reason for plantation activities of the farmers. However, nearly 90% of the farmers in the Hills of Nepal were also found to participate in farm forestry for cash in the future (*Thapa et al., 1991*). Here too, access to markets and existence of road networks influenced the tree planting activities. In the hill farming system, crops, livestock and trees are strongly interdependent. Interventions in favour of tree production will only be successful if they can be integrated in the larger farming systems of the communities in question. The case studies in Nepal also showed that adequate extension follow-up is required until farmers have achieved confidence in tree rearing, and if private planting schemes are to be successful, local groups with common interest must be identified and contacted.

Michael Dove (in *Saxena and Ballabh, 1995*) reported results for on-farm forestry in Pakistan. He confirms that critical parameters for development of farm forestry are not established by climate or soil type, but by types of agricultural, tenurial and socio-economic systems. He found areas with a high percentage of uncultivated lands with labour shortage for agricultural activities ideal for farm forestry. He recommends building on a tradition of informal exchanges and that, for sustained results, address issues of competition of trees with agricultural crops, lack of interest and experience on farmers' part and nature of assistance on the government's part.

4.4 The flak faced by farm forestry

Around 1988, there was a downturn in the rate of tree planting, mainly because the market for poles got saturated, the paper mills did not pay remunerative prices and fuelwood prices were low and uneconomical. To add to this, factors like legal restrictions on the transport and sale of wood, lack of institutional finance and gap in the form of gate price and consumer price worked together to depress the farm forestry programme. As a forestry model, farm forestry faced criticism on the following grounds: it was alleged that mostly larger farmers primarily took up farm forestry, adopting commercially viable species such as eucalyptus and Sal (*Shorea*). The participants invariably had an incentive to generate income. The projects were alleged to have encouraged little initial participation from small farmers, and villagers were reluctant to make long-term investments. On the other hand, indigenous trees were sparsely used and had been inadequately researched. Also, traditional agriculture systems would have contained agroforestry practices, whereas the typical plantations in farm forestry had a focus on growing short-duration trees that cater to fuelwood demands in order to reduce impact on forest lands. Hence, the trees competed with, instead of complimenting, the agricultural and food production systems. It was said that farm plantations often failed to live up to their promise on cash returns and the crop from farm forestry promoted monoculture. *Shiva and Bandyopadhyaya (1985)* argued that:

Eucalyptus plantations in drylands drain the soil of its fertility and moisture... [they] are thus ecologically incompatible with farm forestry, since they act as sinks and not sources of nutrients

[19] In terms of production of wood and trees, the programme was successful in many Indian States. For example, the government claimed that in the period between 1980 and 1989, more than 9,000 million trees were planted on private lands

and moisture. They are ecological de-establisers [and] disrupt the nutrient cycle and hydrological balance… [it] is nothing short of an unscientific prescription for dersertification.

Another study found that eucalyptus is a pioneer species and the potential eucalyptus provides for intercropping is poor despite the relatively high amount of light that they let through their canopy (*Kirk et al., 1990*).

4.5 In defense of farm forestry

Several researchers and practitioners have strongly defended the case of farm forestry and the manner it was practiced by the farmers. For example, *Saxena and Ballabh (1995)* reason that the criticism that only the large farmers benefited was based on reports that poured in during the initial phases of farm forestry when the large farmers monopolised tree production (as they did in the early phase of the green revolution). Small farmers followed later but with the fall in market prices did not get sufficient returns and were the first to withdraw having less risk-bearing capacity. Hence, it is also erroneous to claim that success of farm forestry is related to farm-size.

The fact that farm forestry did not actually provide fuelwood and fodder as envisaged by the policy makers is more a fault in design than in the concept. Quite understandably, farmers preferred income-generating trees and continued to collect fuelwood and fodder from forests and common lands (however degraded). *Sen and Das (1987)* argue that it was unfair to expect farmers to fulfil social objectives. They point to other examples of success of farm forestry where landless farmers in West Bengal were allotted marginal land on lease and participated in a very enthusiastic way. Also, the 'tree-*patta'* scheme in Andhra Pradesh was a success, wherein poor beneficiaries were given ownership right of trees on lease for 20 years. The beneficiaries were fully entitled to the usufruct on maturity and during the intermediate period.

The criticism that farm forestry promoted monoculture was also contested. *Tiwari and Mathur (1983)*, in fact, found that there was no scientific basis to assume that eucalyptus lowers the underground water table. Similarly, *Lawbuary (undated)* argued that, contrary to Shiva's charges, eucalyptus is efficient in its water use, though transpiration rates are high, which may modify local-level hydrology. The claim that plantations may lead to desertification is not substantiated, though ultimately such a process is more concerned with human agency, rather than an intrinsic feature of the genus. *Chaturvedi (1989)* too argued that poor results from eucalyptus are because of poor forestry practices, close spacing and early harvesting. Instead, 12-14 years rotations, low thinning frequency and planting with wider spacing are recommended. Also the criticism that farm forestry meant a reduction in the area for food crops was countered with the reasoning that there was little evidence that there was a large-scale diversion of good agricultural land *(Saxena and Ballabh, 1995)*.

4.6 Problems with farm forestry programmes

The failure of farm forestry, then, can be squarely laid on the fact that it could not sustain the main incentive for which farmers had gotten involved with it in the first place, i.e. sustained cash returns. Farmers who had invested in trees had done so with profit in mind. Indeed, regions which were the most developed in commercial agricultural production also did well in farm forestry results (as in Punjab, Haryana and Gujarat). It is noteworthy that many of these well-performing states in farm forestry were also the main beneficiaries of the Green Revolution in India (1965-1980) that had helped increase farm productivity and marketing of farm produce. Farmers in these states also had assured supplies of water, could afford large inputs of fertilisers, and had access to adequate farm credit. The presence of these factors helped farm forestry initiatives. However, only few made a relative profit. A key reason for this was saturation of markets with farm forestry products and a consequent failure to get both enough prices and yields from farm plantations. As a result, very few farmers opted for a second rotation of trees.

There were also reports on poor crops in second and third generations of plantations on farmlands. In most farm forestry plantations, farmers opted for dense plantations (of over 3,000 seedlings/ha). This was also

promoted by the Forest Department who had thought the main aim was to produce fuelwood and this required close spacing. This resulted in a poor crop output. Also, the seedling quality and genetic composition of eucalyptus were of poor quality (*Arnold et al., 1987*). In some cases, farmers perceived a loss in crop production as a result of eucalyptus plantations, and thus a further reduced profit margin.

4.7 Poor infrastructure for farm forestry

Farmers faced logistical problems in harvesting and marketing the timber, and there was an insufficient support from the forest departments. Farmers were new to selling wood in the market. In addition, the forest departments made little efforts to change how trees are harvested, carried and sold in markets. For example, the legal restrictions on transport of wood meant difficulties in felling and transport of wood. Farmers had the impression that trees could not be felled without FD's clearance. The legal arrangement surrounding tree felling and transport is either obfuscating and unclear, or is severely restrictive to private business practices. The tree felling and transit rules vary from State to State. In Tamil Nadu, for example, there are restrictions on the felling of some trees. Some species of trees are marked as 'royal trees', like teak, blackwood, ebony and sandalwood, which cannot be felled without the permission of the Chief Conservator of Forests, irrespective of whether the tree is on government or on private land. In Karnataka, the restriction covers species such as sandalwood, *katechu*, etc. Similarly, in Bihar the blanket restriction on tree felling and transportation acted as an important impediment to landowners who wanted to take up farm forestry. As a result, middle-men who were better versed with bureaucracy, markets and laws would buy trees for 10-15% of the actual price (*Chambers, Saxena and Shah, 1989*). The processing and storage costs further prevented the farmers from getting a good value for products.

4.8 Future for farm forestry

The government support for farm forestry is all but dead in India. However, the private entrepreneurship can still be found in small pockets, indeed many farmers have continued with nurturing trees they started out with during the social forestry programme. Of the new plantations, the key change in choice of species that the farmers are making is that the eucalyptus craze of 1980-1990 has now given way to species that are better suited to local markets and industrial demand.

To rejuvenate farm forestry in India, the government will need to ensure that farmers get a choice in the supply of seedlings, support during maintenance, logging, transport and marketing. It is essential that State governments move towards removing several of the tree felling and transportation restrictions particularly in respect of the species commonly found on private farms, and simplify the administrative procedures. Last but not least, there was a near absence of research on understanding what villagers want, how inter- and intra-village communication is carried out and on the traditional silvicultural practices alongside agriculture. Also the extension services that were provided to the farmers were poor in quality and not sustained over time.

4.9 Discussion

Started as a component of 'Social Forestry', farm forestry had all the potential to come on its own. On one hand, as a government-sponsored intervention, farm forestry received a strong legal and fiscal support, and on the other hand, it recognised farmers' age-long and natural association with trees. As discussed above, many criticisms that were levelled against the programme did not have sufficient grounds to stand. The role of the government cannot be limited to distribution of seedlings alone - support with information, management assistance and extension activities are also crucial.

What stands out for both social and farm forestry is that the most important environmental variables are not physical but human. This distinguishes these projects from traditional forestry practices on state lands. In the latter case, it is the natural environment that primarily sets the parameters for use and management (where proximate human population are often extra-legal consumers of forest usufruct); however in social

and farm forestry the rural population is elevated to the status of owner and decision-maker, and it is with their active and engaged participation that these projects can bring sustained and useful results.

5.0 INDUSTRY-FARMER PARTNERSHIPS IN WOOD PRODUCTION

5.1 Introduction

While the government's support to farm forestry slackened, extension programmes dried up and policy regulations continue to pose difficulties to farmers in marketing their produce, several industries that needed wood offered farmers seedlings, institutional support, and, most of all, an assured cash income on harvest of timber. In India, the cases of ITC-Bhadrachalam and WIMCO provide models where farmers have benefited by collaboration with wood-based industries. Such collaboration usually ensures the right planting material, institutional finance and, on harvest, marketing support.

5.2 The case of ITC-Bhadrachalam Paperboards Ltd.

The most well-known success story of industry-farmer collaboration is that of the India Tobacco Company (ITC)'s Paperboards and Specialty Papers Division (ITC-PSPD) (earlier called the ITC-Bhadrachalam Paperboards limited) based in Andhra Pradesh State in India.[20] The ITC-PSPD was established in 1975 as a subsidiary of ITC Limited with its regional office at Secunderabad, and the mill located in Sarapaka Village in Andhra Pradesh State. The strategy that ITC followed was to use high yielding clonal saplings with active local participation in order to promote farm forestry development that was intended mainly for pulpwood production.

The ITC initiative with the farmers has become instrumental in the development of backward tribal areas around Bhadrachalam villages. For example, in 2001-2002, ITC-PSPD employed over 2,000 people (680 professionals, 824 skilled technicians and 527 unskilled workers), excluding about 500 people employed on daily wage basis. The success of ITC's venture was influenced by the fact that of the 6.38 million ha of recorded forest in Andhra Pradesh (23% of the geographic area of the State), nearly 80% was under the reserved forest category where no felling operation could be carried out. Additionally, the pulping infrastructure in the state was small; prior to 1975, there were only two paper mills - the Sirpur Paper Mills (SPM) established in 1938, and the Andhra Pradesh Paper Mills (APPM) established in 1954 – both with bamboo as the main raw material and supplies came mainly from the government. The mills did not have adequate paper technology and had begun to use mixed hardwoods with bamboo. Furthermore, a crisis of sorts hit the pulping industry when, in 1988, the National Forest Policy ended any provision of clear felling. Consequently, wood-based industries had no longer an assured line of supply from the government to a demand that was only growing. This situation prompted private initiatives, e.g. sponsorship of tree plantations on private farmlands. This industry-farmers bond was made stronger through certain changes in legislation that controlled felling, removal and transport of wood from private lands.[21]

In the early 1980s (still under social forestry programmes and through private ITC channels), more than 5 million seedlings of eucalyptus and *Leucaena leucocephala* (Subabul) were distributed to farmers free of cost to cover an area of about 2,800 ha.. However, the quality and yield of the plantations (after 7 years)

[20] ITC is one of the largest private sector companies in India, with interests that range from consumer goods (leaf tobacco, cigarettes, and branded packaged foods) to hotels & tourism, to information technology, to agro-business. In 2002-2003, ITC had a turnover of US$ 2 billion (*Rao, 2004*). ITC's headquarters is in Kolkata, West Bengal.

[21] For example, certain plantation trees such as *eucalyptus*, subabul (*Leucaena leucocephala*) and casuarinas (also, mango, *sissoo*, *babul* and *jamun*) were categorised as agricultural produce (as per GoAP order GO-MS 188 dated 10-6-1999), and were allowed to be grown, felled and transported for free marketing purposes.

was found to be poor, and the overall performance was disappointing. To address this situation, in 1987, the ITC with support from commercial banks such as NABARD, launched a 'comprehensive package programme' where high quality planting stock were now to be supplied (free of cost) along with technical extension services, and on harvest, a guaranteed buy back at minimum support price or prevalent market price whichever was higher (*Rao, 2004*). ITC would also provide financial assistance in raising and maintenance of plantations. The plan was to take up 1,500 ha/yr of mostly marginal lands and put them into productive farm forestry plantations. Between 1987 and 1995, ITC Bhadrachalam promoted farm forestry plantations in 1,138 villages. The company assisted more than six thousand farmers in raising more than 17 million trees in over 7,000 hectares, thus helping them diversify their agriculture and ensuring optimum returns from marginal lands.

The results were encouraging but not sufficiently good; the productivity was still not up to the optimum level. In 1989, ITC set up a research unit to explore ways to increase pulpwood production with two specific objectives, viz. development of fast growing disease resistant eucalyptus*,* and improvement of the package of practices for establishment and maintenance of plantations (*Rao, 2004*). As a result, major gains in productivity of eucalyptus plantations were achieved in the next decade, through application of clonal technology for gainful exploitation of existing useful variation.[22] In order to develop eucalyptus for the future, inter-specific hybridisation was attempted to combine desirable attributes of promising clones and eliminate defects. The aim was to achieve a combination of high yields, shorter rotation (3-5 years), high adaptability to sites, disease resistance, superior wood quality and uniformity of raw material.

5.3 The second phase: Learning lessons from experience

It is significant that, during 2001-2002, the Company's earnings from agro-exports registered a growth of 28% in dollar terms. Since the availability of wood and bamboo from government forests has steadily fallen to negligible levels, and since no land was available at the disposal of the company to raise pulpwood plantations, the avenue open to the company was to outsource pulpwood production under suitable arrangements, by providing adequate incentives.

The Company distributed more than 14 million clonal saplings to growers from 1992 to 2002. More than 8,000 ha of clonal plantations have been established in eight years under the farm forestry programme of the Company alone. Along with 2,000 ha in second rotation coppice plantations, it totals 10,000 ha. In addition, 8,000 ha of plantations have been raised by the AP Forest Development Corporation. Over 7,000 ha of the 'Bhadrachalam' clones have been planted all over India by Forest Departments, Corporations and other paper mills and farmers. Therefore, the total figure of *Eucalyptus* clonal plantations in India today is around 25,000 ha. By company-promoted farm forestry plantations alone, an asset worth Rs.1,000 million has been created by now. Through clonal farm forestry activities, nearly 40,000 jobs are also created, in production of planting material, planting and maintenance, logging and transport. This development of short rotation, high yielding woody species for commercial purposes has yielded three main advantages to the pulp and paper industry, viz. reasonable cost of raw material, reliability and sustainability of pulpwood supply, along with uniformity of the biological raw material. From a socio-economic point of view, it has resulted in improved and sustained income for the farmers and environmental amelioration, thus helping to shape the well being of the farming community.

5.4 ITC-Bhadrachalam Paperboards Ltd. today

Down to Earth, an environment activist magazine published in India, in a recent issue compared all the paper industries in India and gave the highest ratings to the ITC-Bhadrachalam Paperboards Company (*CSE, 2004*). The magazine argued that the reasons why ITC has been able to be the forerunner in the pulp

[22] These clones, developed in India for the first time, are known as 'Bhadrachalam' clones. Productivity of these clones released for commercial plantations ranges from 20 to 58 m3/ha/year under un-irrigated conditions and more under irrigated conditions, compared to 6 to 10 m3/ha/year of *Eucalyptus* plantations raised from available seed sources. Felling cycle of clonal plantations could be reduced by half, from 7 years to 3 or 4 years.

and paper sector are: development of state-of-the-art technology (particularly in eliminating toxic chlorine from the bleaching process), proactively reaching farmers and exhorting them to grow wood, and investment in research and development. These strategies have paid off ─ the yields from eucalyptus plantations on fields has increased from 6 tonnes per ha to 200 tonnes per ha on farmland in a five year growing cycle.

5.5 The case of Western India Match Company (WIMCO)

On realising the shortage for raw material, WIMCO, active in the manufacturing of matches and select sports goods, linked up with farmers in north and northwest India to raise plantations on farmlands. The company recommended poplar wood (*Populus deltoids)* for the plantations, partly because it is suitable for match-making and partly because the tree will prove attractive to farmers as it allowed intercropping with agricultural crops. As frequent pruning is necessary, considerable amounts of firewood also becomes available.

After successful identification of the species and deciding that it could be grown profitably in conjunction with wheat, which is the most important crop in north-west India, WIMCO prepared a project and proposed it to the National Bank for Agriculture and Rural Development (NABARD) for co-financing. The project was approved and has been under implementation since 1984 in several districts of UP, Punjab and Haryana. The key features of the NABARD-WIMCO project are the following (adapted from Pathak in *Saxena and Ballabh, 1995*):

- WIMCO will raise good quality poplar in nurseries and supply quality planting material to the farmers at a reasonable cost;
- The company will also provide extension, training and technical guidance to farmers in poplar cultivation. The services will also include tree replacement (on loss of plants) and provision of fertilisers and pesticides;
- WIMCO will assure a market for poplar trees when they are ready for harvest (in about 8 years)[23];
- NABARD, on its part, will provide loans through local banks to farmers on usual terms (12.5% interest, in 1995, with security of mortgage of land along with the proposed plantation). The loan amount is disbursable over a six-year period to meet the costs of transplants, labour, irrigation, fertilisers, insecticides and extension costs. Also, NABARD will defer the payment of loaned amount and interest until the end of the 8th year, i.e. payment will be due only at the time of harvest (as inter-cropping is possible, it was left up to the farmers to pay interest or retain the income for his use).

However, the farmer-industry collaboration has not always been easy. For example, NABARD has let it be known that due to a resource crunch it is unable to allocate substantial funds for wastelands and forestry activities. The lending banks do not yet have adequate infrastructure to assist in the formulation and appraisal of farm forestry projects; indeed, there is also a dearth of data on different kinds of farm forestry models which makes it difficult to evaluate the bankability of various kinds of farm forestry projects (Pathak in *Saxena and Ballabh, 1995*). Also, both producers and banks have no insurance system in place to guard them against natural calamities and fluctuation in forest products markets, making the finance system less robust than desired. Again, insecurity of supply became a major issue for the company as growers sold to other buyers, defaulting on loans. Consequently, the company altered their strategy, focussing instead on the production of saplings for sale to growers. Today, WIMCO concentrates on selling seedlings to farmers - about 1.5 million seedlings a year - without a guaranteed buy-back arrangement. The company's field staff continues to provide advice to farmers which also helps keep the company competitive with other nurseries selling poplar stock. Thus, although the original scheme of guaranteed buy

[23] The buy back price is typically put at Rs.1,250 per cubic metre (resulting in a handsome return of an average of Rs. 500 per tree). After all costs are deducted, the net average profit per poplar tree is about Rs 200. This profit is based on WIMCO's promised buy-back support prices; however, farmers are free to sell the produce elsewhere.

back no longer exists, WIMCO continues to contribute to growth in farm forestry and rural employment (*Mayers, 2000*).

5.6 Discussion

The basic difference between the two models - farm forestry and social forestry - lies in the element of individual or household's profit motive. While farm forestry slowed down due to lack of support from the government and inadequate market returns, more sustained results have come from industrial support of farm forestry, if limited to select locations.

The industries formed partnerships with willing farmers in order to meet their wood needs. They used the government initiatives to subsidise their planting activities and provide legitimacy to their initiatives and seek linkages with lending and marketing institutions. The reasons for successful industry-farmer collaboration are clear: farmers' priorities of cash was met, the industry chose the correct species for plantation, the planting material was of good quality and the entire effort was tied up with institutional finance. Farmers must get good remunerative prices for the produce (preferably assured in advance), research and marketing support from external (government, industries) agencies and liberal market systems for a sustained engagement in farm plantation activities.

6.0 INDUSTRIAL FORESTRY

This chapter discusses industrial forestry in three SE Asian countires, viz. Malaysia, the Philippines and Indonesia. It assesses the policy and institutional environments, and also the economic and social factors that are typical to the industrial sector the Asian countries. In SE Asia, production forestry was initially focused on log exports. However, these countries have since moved up the value chain, producing sawnwood, plywood and other finished wood products. On the other hand, indigenous populations have found it difficult in claiming a share in high value timber forests, and there have been problems of illegal logging and consequent seeking of national and international cooperation to combat this (through certification, for example).

6.1 Case study of Malaysia

Malaysia is the second largest tropical timber exporting nation in the world after Indonesia. From 1985 to 1993, the export earnings from the Malaysian timber sector increased from US$ 1.86 billion to around US$ 4.92 billion. In product terms, while the export of value added products such as furniture and plywood has increased significantly, there is a visible drop in the export of logs and sawn timber (*Asian Timber, October 1996*). Sabah, on the island of Borneo, dominates the Malaysian forestry sector, both as producers of tropical logs and as home to the main timber companies. In October 1996, Malaysia had about 1,000 sawmills, 125 plywood mills, 100 moulding plants, 3,000 furniture mills and 5 medium density fibre-board plants distributed in Peninsular Malaysia, Sabah and Sarawak.

The forestry sector in Malaysia contributes more than 5% of the nation's GDP (as against a negligible amount prior to Independence). This growth in the forestry sector is a result of export of new wood products (sawn wood, plywood, veneer, and particle board) to industrialised economies, as against the earlier colonial concentration on products like logs and rubber, palm oil, and tin. The wood industry growth has been so vigorous that the forest departments are self-sufficient and expanding.

6.1.1 Forest sector boom and forestry modernisation in Malaysia

Between 1966 and 1977, the net foreign exchange earning in Malaysia rose by about 14.5% per annum. Most of this was due to the expansion of manufacturing capacity that promoted exports and substituted imports (*Kumar, 1986*). This development had an important economic implication in terms of financing

forestry projects: the forest revenue that was generated using modern manufacturing techniques now exceeded the forestry expenditure. Also, Malaysia earmarked only 0.03% of its development expenditure for forestry during 1981-85; the funds required to manage the forestry sector were generated from *within* the sector itself and for once, the excess money could be used, at least in theory, to subsidise other development sectors in the country (*Kumar, 1986*).

It has been argued that the boom in demand on industrial wood in the 1960s and 1970Ss, coupled with dwindling supplies of hardwood from traditional sources such as West Africa and the Philippines, opened the way for Malaysia to take a lead in the mobilisation of export promotion (*Kumar, 1986*). Hence, it was the external economic stimuli that produced the momentum for cutting down forests, and not necessarily a deliberate forest policy fostered with the Malay States themselves. Similarly, domestic processing of wood was not the result of a conscious policy but grew out of economic responses. However, the state forest departments did set up a licensing system and grading rules which were not really meant for promoting exports but to 'compete in the home hardwood market'. By the time the country had become independent it had a tradition of distinguishing between protective and productive forests, a plan to promote intensive cultivation and an aim to meet local demands.

Generally speaking, the industrial forestry owes its growth to demand from the Western market and an abundant supply of logs (most of the mills are under individual ownership or partnership, usually family-owned and –managed). The plywood and veneer production has had a healthy and rapid rate of growth, with a high average of 34% during the 1960-1976 period (*Kumar, 1986*). When the performance declined, it was mainly due to recessionary conditions in Western markets. Similarly, responding to market demands, Malaysian wood industry expanded into other wood-based activities such as furniture and fixtures-making, mouldings and making prefabricated housing units and components.

6.1.2 Shortage of logs and preventive measures

Despite the increase in export earnings, the Malaysian timber sector faces major challenges. Under the Seventh Malaysia Plan (1996-2000), log production was projected to be reduced to around 28.3 mill m3 or 45,000 ha/year. This represents a decrease of 17% compared to the average of 34 mill m3 or 52,250 ha/year produced under the Sixth Malaysia Plan. The decreased availability of logs has inevitably resulted in an increased cost of raw materials. For example, average log prices of dark red *meranti*, the most popular species in Peninsular Malaysia, showed an increase of 75% in the period 1990 to 1994. In order to ensure the supply of raw material to its own companies, Malaysia has implemented a ban on the export of logs from Peninsula Malaysia and Sabah, and has progressively been reducing log export from Sarawak.

The small range of genera and species used in industrial plantations, as well as the nearly identical forestry development plans by which they are managed, has promoted large scale monoculture plantations and radically simplified forests. Although such plantation do not always answer to local needs or provide genetic diversity, they do generate significant foreign revenue. In addition, the Malaysia government has also decided to use a bar code tagging system in timber concessions throughout the country in continued efforts to curb illegal logging. The bar codes, similar to those used for consumer goods, would be in the form of plastic tags. While companies have supplemented their scarce resources by investing in forest plantations (such as rubber and oil palm) others have decided to look for cheaper and less controllable sources of supplies of raw material from the natural forest.

6.1.3 Tropical forest haven: the case of Sarawak's forests

Sarawak is the world's largest exporter of tropical logs, mostly to the Japanese, Korean and Taiwanese markets. It accounts for 43% of Malaysian log output. Of the 16.6 mill m3 harvested in 1993 in Sarawak, 6 mill m3 were earmarked for local processing. The level of exports has been declining slightly over recent years, with the South Pacific, especially Papua New Guinea, increasing its market share. Consistently, the log production in Sarawak is much higher than the sustainable levels recommended by ITTO. Although a decreasing amount is being exported, overall production levels are still more than double the ITTO recommended sustainable logging rate. Thus, the industry inevitably faces domestic log shortages. In 1990, an ITTO Mission which studied Sarawak's forests identified three significant impediments to SFM in

the state: 1) over-cutting in the hill dipterocarp forests; 2) inadequate catchment management; and 3) insufficient control of felling operations.

Logging practices continue to be a huge cause for environmental concern in Sarawak, resulting in increased silt loads in streams and unseasonal flooding. Also, social effects are seen: the indigenous communities in Malaysia have continued to protest against logging in their traditional lands, and there is no sign of increased local consultation and participation, which was recommended by the 1990 ITTO team as a main condition for achieving sustainable forest management.

6.1.4 Bettering industrial forestry: the case of Sabah

Sabah is one of the two East Malaysian states situated on the island of Borneo. With a land area of almost 7.4 mill ha, Sabah occupies about one tenth of the island. It is the second largest state in Malaysia with a population of more than 2.5 mill people. State revenues from forestry are largely earned through royalties collected from the sale of logs from natural forests. Log production increased drastically during the past 35 years – from 6 mill m3/year in 1970 to 13 mill m3 by 1978. During the 1980s, log production averaged 10 mill m3/year. In the 1990s, log production started to decline – falling to about 4 mill m3/year by the end of the decade. Since 2000, log production has fluctuated in the range of 2–4 mill m3/year.

The growth in log production during the period 1970–1990 has had negative effects. *Munang (1991)* estimated that Sabah was harvesting – on average – at four times the rate of sustainable yield (2.8 mill m3) during this peak harvest period. Sabah's heavy reliance on timber revenues for socio-economic development and a lack of regulatory capacity in the Sabah Forestry Department, prior to 1997, seriously harmed the state forests. In recognition of the seriousness of this situation and its impacts on environmental services and future raw material supplies for wood industries, the Sabah Forestry Department initiated the Deramakot Sustainable Forest Management Project to develop a management model that could be used to bring Sabah's 2.7 mill ha of logged forests under sustainable management.

6.1.5 The Deramakot SFM model

Deramakot Forest Reserve is the site of Sabah's first major initiative towards sustainable management of logged forests. The forest reserve is located in the district of Sandakan and comprises a single contiguous tract of 55 000 ha of forest. It is one of 27 demarcated Forest Management Units (FMUs) in Sabah.

Earning foreign exchange revenue is the most politically appealing and economically attractive reason for harvesting timber in Sabah's forests. The fundamental problem, however, lies in unsustainable and indiscriminate logging that causes disturbance to the forest environment, polluting rivers and destroying the. The philosophy behind Deramakot SFM was to develop a model that would enable multiple uses, but with a central focus on timber sustainability. The model would have to allow for local communities, living in close proximity to forests, to utilise the forest for subsistence needs (as is typical in Sabah), including as a source of clean water, medicinal plants, building materials, and tools, as well as supporting the gathering of non-wood forest products for cash incomes. One of the crucial factors in the Deramakot model is that harvesting must adhere strictly to the prescribed annual allowable cut (AAC). Currently, logging in Deramakot is based on guidelines for reduced impact logging that include: cutting of vines prior to harvest, leaving behind large trees (above 120 cm in diameter) as seed bearers, directional felling, and leaving fruit-bearing trees. To maximise timber recovery, a mobile sawmill has been introduced in Deramakot to utilise logs rejected at stump or at intermediate landing sites. By improving the efficiency of utilisation, fire hazards during drought periods are also minimised.

Where there are insufficient seedlings on the forest floor, enrichment planting is carried out with seedlings planted in the gaps created during logging or in artificially created gaps. Gap planting mimics the natural process of regeneration in forests by replicating the gap created when a tree falls. In Deramakot, each artificial gap is 10 m2. Forest protection is accorded high priority to prevent encroachment and poaching. In recent times, there have been a high number of wildlife sightings including rare species such as elephant, *orang utan* and proboscis monkeys, as well as wild pigs, sambar deer, wild ox and avi-fauna. A survey of *orang utan* in Deramakot estimated a population of around 1,000 apes. There are ecosystems with high

conservation value and scenic landscapes, including peat swamp forests, waterfalls, fishing sites, inundated limestone caves, and wildlife observation sites.[24]

In most recent years, the financial challenge at Deramakot has shown signs of easing. The project showed a 'profit' for the first time in 2002 – attributable to improvements in management, higher log prices and infrastructural improvements – and is expected also to have run at a profit in 2003.[25] This is a positive development that could help to convince other forest managers in Sabah that it is possible to adopt best management practices without sacrificing profits. Senior managers from the Forestry Department emphasize the importance of consultation with staff to solve operational problems, reduction of administrative red tape, and inculcating good management values – to control and monitor costs. The Forestry Department also recognises and supports infrastructural development, in particular road maintenance, as a crucial component in ensuring efficient movement of timber and people.

6.1.6 Multiple use forest policy

Although Deramakot's management was principally directed at proving that timber management can be done sustainably, other conservation and social issues have not been ignored. At the very start, when the project was formulated, one key feature was adoption of a multiple use policy. This policy was observed throughout the formulation and implementation of the model. One important and early aspect of the project was the implementation of a thorough survey of the forest's biodiversity, wildlife and the hunting/gathering practices of neighbouring villages. In addition, the logging company proactively attempted to ensure that jobs were allocated first to the people living in the adjacent villages.

6.2 Case study of the Philippines

This section discusses the case of forest industry supported out-grower schemes in the Philippines. The case of Paper Industries Corporation of the Philippines (PICOP) that has engaged farmer communities in agroforestry and tree farming schemes in eastern Mindanao in the Philippines is reviewed. The section discusses incentives for farmers to grow trees for private companies, the evolution of PICOP to include social components for participating farmers, and problems that are typically encountered in grower-company relationships.

PICOP has had a large pulp and paper and timber operation in eastern Mindanao, based on a number of forest concessions on public land, operated under a 25-year government Timber Licence Agreements (TLA). In 1968, PICOP began a programme to encourage nearby farmers to devote part of their land to growing *Albizia falcataria* on eight-year pulpwood rotations. The species was selected on the basis of extensive local trials by the company. It is a high yielding, easily grown, coppicing tree with good pulping qualities (*Arnold, 1997*). Not unlike industry-farmer agreements in India, the arrangement was that PICOP would provide planting stock and technical advice and assure a market for the output at a guaranteed minimum price. To serve this purpose, the company created a strong extension service and constructed the necessary road infrastructure.

With loans from the World Bank and the Development Bank of the Philippines (DBP), the participating farmers could cover 75% of their establishment and maintenance costs; however, only one-third of the

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[24] Despite tight security measures, Deramakot has not been spared from illegal logging. In 2000, illegal felling is estimated to have accounted for approximately 3,000 m3 of wood. To curb illegal activities, the Sabah Forestry Department works with local communities to gain their assistance in protecting the forest as well as educating them on fire prevention.

[25] Favourable international log prices, which have appreciated by 47% since 1995, contributed significantly to achieving profitability in 2002. In addition, planting costs declined in comparison with previous years, because of abundant natural regeneration at logged sites. Silvicultural costs in 2002 were largely restricted to tending activities – especially removal of competing bamboos, vines and weeds. Average tending cost per hectare is US$93 per ha compared to average planting cost of US$252 per ha. The auction prices depend on whether buyers are locals or from overseas – and the product-mix. Overseas buyers generally offer much higher prices than do local buyers.

farmers took out loans (*Arnold, 1997*). The number of participating farmers grew from 3,800 in 1980 to 4,530 in 1985. In 1992, there were 4,200 growers with 26,000 ha under tree crops, which supplied 226,000 m^3 of wood to PICOP that year (*Kato, 1996*; in *Arnold, 1997*). In this initial phase, PICOP diversified its supply base to different types of farmer groups and also stepped in with support services in areas of community health and schooling.[26]

6.2.1 Illegal logging and certification programmes

The overall annual loss of forest cover in Asia between 1990 and 2000 remained at 0.364 mill ha, or about 4% of the global loss, a large proportion of which is blamed on illegal forestry activities.[27] The Philippines has one of the highest rates of deforestation in the world. At the current rate of deforestation, about 1.4 percent annually of the country's virgin forests are in danger of disappearing by 2010. The clearing of forests has contributed to soil erosion, a serious problem in the Philippines due to heavy monsoon rains. The government imposed restrictions on logging in the late 1970s and banned logging in virgin forests in 1991, but illegal and often corrupt activities undermine these efforts. Reforestation programmes have met with limited success. The primary forests of the Philippines, for example, are fast dwindling (less than 3% cover remains) and the remaining secondary forests are disappearing at an alarming rate of 480 ha/day. Most of the remaining forests exist on the island of Palawan which has roughly 1.2 mill ha of rainforest, of which almost 40% is primary forest. Current deforestation can be largely attributed to illegal logging activities and fires from forest clearing. Though logging was banned by the government after widespread flooding in the late 80's and early 90's, forest services are understaffed and are unable to stop illegal logging. In late April 1998, the government announced plans to end a nine-year ban on log exports to earn much needed foreign exchange, at a time when the market was already flooded with tropical timber from the Asian economic crisis. The announcement, coming as the country battled forest fires, resulted in protests and the government was forced to submit the proposal to public hearings.

6.3 Case study of Indonesia

It is the provision of subsidised land, wood and technology that have helped make Indonesia become one of the cheapest pulp and paper producers in the world; this combined with low labour wages and government support have attracted large amounts of foreign investments in the country. Nonetheless, Indonesian industrial forestry has been criticised for having harmed (altered) local livelihoods and relationships.

Indonesia remains one of the top losers of forests with an annual loss of over 1.3 mill ha . The proportion of illegal harvest in Indonesian forest sector is estimated to be 85% in 2001 (*Tacconi et al., 2003*). The government and institutional establishment colluded with illegal harvesters for decades. There have been measures to curtail this problem. Indonesian lumber is now certified before being exported. Several European countries, and also China and Japan, have helped by importing only certified forest products (CFPs). There has been a call in reduction of wood processing to bring production levels to sustainable harvest levels from natural forests.[28]

6.4 Discussion

It was seen that plantation schemes and processing developments do not originate in answer to local needs, rather they are response to northern industrial and market needs (and often brokered by local elites or

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[26] PICOP has now moved out from the business of pulp and paper.

[27] Illegal forest activities include all illegal acts that relate to forest ecosystems, forest-related industries and timber and non-timber forest products. They include acts violating rights to forest land, corrupt activities, and activities at all stage of forest management, from planning stages, to harvest, to processing and transport to financial management (*Tacconi et al., 2003*).

[28] *Tacconi et al., (2003)* argue that illegal activities by definition are associated with infringement of the law. The illegal problem, may, therefore be constructed solely as a problem of difficult and weak law enforcement.

corporate houses) and the gains seldom 'trickle down' to people who live where the plantations are established. Industrial plantations may also result in long term degradation of land and livelihoods of large numbers of communities. Also, large industrial plantations today can not be fruitfully discussed in isolation from the global economic and fiscal realities; the issues are political, not merely technical. The recent certification programmes to combat illegal logging have brought in tangible results. It has brought to the fore the fact that there is a need for international cooperation if illegal forestry trade needs to be checked; indeed, the high value of timber has helped develop a degree of consensus on fair timber trade practices, such as the Tropical Forestry Action Programme, the International Tropical Timber Agreements (1983 and 1994), the UNCED resolutions, CITES, and so on. The Deramakot initiative shows how a number of goals can be sustainably met in forest lands while keeping it commercially profitable and socially equitable.

7.0 NON-TIMBER FOREST PRODUCTS

Non-timber forest products (NTFPs) have gained significant attention in forest management and are now seen as one important approach to achieve SFM.[29] This chapter discusses how the use and management of NTFPs are diverse and complex processes and how they require an integrated approach – one that combines ecological, socio-economic, socio-cultural, political, and institutional perspectives to achieve sustainable yield, use and management of NTFPs. It is agreed that NTFPs are important sources of food, medicines and income to poor forest-fringe populations, thus also making the forest cover a valuable resource to local citizens if it is based on an ecologically sustainable extraction system. On the other hand, certain NTFPs are now also traded on a large scale, where the main purpose is to supply specific NTFPs of high commercial value to urban and international markets. This chapter discusses the use and management of two types of NTFPs, those that command high value (bamboo) and those that are usually used to subsidise subsistence economy (rattan, sal seeds and tendu leaves).

7.1 NTFPs for subsistence and local economy

There are a variety of NTFPs that are used by rural people to meet a number of their needs. Many households rely on sale of rattan, bamboo, fibres, medicines, gums and wild foods to supplement their farm income all year round. Others get involved with NTFPs collection and sale during emergency periods when agricultural conditions are poor. NTFPs add variety to diets including provision of essential vitamins, proteins and calories in otherwise bland and nutritionally poor diets. Forest foods are also used to help meet dietary shortfalls during food scarce seasons of the year. Many plant products are used for medicinal and ritual purposes.[30] Also, rural people depend on forests to generate and supplement their incomes.[31] This section discusses the collection and trading of low value NTFPs such as rattan and sal leaves. It will also discuss policy frameworks and marketing institutions that are in place for the trade of these NTFPs. The section will conclude with an analysis of recommendations for fairer NTFPs collection and trade practices in Asia.

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[29] Here, NTFPs are taken to mean all products removed from forests except timber: i.e. food, cattle feed, medicines, roofing materials, fibres, leaves, fruits and also animals. Such a definition includes fuelwood and wood for small-scale construction (as against, the term Non *Wood* Forest Products that will rule out the last of these two forest usufructs).

[30] It is estimated that for at least three-quarters of the world's population, traditional medicines derived from NTFPs are an important source of medical treatment (*Rijsoort, 2000*).

[31] It has been noted that social organisation and spatial location and type of forest play important roles in the NTFP sector. Also, men and women have different roles in collecting, processing and marketing NTFPs. Going to the forest is an important social activity for women where they have opportunities for social contact outside the family. Again, it is usually women who are involved in processing and marketing of NTFPs. It has been argued that traditional forest management systems are often based on such an understanding. On the other hand, local management systems are often hampered when the population and market pressures become high.

7.1.1 The case of rattan

Rattan is one of the most important NTFPs in national and international trade. Among the producer countries, Indonesia dominates the world rattan trade. It has a clear advantage over other countries with its abundant supply of wild and cultivated rattan (nearly 80 % of the world's raw materials is present in Indonesia). The Philippines, Malaysia, China and Thailand are also important contributors to the global rattan trade (*Sastry, 2001*).[32]

Trade and industry. The 'rattan industry' is highly fragmented; more than 90% of all production units are cottage and small-scale enterprises employing fewer than 50 people in each unit. The furniture that is manufactured using rattan uses labour-intensive processes, employing more than a million people in Asia. Of these, an estimated 500,000 work in the manufacturing sector and another 700,000 in the collection, primary processing and transportation of raw materials. The low degree of mechanisation and labour intensity of the rattan industry are also reflected in the low average investment per worker in modern rattan factories.

To promote domestic processing industries, while helping to alleviate the depletion of the resource base, governments of major rattan-producing countries in Asia embraced a ban on export of raw cane and/or heavy duties on export of semi-processed rattan products. While there was an initial glut of raw material supplies in resource-rich countries such as Indonesia and Malaysia, the shift from the traditional practice of exporting raw rattan to the export of semi-processed and finished products has promoted local industries (*ESCAP, 1991*).[33]

Depletion of the natural resource base and consequent domestication. The rapid growth of the industry from the 1970s to the early 1990s led to overexploitation and wasteful utilisation of the wild resource and consequent depletion of the stock, especially of desired species. For some countries, the dwindling supplies of rattan resulting from overexploitation and big loss of forest habitat have posed a serious threat to the industry, resulting in declining exports and the closure of several operations since the mid-1990s.

Plantations of rattan, either in logged-over forest areas or as an agroforestry crop in rubber or other tree plantations, have been promoted in order to relieve pressure on overexploited natural forests and ensure stable supplies of desirable species for the industry. Although significant advances have been made in the understanding of rattan as a potential plantation crop, much is still unknown. Apart from a few exceptions, such as Indonesia and Sabah, rattan plantation development has been slow because of technical or financial problems.[34] Some growers have also reported problems in harvesting small-diameter plantation cane. Thus, further research is needed on the characteristics of plantation species.

The financial profitability of industrial-scale rattan plantations in Asia remains uncertain, as other land uses are more lucrative. Nevertheless, both large- and small-scale plantations in Indonesia and Malaysia have shown some promise. In several countries, governments have initiated interventions to enhance rattan cultivation, justified by the economic benefits that have accrued to rural households in Indonesia and smallholder rubber plantations in Malaysia (*INBAR, 1998*).

***Uses of rattan in South* Asia**. Although the rattan products of South Asian countries have a lower market value than those of Southeast Asia, rattan has an important role in the rural economy in India. Rattan is not

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[32] Rattan, a spiny climbing or trailing palm with some 600 species, is an Old World plant. Its distribution is limited to tropical and subtropical Asia and the Pacific, where ten of the l3 known genera are endemic, and equatorial Africa, where four genera occur, of which three are endemic. The greatest diversity is in the Malay peninsula and Borneo (*Sastry, 2001*).

[33] A significant increase (almost 200%) was reported in the export value of rattan products (mainly furniture) from Malaysia in the 1990s as a result of the export ban.

[34] To date, more than 3l 000 ha have been planted in Malaysia with the large-diameter *Calamus manan.* Of these plantings, 7 000 ha are in rubber plantations throughout the country. In addition, large plantations of mainly *C. caesius* and *C. trachycoleus* have been established on a total of 10 000 ha. Other rattan species considered for plantation development include *C. scipionum* and *C. palustris*.

only important as a commodity for the furniture and handicraft industries, but also for raft making, house construction, baskets and poles for carrying goods. Rattan leaves are widely used as a thatching material (*Renuka, 2001*).

In Nepal, besides local uses, rattans have great cultural value. The Tharu people (an ethnic group) use rattan sticks in temples, believing them to be holy and capable of warding off evil spirits. Priests keep rattan sticks with them while attending religious functions. Rattans within the temple compounds are well protected and cannot be harvested. The indigenous people in Bangladesh use young leaves, roots and shoot tips of rattans as medicines and as a vegetable. The rattan craft is a traditional occupation in Sri Lanka. Shortage of raw material, however, is challenging the industry, and bamboo, plastic and cotton materials are replacing rattan (*Renuka, 2001*).

Discussion. Domestic forest policies can give incentives for rattan domestication by providing tenurial security to gatherers and planters, credit and technical assistance for plantation development, and favourable harvesting and marketing arrangements. Basic infrastructure - effective transport and other mechanisms to link sellers with local and foreign buyers - are also needed to improve profitability of rattan production and manufacturing activities (*Pabuayon, 2000*). Also, government-private sector coordination must be strengthened, including credit schemes, improved technology for small and medium-sized enterprises, and policy and macroeconomic interventions (support of credit, tenure and CBFM) in support of the rattan sector.

7.1.2 The case of tendu leaves and sal seeds

Tendu (*Diospyros melanoxylon*) and sal seeds (*Shorea robusta*) are two important NTFPs that are collected by villagers in South Asia. They were the first species to be monopolised by the state, where these NTFPs could only be sold by the villagers using state agencies **(***Prasad, 1999*). Tendu is found in abundance in tropical deciduous forests, on wastelands to some extent and even on private holdings and the leaves are used to wrap traditional cigarettes (*bidi*)**.** Sal, on the other hand, is the key commercial timber species of India. Sal trees also exude an oleoresin that is valued as incense in religious ceremonies and used in paint and varnishes. Traditional healers use sal wood to cure migraine, skin infections, syphilis and gonorrhoea. Sal seeds contain 12-19 % fat. This fat, after extraction is used for manufacture of soaps, chocolates and confectionery.

Institutions and policy framework in South Asia. In India, NTFPs were once used almost exclusively by forest dwellers working as artisans. Once their value as raw material for industry was recognised, new rights were created for industrialists creating hardships for the poor. To safeguard the interests of the poor, in the 1960s and 1970s, the Government of India (GOI) nationalised the trade in NTFPs. Though the nature and extent of the NTFPs trade nationalisation varied considerably by State and product, nationalisation in general required gatherers to sell the products to the FD or to an FD agent, such as state forest development corporations, federations, cooperatives and tribal societies (*Prasad, 1999*).

Rather than improve the bargaining position of the poor, nationalisation affected them adversely (*Kumar, 2000*). It reduced the number of legal buyers and choked the free flow of goods. The State Corporation formed for marketing NTFPs (Forest Development Corporations, or FDCs, Cooperative Societies and TRIFED) got to have huge, redundant capital and personal bases (*Kumar, 2000*). Even on a variable-cost basis, they need huge markets to break even. In order to maximise their margins, the agencies buy only better quality NTFPs, thus reducing official collection. More recently, collection rights (of bamboo and sal seeds for example) have been given to paper mills and owners of oil extraction plants. Thus, the state monopoly has made room for a private monopoly, and is aiding and abetting market imperfections. *Prasad (1999)* has argued that while the stated objectives of creating state monopolies were well-meaning, the situation on the ground suggests that forest-dependent communities do not appear to benefit either in terms of wages or improvement in socio-economic conditions or in gender equity. Also, forest degradation has not been halted, and destructive harvesting has been observed in some cases where the prospect of short-term profit has obscured care for long-term sustainability. On the other hand, the profits for forest communities could be greatly increased if they had the option to directly deal with the market. This situation has become better in several areas on implementation of Joint Forest Management (JFM) when local communities who have been registered to protect local forest under the JFM programme (see next

chapter) are given rights over usufruct such as grasses, NTFPs and also a portion of the proceeds from the sale of trees when they mature. With JFM, all NTFPs barring a few nationalised products (like kendu leaves and sal seeds, which are still to be deposited with government agencies against prescribed wages) are available to villagers free of state royalty charges (*Rabindranath, undated*).[35]

Markets and value addition. The cost of collecting and harvesting NTFPs appears to vary widely from negligible to prohibitive. The collection is often physically arduous (rattan collection), may require a great deal of skill or experience (lac production), may require special tools (sal seeds), or require the collector to search further away when resources are depleted. In addition, the transportation costs (to markets) are critical in determining the profitability of an NTFP enterprise (*Newman and Hirsch, 2000*). While NTFPs contribute to household income in many places, this contribution is socially and geographically uneven. In India as a whole, NTFP production contributes about 40% of total official forest revenues and 55% of forest-based employment (*ibid. 2000*). However, whereas in Bihar about 17% of the total revenue from forest production is received from NTFPs, in southwest Bengal it is only 1.7%.

The difficulties in trading with the government have resulted in several informal intermediaries cropping up to act as links between the rural people and FD-sponsored institutions and markets. There is a common agreement in much of the NTFP literature that the relationship between producers and traders is economically exploitative. Profit margins for contractors, wholesalers, transporters, and exporters are often quite high. Exploitative relationships appear to be most evident in cases where intermediaries or middlemen are the primary point of sale for producers. Traders are tied vertically to the collectors through one or a series of intermediaries. Traders protect themselves from competition with other traders through debt or patron-client type relationships with collectors. Traders are then able to cooperate to both fix prices and control delinquent collectors.

The rates offered by the agent or trader are typically low. Typically, low value gets added to NTFPs locally when they change hands from collectors to porters to local traders, and are sold at a much higher price to end users. The lack of processing facilities among forest villagers means that most of the items collected by them involves no processing (except drying), before the sale.[36] The lack of storage facilities and the perishable nature of many NTFPs again leave the sellers at the mercy of traders who do not offer the price set at the beginning of the season, and instead lowers it when the items have already been collected. The collectors also face problems in measuring the quality and content of the NTFP and have to do with rough volume measures prompted by the agent. Indeed, just collecting NTFPs with few reassurances of a fair price can become poverty traps. Prices of all primary products are obviously always lower than processed and finished products, and those who are dependent on the former are unlikely to improve their economic situation. It will hence be necessary for the collectors to either organise themselves in order to strengthen their price negotiating power and/or to build up their own facilities that allow value addition to the NTFPs before they offer them for sale. However,to date in most Asian situations the real beneficiaries of NTFP enterprises are private traders who dominate the market.

NTFP marketing solutions. On the other hand, it will be simplistic to assume that if collectors are placed directly in the market they will fare better. In fact, the intermediaries too are often exposed to high levels of risk. If these links are bypassed, producers will then be exposed more directly to the same risks and subject to the economic consequences. As the type of market shifts from local rural to national urban to international, the relative risk increases. Specifically, international markets in NTFPs have a history of boom and bust and are subject to higher quality standards, sophisticated market preferences and international trade rules. Hence, elimination of middlemen does not appear to be economically beneficial to producers in all cases. Therefore, a solution could be to improve work relations between the producer-

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[35] However, certain NTFPs such as sal leaves, gums and resins, khaira, catechu and NTFPs with medicinal uses are not allowed to be leased out, as the collection of these items on a commercial scale are understood to have adverse impact on the sustainability of that particular species and the forest.

[36] Honey is usually squeezed out of the comb and filtered through a white muslin cloth. Forest Camphor has to be collected and cleaned of mud and other impurities to get a good rate. Roots and barks are also dried. Some items which use the full plant, usually a creeper is cut into pieces and dried before selling. The process of drying decreases the weight and this is a constant battle between the primary collector and the buyer (*Utama et al., undated*).

collector and the intermediary by ensuring that the latter are not major creditors to collectors, they don't have a monopoly on transport, and collectors are not deprived of correct market information.

Depletion of the NTFP resource base and policy measures. Last but not least, there has been an increasing trend in depletion of NTFP resources either due to commercial pressures that are increasingly organised and exploitative or due to increased anthropogenic pressures on forest land and unsustainable harvest practices. *Rabindranath (undated)* explains that forest policies, particularly the Indian JFM programme have provided no regulation on extraction of NTFPs. Thus, over-extraction of leaves, seeds and other NTFPs tend to affect long-term forest regeneration and sustainability. It will thus be important to promote adaptive forest management methods that enable villagers to monitor and assess the impacts of a given extraction practice.

7.2 Commercial NTFP: the case of bamboo

7.2.1 Introduction: comparing China and India

Being a source of raw material to many industries - pulp and paper, rayon, and fibreboard - bamboo is critical in the forest-based industrial development in both India and China. It is also an essential ingredient of the subsistence economies of bamboo-dependent sectors of the population, i.e. tribal and forest dwellers, bamboo craftsmen and artisans, and local rural people. In that sense, India is a large bamboo producer, next only to China in terms of bamboo production. India has 7.36 mill ha of the forest area (13.6% of the forest area of the country) under bamboo plantations (*Singhal and Gangopadhayay, 1999*). In addition, there are 1.75 mill ha of bamboo outside the natural forest area. The state of Madhya Pradesh has the highest bamboo forest area of 2.2 mill ha and the highest bamboo area outside forests of 0.2 mill ha.[37]

In search of economic efficiency, China has undergone considerable land tenure, social organisation, and management policy changes in the last two decades. However, India's bamboo trade is still subject to strict government regulations. In India, institutional arrangements of the bamboo sub-sector can be characterised as partial, centralised, almost uniform across the county, full of rigidities, non-sensitive to local conditions, non-sensitive to other forest sub-sectors, and oriented towards profit maximisation of industrial units. In China, the common characteristics are relatively higher decentralisation, flexibility and sensitivity to local conditions and related sub-sectors.

7.2.2 Policies and marketing systems for bamboo plantations

In China, prior to the 1979 reforms, all bamboo lands were either collectively owned or state-owned. However, after the reforms in 1979, although the ownership status remains the same, the management rights have been transferred to individual households. The main focus of management is on equity and economic efficiency. In India, bamboo lands under natural forests have been state-owned for at least one and half century. However, bamboo on agricultural lands is privately owned. The state has all management rights on state-owned natural bamboo forests. In some states, the state allocates harvesting rights to industrial units for a given period on a fixed forest area. But, individual households have no management rights on state-owned forest lands.

The 1988 Forest Policy of India emphasises three issues – the rights of the local forest-dependent people, involvement of the people in forest management, and supply of raw material to forest industries. In the subsequent JFM policy statement, State governments have been asked to distribute NTFPs (including bamboo) free of cost or in some states at very nominal prices to members of JFM schemes in exchange for sharing management responsibilities of their local forests. However, this does not imply that local

[37] Bamboo forests of India are dominated by species that are clump-forming, accounting for 67.3% of the total growing stock. The dominant species are *Dendrocalamus strictus* and *Bambusa bambos*, accounting for 45% and 13% of the growing stock. The main species of non-clump forming bamboo is *Melocanna bambusoides*, with 20% of the growing stock, mainly in north-eastern states. More than two-thirds of the bamboo-bearing forest area is located in the four states of Madhya Pradesh, Orissa, Maharashtra, and Andhra Pradesh, with major growing stock also in the seven north-eastern states (mainly in Assam, Manipur, Mizoram, Madhya Pradesh and Arunachal Pradesh) (*Adkoli, 1999*).

populations are in better control of bamboo in India. On the contrary, the bamboo prices that are fixed by the state for traditional village consumers are higher than the price of bamboo to industrial units.

There is a also lack of institutional arrangements in mechanised processing of bamboo products, training of bamboo artisans, marketing and credit schemes for establishing local bamboo enterprises. The marketing of bamboo is neglected in the bamboo production and consumption system in India. There is no support to the local producers of bamboo for facilitating bamboo marketing from the government nor are there any community organisations involved in marketing of bamboo products. Instead, local middlemen play an intermediary role in trading bamboo and its products from local markets to city markets.

In China, private entrepreneurs have used market research of bamboo products to design and develop bamboo products that cater for the demand of larger national and international markets, as against the craftsmen in India who continue with traditional products that have gradually lost their attraction to customers. In addition to these small consumer items, China has also developed new industrial items such as bamboo flooring that has a huge market potential in Europe and North America. Indian enterprises have limited themselves mainly to pulp for paper, with little effort for product diversification.

7.2.3 Beneficiary groups from bamboo enterprise

In India, bamboo business works to the advantage of industrial units, mainly pulp mills, and at the village-level, the sale of bamboo supports the subsistence economy of villagers who are involved. In China, however, bamboo has played an important role in increasing the income-levels of rural population and bamboo no longer has the 'poor-man's resources' tag. On the other hand, as a result of the liberal economy attitude and high-value product that bamboo has become, the management of bamboo-business has to face competitive markets. The state has no major role to play in the supply of raw material to bamboo-dependent industrial units. In India on the other hand, the state continues to be responsible for raw material supply to the industries, however inefficiently and inequitably these subsidised operations are carried out.

7.3 Discussion

The NTFP economy typically comes with a 'poverty image' (*Rijsoort, 2000*), where NTFPs are used by poor rural people living next to forests to supplement their food, medicine and income from these usufructs.[38] In India, the nationalisation of NTFPs and the recent JFM management system provide considerable tenurial security to poor populations in accessing the usufructs. However, due to the lack of value addition to the collected NTFPs and fair marketing system, the collectors benefit little in actual fact. If the aim is to combat poverty at local level using NTFPs, it is imperative that the current institutional and policy framework is changed from mere rhetoric to one that guarantees a fair and equitable deal to primary collectors. Indeed, if NTFP-based enterprises continue to remain a poverty trap, particularly in select pockets or at a certain time of the year, the state should help the collector communities with alternative income-generating activities. A sustainable NTFP enterprise will also require a good understanding of the economic and socio-cultural conditions of villagers who are involved in harvest, collection and sale.

Vis-à-vis the bamboo sector in India, the institutional arrangements can be characterised as centralised, state-driven and almost uniform across the county, full of rigidities and non-sensitive to local conditions. Also, the sector does not get adequate importance in the policies; for example, the 1990 GOI order on Joint Forest Management has no specific provisions for management and trading of bamboo and it continues to be clubbed with other NTFPs. The present conditions are used for profit maximisation of industrial units albeit inefficiently whereas rural poor are only able to scrape a subsistence-level income in return for their input in the bamboo enterprise. In China, on the other hand, the recent policy changes has meant liberal involvement of individuals and markets that have in turn helped turn the bamboo sector into an efficient competitive business enterprise with holds on important national and international markets, and has resulted in higher profits to stakeholders.

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[38] It has been observed that forests are geographically remote from the centres of economic and political power and there is a strong geographic overlap between extensive areas of forest and concentrations of impoverished people (*Neumann and Hirsch, 2000*).

8.0 PARTICIPATORY FORESTRY ON STATE-OWNED FOREST LANDS

The final chapter in this case study series explores the origin and meanings of community forestry programmes that have been taken up by the Indian and Nepalese governments on state-owned forest lands. *Participatory* community forestry is a departure from conventional Social Forestry programmes through the inclusion of 'outsiders' on state-owned forest land. In exchange for forest management responsibilities, the state has agreed to share cash from timber profits with forest dwellers. Villagers have the opportunity to form committees and, in return for forest protection duties, are allowed to secure their subsistence needs from local forests and share profits from timber harvest with the FD.

The next section discusses the key Joint Forest Management (JFM) institutions and inconsistencies that remain in the framework. The *participatory* forestry programmes in India, for example, are, for all formal purposes, designed and managed by the Forest Department. On the other hand, the paradigmatic shift of involvement of villagers on state-owned forest land provides villagers with the opportunity to assert their rights and negotiate better terms of reference with the state, and even engage in several activities that are not formally recognised in the framework that the state draws for participation.

8.1 Joint Forest Management in India

Joint Forest Management is unprecedented not only in inviting legitimised forestry activities on state-owned forest land, but also in promising a managerial and cash incentive (a share ranging from 20% to 100%) for people to participate in management. The crop-sharing arrangement in JFM is seen as a bargain between the state and rural communities. Not surprisingly, the JFM system grabbed the attention of writers such as *Guha and Gadgil* (see *Hiremath et al., 1995*) who wish to see in JFM the chance for restoration of a moral economy through increased tenurial and usufruct rights for rural communities and the exercise of indigenous practices, and those who, on the other hand, are keen to find solutions within existing institutions by way of 'pressuring states to intervene on behalf of marginalised communities, to ensure equitable access to the potential benefits of economic development' (*Rangan, 1996*).

8.1.1 Origins of JFM

The number of Social Forestry programmes that were developed in the late 1970s had helped the emphasis of the state forest policies shift from commercial forestry to that of meeting the needs of the forest-dependent populations on a priority basis. In that sense, JFM is a progression in the 'social'-focus policies. On the other hand, the involvement of villagers on state-owned forest land is an important paradigmatic shift from any previous forest management model and it provided villagers with the opportunity to lay claims to their rights and negotiate better terms of reference (*Roy, 2001*) with the state. Arguably, such a radical departure of involving village communities also results from several other factors, including realisation on the part of the state on the failures of protectionist mechanisms, the continued dependence by villagers on forest resources, and recognition of their claims on access to forests. *Agrawal (1999)* explains that:

"the failure of other alternatives, the demise of grand teleological theories of social change, the importance of community in writings on development and democratisation, the simultaneous valorisation of such related concepts as the local context, indigeneity, common property, participation, and decentralisation, have all fed into the streams nourishing the growth of community-in-conservation".

The origins of the present JFM model in India lie in the Arabari Socio-Economic Project (ASEP) that was stated 1971 by a Division Forest Officer. A radical attempt at participatory forest management was made in Arabari villages in the Midnapore Forest Division of southwest Bengal. An area of 1,256 ha of forest land was obtained from the Forest Directorate with the objective of improving the degraded condition of natural vegetation (mostly self-regenerating sal), while giving economic incentives to villagers in exchange for

cooperation in forest management. Eleven villages, which shared their boundaries with the forest, were included in the project. The project proposed to enhance overall economic activity in the area through planting and protection activities. In addition, a groundbreaking promise was made to share 25% of the income from the sale of timber in the case of harvests. Sal trees were to be harvested on a ten-year coppice rotation; however, no formal protection committee was formed, and, instead, voluntary community protection was sought.[39]

Although all the sections have benefited in some respect, the project remained primarily a venture controlled by the FD and Arabari's elite (*Chatterji, 1996*). The communities did not enjoy ownership nor were they responsible for charting the course of the project. The design of the project did not specify responsibilities and duties to an extent that management would not depend on arbitrary protection methods. Participation from the community was seldom there on a sustained basis, and the prime benefits were typically captured by the elites. *Angana Chatterji*, who has researched Arabari more intensively, concludes that the FD did not endeavour to create a distinction between caste and *adivasis* (tribal) groups, and instead included all households as *equal* shareholders to usufruct benefits (*Chatterji, 1996*). The FD dealt with the project through these elites, whereas marginalised groups were only involved in protection and guarding forests. This state-run 'participation' demonstrated its implications in several ways. When FD support waned (e.g. on transfer of the DFO to another station), community involvement in ASEP faced threats. Similarly, the socio-political divisions within the community, which went unnoticed by the FD, had a detrimental impact on forest management (*Tiwary, 2004*).

8.1.2 Building up on Arabari-like models

The Arabari model was limited in approach, in that it did not address the development needs and opportunity costs of the community and it was largely managed by village elites and the FD. Nonetheless, the project became a showcase for the inevitability of the participatory approach and the progenitor of JFM in the rest of the country.[40] In June 1990, the JFM guidelines were announced in a letter from the Secretary of the Environment and Forests (*GOI, 1990*):

"… for giving to the village communities living close to the forest land usufructory benefits to ensure their participation in the afforestation programme. …if they successfully protect the forests, they may be given a portion of the proceeds from the sale of trees when they mature."

The JFM policy announcement was also to build on the tone set by the National Forest Policy of 1988 that had called for creating a 'massive peoples movement' to minimise the pressure on forests. The letter, however, left it to the various State governments to work out the modalities of the actual implementation of the JFM programme. The States were swift in response, and by 1992, nearly half of the Indian States had put JFM into place in one manner or another (*Khare, 1992*); others soon followed suit. By the year 2002, JFM plans had covered more than 14 mill ha spread over 63,600 Forest Protection Committees in 27 States in India (GOI, 2002).[41] This is an impressive figure considering the fact that of the total state forest area in India is 75 mill ha (*GOI, 1980*), of approximately 30 mill ha are located next to forest-fringe villages (*Damodaran, 2003*).

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[39] Participation on state-owned land was also seen in villages in Harayana State. The concept of 'social fencing' was promoted where villagers agreed to reduce their dependence of unsustainable grazing in fragile, forested hill and instead share increased production from socially fenced forest areas (*Sarin, 1995*).

[40] The Haryana's Sukhomajri model remained small in scale, while West Bengal's effort has expanded dramatically. As such, it is the West Bengal JFM framework that has served as a model for other states (*Sarin, 1995*).

[41] This figure excludes nearly 6,000 self-initiated forest protection committees that potentially manage another 80,000 ha of forest land.

8.1.3 The institutional design of JFM

The FDs in each State interpreted the resolution with some variances, including how to name village forest committees,[42] the structure and size of the management unit, the percentage of the share from forests and the modes of distribution of forest usufruct to villagers. Generally speaking, the FD invites forest-fringe villages to form Forest Protection committees (FPCs) to manage local forests. An FPC is represented by one member from each household (in some States, the spouse is a joint-holder in the JFM membership). The executive body heading an FPC is to have representation from the *Panchayat*, village elders, members of scheduled castes and tribes, and women. The forest beat officer acts as the coordinator between the villagers and the Forest Department. Once an FPC completes its mandatory period since formal registration (usually 5 years), an area is identified by the FD for harvesting. Once the felling is carried out and sale done (through auction, tender, negotiations, or pre-destined), the cost of harvesting is subtracted from the gross sale value. Of this, a fixed percentage (20-80% depending on the State) is paid to the FPC. It is noteworthy that members of the FPC not only receive a share from the sale of timber, but also have access to their local forest for fulfilling subsistence needs of fodder, fuel and NTFPs and have also been promised secure wages for forest work during harvest operations. In addition, several States have promised development works that may come to them through projects, state's shares of harvest money and active involvement in preparing silvicultural micro plans.

There are a number of *limitations to how JFM is designed*. The agreement, for example, allows management only in protected forests. Villagers living next to reserved category forests (and these make up 51% of the total forest area in India) may have similar socio-cultural dependence on the forest, but they continue to have much more limited concessions in forests. JFM is subject to legislation, agreements, and goals that are present at State and national levels. The States, for example, still aim to put 33% of land under forest cover (envisaged in the second five-year plan, and further emphasised in the National Forest Policy 1988) and are restricted by the 1980 Forest Conservation Act to divert forest area for any purpose other than forestry without prior concurrence of the Government of India. The Act also prohibits creation of village forests from reserved forests, essentially disallowing the FD from changing classification based on current realities. Such conditions not only bind the FD to meeting targets (both in quantity and in principle), they greatly curtail the flexibility needed to articulate local demands and provide incentives for participation, such as rural development works. The arrangement in JFM usufruct sharing varies from one State to another, providing dissimilar incentives for forest works around the country. The programme has placed most of the managerial power in the hands of the FD without, however, clarifying how the monitoring and enforcement of the JFM agreement will take place, particularly in situations where the level of utilities by the villagers is different (*Ligon and Narain, 1999*). The JFM resolution announces little to recognise the heterogeneity of the rural population (for example, the difference in dependence on the forest by different sections of the population), the importance of leadership, or the degree of contribution of labour by individual households in the management of forests. The JFM programme instead provides for universal membership and an equal share in forest usufruct and other benefits (*Tiwary, 2004*).

8.1.4 Results from JFM

The early reports on JFM were encouraging (*Hobley, 1996*). JFM was reported to be instilling new attitudes and behaviour in the forest bureaucracy towards the villagers (*Poffenberger, 1995; Kurian and Bhatia, 1997*). Many forest beat officers reported that their primary incentive to encourage JFM was the vastly improved relations they came to cultivate in the community (*Poffenberger and McGean, 1996*). NGOs too found themselves accommodated in the new regime as agents of change and promotion (*McGean, 1991*). Through group exercises, discussions, meetings, and monitoring, the NGOs were to promote participatory practices in members of FPC and the FD officials. *Nesmith (1991)* concludes her thesis on Social Forestry in West Bengal with the opinion that many lessons from Social Forestry are usefully addressed in the principles of JFM. *Warren (1995)* mentions the transformations that are apparent at the 'managerial' level and how NGOs working on rural development can now engage in the forestry realm).

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[42] Forest Protection Committees are known by various names in different States: Forest Protection Committees (FPCs) in West Bengal, and Village Forest Management and Protection Committees (VFMPCs) in Jharkhand. A recent policy guideline has suggested that these committees are uniformly called as JFM committees – JFMC. (*GOI, 2000*).

8.1.5 The practice of JFM in village-based forums

JFM has proved a useful structure for allotting patches of state-owned forests to local villagers for management purposes. In allowing sub-division of the forest resource, the method of the state is close to what villagers inherently devise for local forest management (*Tiwary, 2004*). It was found in Jharkhand and West Bengal that one of the most important strategies and analogous forestry practices used by villagers in is the creation of 'zones of exclusion' to exclude outsiders from using their forest (*ibid. 2004*).[43] The villagers' choice is usually influenced by factors such as the history of use[44] and dependence by local people and even such spatial coordinates as proximity of the forests to their homestead and agricultural lands. The villages that are not situated next to forests, despite having similar needs from forest resources, are typically left out of registration under the JFM agreement (*Tiwary, 2004*). Also, the government's goal to universalise the formation of village forest committees around protected forests with a universal membership has not proved effective in every case. Uniform, small groups of villagers with members having high incentive to save forests often perform well.[45]

JFM recommends that the representation of forest protection groups is made through a number of executive committee members who are to be elected regularly. However, in practice, such egalitarianism and democratic attitudes are seldom the case. Instead, a handful of villagers (indeed, often only one), and particularly those who have a dependence on forests, a passion for forest conservation, and inter-institutional skills, can override differences within the community. They are able to combine forestry concerns with other facets of rural life and are best able to sustain communities' interests and achieve unity in forest management. These leaders play a crucial role in representing community interests and building relationship with external institutions. They are the chief contact persons for the FD and crucial in determining protection methods, arbitration in instances of contestation within the village or from outside, and in distribution of forest usufruct (*Tiwary, 2004*). Similarly, a recent World Bank survey in five different provinces in India found that proximity to forest, dependence on forests for fuelwood, and leadership were the key factors in shaping successful community forestry (*Bandyopadhyay and Shyamsundar, 2004*).

A surprise element is that the key incentives that was provided in the JFM programme – a cash share from harvest – although an attractive proposition, is often a paltry sum, and is made available by the FD at irregular intervals, if at all (*Mukherjee, 1995*). Instead, the key incentive is often an assured access to fuelwood (*Tiwary, 2004; Bandyopadhyay and Shyamsundar, 2004*), NTFPs (*Prasad, 1999*)[46], and chances to involve other institutions into aspects of rural development (*Tiwary, 2004*).

There is no particular unity of opinion on how FPCs should function in order to well manage the local forests. *Burman (1996)* finds that the opportunity costs that farmers put in being recovered as a critical factor along with occasions for support activities, such as beekeeping, fisheries, etc., within JFM. There is an equal scepticism of how much real power FPCs have got. For many, the functions of JFM remain top-down with all major decisions made by top bureaucrats (*Burman, 1997; Kolavalli, 1995*). Again, others question the sufficient differentiation that FPC membership show in terms of uniformity of need and other social capital characteristics. Based on their research in West Bengal, *Beck and Ghosh (2000)* and in Uttranchal, *Madhu Sarin (2001)* reason that the newer form of community management of CPRs may only add to the exclusion of the poor and women, possibly because it does not tackle what lies at the heart of forest destruction: agricultural intensification, population growth, the bias favouring the elites and the commoditisation of CPRs. *Arora (1994)* suggests a number of criteria that need to be met for successful implementation of JFM, including principles of empowerment, autonomy, self-realisation, and

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[43] However, the area of forest land that has been allotted by the FD for JFM purposes may not necessarily be the same area that the villagers identify for protection.

[44] The history also determines the relationship villagers have had with the local forests. For example, the committees that perform well in JFM usually have had a concern for protecting local forests before the JFM came into place.

[45] Encouragingly, the GOI is now seeking to focus more on the process of enlisting support for JFM programmes than fixing a target on number of villages that must be registered by a given beat office.

[46] *Prasad (1999)* however points out that despite a state monopoly on NTFPs management, tribal people and other forest-dependent communities seldom get fair wages and profitable working environments.

effectiveness. *Naik (1997)* finds labour the major investment in JFM, and draws on theoretical situations in which, depending on available labour versus return, the success of FPC would be determined.

The village-based forest management committees need to be given more autonomy so that they can partake in forest management in ways that are akin to normal community practices as mentioned above. The FD should provide room for villagers to decide on forest management duties and harvest options that best reflect their labour input, dependence on the forest, and larger market opportunities. However, left to itself, this specialised institution remains inherently unstable. Support from the FD on forestry and rural development is crucial in bolstering the initiatives that are taken by the village-based committees. Outside institutions would need to ensure that their affiliations do not cause detrimental affects in the way the committees function.

8.1.6 Role of *Panchayats* and NGOs in JFM

In another key breakaway from earlier policies, village *Panchayats* and NGOs have been included in the management scheme in JFM, principally to promote forest participation. In both cases, however, the exact nature of involvement is unclear. *Panchayats* are a traditional village institution that have a statutory status, several financial and administrative powers, and have been asked to play a supervisory role for the FPCs. These, on the other hand, do not share a similar complementary relationship with the *Panchayats* – they cannot, for example, use the *Panchayat's* executive and judiciary powers for forestry or development purposes. Similarly, the NGOs, although recommended to play a supportive role to JFM, are excluded from any direct involvement in the forest land, and the exact nature of their responsibility has not been made clear.

Panchayats or village councils have been given important roles in JFM. As members of the executive committee, the members from the *Panchayat* are to play a supervisory role. This provision, however, assumes that the *Panchayat* leaders can represent and well understand the forest needs of all the members of forest committees and act in a reliable, efficient, and just manner in the realm of forest management. However, the village leaders that represent the *Panchayats* are not always sympathetic to forest management. Instead, the members of FPCs are in the best position to secure forest usufruct and should be provided with support that bolsters their initiatives. FPCs should be encouraged to maintain a symmetrical relationship with the *Panchayats*, particularly on issues of forest management. The FPCs can also be useful to the FD as a formal point of contact that can be used to approach villagers for forest conservation, harvest work, and micro plans without necessarily having to fall back on the *Panchayat* to act as the 'go-between'. Indeed, to make forest committees a complete subsidiary of the *Panchayat* would not be an effective solution to forest management (*Tiwary, forthcoming*).

NGOs, on their part, are still trying to find a foothold in fostering JFM. The forest communities are sceptical of getting involved with NGOs that advocate patronising, short-lived projects. However, NGOs that are working in development areas and can ensure sustained presence in villages can play special roles. NGOs that include rural development agendas in their work plans provide strong forums that can be used for forestry management as well. NGOs can also continue to work in areas such as debates on equitable access and distribution of usufruct benefits from forest, the framework of JFM, promotion of autogenous activities, conflict resolution (*Kaswan, 2003*) and engagement of forestry institutions in rural development (*Tiwary, 2003*). The FDs need to be more imaginative in opening areas where the NGOs can fruitfully participate in forest management. An end to the current isolated approach could initiate more meaningful roles from the voluntary agencies in resource management.

8.1.7 Gender concerns in JFM

Researchers have reported on disappointing situations about women not holding primary membership in JFM or not being invited to key activities such as meetings (*Correa, 1996; Sarin, 1996b*). Field studies suggest that women's participation in JFM-related activities is by and large inadequate (*Sarin, 1995, 1996b*). *Correa (1996)* points out the dismal attitude of field-level staff that would neither register women on their rosters nor encourage them to join male members during FPC meetings. It is also noted that the primary membership of JFM is given to the male members, usually head, of a household. Also, forest

community groups are usually represented to outsiders by men, and women are only permitted to have little contact with external institutions (*Brodt, 1998*). Indeed, representation by women in village meetings (including in self-initiated forest protection groups) is negligible.

In practice, the protection of the forest is again considered as a male bastion (*Tiwary, 2004*). Despite women going into forest more frequently, the control that men exercise over forestry practices is unmistakable. Men believe they can keep women from violating the rules set by forest forums. Also, despite a less profound role in collection of forest usufruct, men demonstrate considerable knowledge of time, species, and pathways that regulate choices in forests for the women. Indeed, the familiarity of women with the forests, and hence their affinity towards them, cannot be overstated. It is noteworthy that, although the complaints by *Sarin (1995, 1996b)* and *Correa (1996)* are true (i.e. that women are not formally represented in FD-sponsored forest committees), that is the case even in self-initiated forest committees that are formed and managed by villagers on their own. However, informal modes of communication ensure that women obtain the essential information in the community–based forest management (*Tiwary, 2004*).

On its part, JFM resolutions of many states have tried to ensure women's participation, if only on paper, by making it mandatory to have them on the executive committee and be present at FPC meetings. Ensuring equal wages for women, involving women in micro plan preparation and incorporating their concerns, increasing the number of women staff at all levels, or employing women extension workers, are some of the recommended aspects to enhance women influence in local forest management.

8.1.8 Role of the State in JFM: continued top-down approaches

Despite participatory rhetoric, the senior bureaucrats have continued to exercise a top-down approach to managing the JFM programmes. On the other hand, for lack of explicit instructions, the lower-level officers make several departures from JFM provisions in their day-to-day functions (*Tiwary, 2004*). The lower-level officials acknowledge the community management of forests and trust villagers with carrying out forest protection responsibilities, including dealing with petty offences. While being embedded and enmeshed in social networks in the society in which they work, they are at a unique advantage to promote and foster JFM. However, the beat officials have limited power to negotiate profitably with the villagers. Many of their formal work styles, such as patrol duties, the manner in which they interact with the villagers and book-keeping, are replete with methods that have been in existence since the colonial period.

8.1.9 Recent progress on JFM

The Ministry of Environment and Forests in India has looked eager to consolidate the gains that were made in the past ten years and convert JFM into an all-India phenomenon. To extend JFM in closed forests with rich vegetation diversity will mean an important paradigmatic shift in how FDs tend to function: they will no longer be looking to involve people only in degraded forests and taking a target-oriented approach to JFM.[47] Similarly, it is significant that the FD has recognised the importance of autonomy for JFM committees in the overall village polity. These guidelines and the policy pronouncements in the 10th five-year plan (for the period 2002-2007) make it clear that JFM has become the mainstay of forest policies and projects in India and that it is not going to meet the fate that the now near-redundant social and farm forestry programmes met, after a decade or two of inception.

[47] However, the Ministry clarified that the activities would be limited to NTFP management and no alternation should be permitted in the basic silvicultural prescription in the working plan (*GOI, 2000*). Also, the sharing percentage should be limited to a maximum of 20% of the revenue from the final harvest. Finally, JFM will not be extended to forest lands that are under reserved category.

8.1.10 Discussion

JFM is different from past management practices particularly in that several institutions are involved in forest land and usufruct management that was primarily reserved for the state. Although Social Forestry tried to redress the fuelwood need, JFM takes up a larger agenda and seeks to address the subsistence need and conservation by providing forest usufruct and cash incentives to villagers in exchange for participation in forest management. The new members of the JFM constituency – forest citizens (FPCs), *Panchayats*, NGOs – are all invited to join JFM, although how they are to interpret their roles in day-to-day forest management has been less clear. The FD is seen by the rural community as a legitimate institution that can play a crucial role in arranging amicable access to forests, providing solutions to inter-village conflicts, and even bringing development into the villages. The JFM framework not only allows the enlargement of the forest constituency to include several institutions, but it also combines the roles and expertise of these institutions to bring a fresh approach to integrated rural development.

8.2 Community forestry in Nepal

8.2.1 Introduction

In *section 2.3.3* there was a brief discussion on how the concept of community-in-conservation came into being in Nepal. This section discusses the extent to which the community management has affected the forest resources and its intended beneficiaries - the community forest user groups (CFUGs). The community forestry concept in Nepal emerged in a series of steps between 1975 and 1993 (*Springate-Baginski et al., 2003*). The National Forestry plan of 1976 acknowledged the deterioration in the hill forests and the need for community involvement. The amendments in 1976 and 1978 provided for handing over the forests to *Panchayats.* Next, the idea of preparing a forestry master plan was brought up in a donor's meeting in 1984. The first national community forestry workshop held in 1987 contributed to the prioritisation of the community forestry program in the Master Plan for the Forestry Sector (*Acharya et al., 1998*). In 1989, community forestry received substantive recognition in the 1989 Master Plan for the Forestry Sector. Objective 3 of the plan stated that:

"... community forestry will have priority among forest management strategies... and the excess (from forests) will be allocated for forest management in the following priority sequence: people living below the poverty line, small farmers and forest-based industries" (in *Lynch and Talbott, 1995).*

The Master Plan also attempted to gain higher participation of Nepalese women. It stated that, 'one third of members of the users' committees should be women'. The long-term objectives of the Master plan called for meeting the basic needs of the people, protecting the soil and water resources, conserving ecosystems and the gene base and consolidating local and national economies. The medium term objectives were to focus on democratising the regulation of forests and bringing changes to the legal, institutional and structural adjustments to that effect. However, the community and private forestry programme of the plan forms the foundation for community forestry initiatives. The main components of the programme called for management of national forests and enrichment planting of degraded forests, both to be carried out under community supervision, establishment and management of community forests in open and degraded areas, distribution of free or subsidised seedlings to encourage the establishment of private tree farms and promotion of the use of fuel-efficient stoves by supporting their development, production and distribution (*MPFSP, 1988*).

Several supportive programmes were designed to support the CF initiative (*MPFSP, 1988*): The legislation was updated and programmes designed to allow and encourage people to accept full responsibility for the development, management, and protection of community forests. The forestry organisations were proposed to be restructured in order to lend support to the CF programmes. There were proposals to reorient and retrain forestry professionals and technicians to affect the changeover and allow research on forestry infrastructure, silvicultural practices and the general community-based management of forests. There were proposals to establish resource databases to support planning and establishing an effective monitoring and evaluation system.

The Forest Act of 1993 further built upon the policy directives that were laid out in the Master Plan and the eighth development plan (1992-1997), in which the seriousness of community forestry is reflected by calling for constituting 5,000 forest users' groups (FUGs) in the plan period and trust them with 252,000 ha of forest under the CF schemes (this target was easily met).[48] The ninth plan (1997-2002) further adopted poverty alleviation as a key objective of forest management in Nepal. The Forest Act of 1993 shows a marked shift towards democratisation of forest regulations. It has repealed conventional forestry laws and paved way for liberalising forestry initiatives in Nepal.

Similar to India's JFM, Divisional Forest Officers (DFOs) are asked to register forest user groups (FUGs) in order to manage local forests and, in exchange, be entitled to usufruct rights and 100% of share on harvest of timber. The FUGs are also to receive funds for community forest development and have power to report offenders to the FD. Not surprisingly, this Act is considered to be the most conducive legal arrangement for the development and promotion of community forestry in the history of Nepalese forestry (*Acharya et al., 1998*). The implementation of community forestry in Nepal, however, has not always been smooth. For example, an FD circular in 1999 imposed a ban on felling of green trees on community forests (*Khanal, 2000*), which, after strong opposition from the donor community, was withdrawn. Similarly, a cabinet level decision recommended that forest users groups of the *Terai* districts pay 40% of their revenues from forests harvest to government (*Khanal, 2000*).

8.2.2 Role of donor community in Nepal's CF

Nepal's community forestry is unique in that a range of international organisations and agencies are involved in supporting various CF initiatives. These institutions include the specialised agencies of the United Nations, multilateral and bilateral agencies and specific projects that are run to bolster CF projects. CF also finds support from the national and local NGOs and CBOs.[49] This is not surprising considering the fact that nearly 80% of Nepal's development budget comes from numerous donors (*World Bank, 2001*) and the long history of Nepal's relationship with developed nations should bear optimism for its CF initiatives. The Master Plan for the forestry sector provides ample scope for foreign assistance in the development of forestry in Nepal, conceding that the government lacks the human, financial and other resources needed to put all forests under formal management.

However, a general lack of coordination is reported among the donor community and has led to less efficient use of the resources that were made available for the CF. Different stakeholders have been reported to have implemented CF in their own unique ways, causing unnecessary diversity in the implementation of programmes and confusion on how CF should shape up in a given context (*Acharya et al., 1998*). There have been some disappointments; for example, the plantation target for the eighth plan period was 61 000 ha but the result fell short by nearly 60%. Similarly, the performance of FUGs has not always been encouraging (*NPC, 1998*).

8.2.3 Varied results from CF in Hills and *Terai*

The registration of FUGs has moved at a rate of about 1,000 per year (*Springate-Baginski et al., 2003*). By 2003, there were 12,079 FUGs across the country, managing 15% of Nepal's total forest land area. However, another 30% of the country's forest land remains earmarked for FUG management, but is yet to be handed over (*ibid. 2003*). Community management has slowed down the rate of deforestation in Nepal;

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[48] As a comparison, the plantation target for the eighth plan period was 61 000 ha, but the accomplishment was 39%. Similarly, forests were to be leased to 25 000 families, but the performance was less than 10% during the same plan period (*NPC, 1998*).

[49] Donors with CF collaboration in Nepal include the World Bank, FAO, USAID, AusAID, DANIDA, DFID, SDC, GTZ, SNV, the Ford Foundation and IDRC.

in the mid-Hills the rate has slowed to about 0.2% a year, in the *terai,* however, the annual rate of depletion is still high at about 1.3% (*World Bank, 2001*).

It is agreed that community forestry has been followed more enthusiastically in the Hills of Nepal. The government has, however, been cautious in replicating the CF in the rich forest resources of *Terai*. In the hills, the CF has similar teething problems as in JFM in India. It has proven difficult for the FD to shift from a protection mode to one that supports community-in-conservation (*Springate-Baginski et al., 2003*). The FD would also need to strengthen its lower-level staff capacity and its skills in supporting incentives that rural communities seek in lieu of forest management. It has proved difficult to replicate the hill model in other parts of the country, where situations differ. CF expanded and took hold in the mid-hills for several reasons. First, worldwide publicity about the deteriorating condition of Nepal's forests spurred the government to try to control the rapid deforestation that was most visible in the hill forests (*Robinson and Pokharel, 2004*). Second, it was easy for the government to intervene and seek community participation in forests that it considered to be of limited commercial value. Third, the scattered pattern of forests in the hills made it easy for them to be identified and given to appropriate FUGs. Fourth, and most importantly, the great majority of local communities in the hill districts have shown interest in protection of forests to prevent landslides, erosion, etc. (*Springate-Baginski et al., 2003*).

In *terai*, on the other hand, the government has been reluctant to hand over the timber rich forests to FUGs. Several lobby groups, including important donors, have stressed the importance of extending CF to the *Terai* districts as well. Others, however, appreciate the government's concern in handing over the rich *terai* forests with the same terms of reference as in the degraded hill forests. The dilemma of the government, whether to let communities take all the incomes from the forest or to keep part of it, is best illustrated in its August 2003 proposal to impose a 40 percent tax on revenue that is earned by FUGs.

Again, the complex settlement patterns of villagers and rich forest diversity make identification of FUGs a more complex task in *terai* (*World Bank, 2001*). Also, the factors that have been detrimental in promotion of community forestry in Nepal are the divergent interests and aims of different actors in CF – the forest administration, political representatives at various levels, donors, local elites, communities and the Federation of FUGs. The combination of the temporary abolition of elected village and district level governments, and the political insurgency from the Maoist movement, have resulted in yet another complex dimension impacting on the emergence of true CF (*Robinson and Pokharel, 2004*).

8.2.4 Poverty alleviation through Community Forestry

The main objective to start community forestry was to save forests from degradation. Hence, it came as a surprise that forests could be rejuvenated to a point that it can bring significant economic returns to its user groups. Indeed, in resource rich area (also those forests that have rejuvenated considerably), forests are providing important returns for its managers. However, there are indicators that the poor may not have done well under the CF programmes (*World Bank, 2001*). *Malla et al. (2003)* find that poorer households benefit significantly less than wealthier ones. Also, the issue of benefit sharing in accordance to dependence and labour expended in forest management is not worked out. There is also a dearth of involvement of poor people in local decision making processes (*World Bank, 2001*). The high level of illiteracy that exists among typical FUGs and the poor reach that the members have in political and bureaucratic circle, precludes them from getting information and utilising existing policies and institutions to their advantage (*Malla et al., 2003*).

Currently, the sole objective of Nepal's planning policies is poverty alleviation. This emphasis is clearly visible in most of the policy guidelines at the ministries and departments. Indeed, it is imperative that the goal of poverty alleviation gets reflected in CF. Now that returns are better recognised, it is imperative that CF should integrate with programmes that carry development goals with them. Also, equitable and assured access for a large section of the poor is needed. For doing this, there are important paradigm questions that need to be answered – should *terai* forests, with their huge potential returns, be handed to communities to benefit from, is it equitable that different user groups benefit differently depending on the location and size of their forests, what are effective conflict-resolving mechanisms, should the State claim back some of the newly generated revenue for development purposes, and so on. It would also be important that the silvicultural plans that are drawn for community-managed forests try to realise the productive potential of

the forest land (*Malla et al., 2003*) so that it best serves community and development needs. Providing FUGs with skills to use their forests to their potential and produce value-added forest products, such as sawn timber, agricultural tools can greatly benefit their revenues (*Yadav et al., 2003; Dev et al., 2003*). FUGs are now well recognised institutions and often act as effective local institutions involved in development, social activism and networking with a range of government and non-government groups (*Springate-Baginski et al., 2003*).

8.2.5 Discussion

This chapter has discussed characters that are crucial in deciding the success of participatory forestry on state lands in India - history of contest over forests, incentives in participation, local leaders, support from forest department, *Panchayats* and NGOs.

The community forestry in Nepal is similar to the JFM programmes of India. On paper, Nepal's offer to villagers for participation in forest conservation in hill districts is more generous than several Indian provinces – for example, the FUGs are entitled to 100% of the benefits from forests under their management. The CF has been implemented in select areas only, mostly Hill districts. In the plains, it has been met with little support from the state as there is reluctance to give up control of the commercially valuable forests of the *terai.* Another important characteristic of Nepal's CF is its dependence on funds from external agencies and institutions outside the FUGs; so much so that the first phase of CF invariably requires huge subsidies and support in handing over the forest and ensuring that forests are protected and subsistence needs are met.

9.0 CONCLUSIONS

9.1 Summary of findings

The concluding part of this study draws from the entire exercise. It combines various findings of the case studies and sums up the Asian experience in forest use and management. The past few decades have been remarkable in witnessing paradigmatic changes in forest policies, an increase in the involvement of the private sector, increased empowerment and participation of stakeholders in local forest processes, and considerable investments in poverty alleviation and promotion of indigenous rights and gender equity. Several programmes were initiated to increase the stock of trees outside the forest and forest plantations; the next generation of forestry programmes sought participation on state-owned forest lands. A remarkable feature has been the evolution of a multiple set of (often contesting) stakeholders with claim on forests and the consequent development of several forestry sub-sectors. Countries in the region also recognise the importance of biodiversity contained in their forests and have set aside forests for the conservation of biodiversity. Using cross-sectoral analyses of the six case studies, the aim of the summary is to produce representative characteristics for each of the forest management initiative and sum up areas of success and failures (and context) for each initiative.

9.1.1 Forest policies and institutions in Asia

The countries in South and Southeast Asia share a colonial past and the legacy of inheriting large chunks of forest lands that were put under state control. The post-Independence forest bureaucracy retained the colonial legal systems that, at least in parts, were inequitable and outdated. Indeed, several existing forest laws continue to be archaic and hostile to the aspirations of forest citizens and other goals, like the devolution of decisions to the community level. Generally speaking, since the nineteenth century and up to the 1970s, indigenous rights and access to forests were progressively contested by state agencies claiming to act in the best national interest. Of late, however, there has been a growing realisation that problems such as deforestation cannot be arrested without seeking support from forest citizens. There is also an acceptance that forest land must meet the subsistence needs of rural people. The states, accepting these concerns and although having shown no sign of relinquishing their right over the tenure of forest land have announced

several concessions to indigenous people. This concern has been coupled with problems that the states faced in being unable to check deforestation, illegal logging and meeting various forestry-based needs of the nations. Several programmes were taken up, particularly in South Asia, where villagers who live next to state-owned lands and depend on forests in varying degrees for subsistence and to support the household economy were given opportunities to get involved in forestry related activities in order to meet their needs.

Southeast Asian countries have successfully diversified into production and industrial forestry. However, they have suffered from inadequate attention to indigenous rights and illegal logging practices.

9.1.2 Social Forestry

India experienced a clear paradigmatic change in how its forests are managed when, starting in the late 1970s, a number of Social Forestry programmes were developed, and the stated emphasis of the state forest policies shifted from commercial forestry to that of meeting the needs of the forest-dependent population on a priority basis. In sheer area of plantations, the initiative was immensely successful. The failures the programme faced demonstrated the disjunction in goals that the policymakers had set out and the incentive ordinary citizens had in participating in social forestry schemes. The state was too guarded in how the usufruct should be distributed among participants and too slow in bolstering its own initiatives. The individual participants faced the now well-discussed dilemma of common property resources that results in lack of participation. Community forestry, without clearly defined user rights, poor understanding of rural community characteristics and erratic if well-meaning participation by the FDs, went nowhere.

Nonetheless, social forestry experiments changed the face of forest management in Asia for good. Most Asian countries adopted some measure of community involvement in forestry activities and recognised – even if only in rhetoric and on paper – the rights of forest citizens in the use and management of forest land. Community involvement in forestry invited a range of development projects and assistance models for SFM that combined the need to align rural forestry needs with alleviating poverty. The state, bureaucracy, environmentalists and academics alike discussed ways to engage with rural populations whose participation was now seen as crucial in SFM.

9.1.3 Farm forestry and farmers-industry interface

Farm forestry started as part of social forestry schemes, but was by far the most successful of the programmes. It is not difficult to see why: farm forestry contained in itself the key incentive for people to participate in plantation, i.e. to have a cash income. However, the programme achieved limited success due to inexperience of villagers with plantations, a bust in the market for wood products, poor support from the FD and restrictive legislative systems that hindered felling and transport operations. Nonetheless, rural populations got the taste of decision-making and management in forests. Also, farmers in select locations had begun to tie with industries to supply wood for industrial use in return for extension support and guaranteed buy-back schemes.

9.1.4 Industrial forestry

India's progress in community-based forestry was coupled with limitations in inroads it made in the commercial forestry sector. This was due to restrictions placed through nationalisation of forest usufructs and removal of intermediaries and contractors in forest harvests (and later, the ban on clear felling was no help). Southeast Asia, on the other hand, had opportunities to use forest timber for export – first as raw material and logs and then better price fetching finished wood products – thus earning handsome foreign exchange. They made remarkable progress in industrial forestry; however, these countries faced severe deforestation and illegal logging problems. In addition, in high value timber areas, community involvement remains low and the monoculture plantation rate is high. On the other hand, industrial foresters increasingly agree to have multiple uses of forests, give concessions to local communities and have sought international cooperation and modern techniques to combat illegal forest trade.

9.1.5 Non-timber forest products

Relegated to the status of "minor" forest produce for decades, NTFPs have become a focus of interest in their own right. Although they still carry a 'poverty' tag as poor rural communities depend on them to support subsistence economy, their overall value – ecological, social and commercial – are now being appreciated. On the other hand, national institutions and policy frameworks still do not reflect the importance of NTFPs and for all practical purposes, state involvement in the NTFP sector is marked either by lack of participation or one that helps exploitative processes.

Harvest and collection of NTFPs are often painstaking and the efforts are poorly compensated for. Villagers trade through exploitative intermediaries who are difficult to do without (checks and balances are needed – here, state and forest departments can play a role – so that poor forest communities are not cheated and get fair deals for NTFPs). In order to develop higher value NTFPs, such as bamboo, there is a need to allow private entrepreneurship, liberal market systems and associated research to produce competitive products.

9.1.6 Joint Forest Management

The onset of JFM marked the final turnaround by the state from custodial forestry to seeking participation from local communities in the management of forests. JFM is as much a consequence of the popular rhetoric on equity and welfare as it is the realisation that forests next to habitation cannot be protected without seeking participation from villagers who live nearby.

Under JFM, the members of the Forest Protection Committee (FPC) and the self-initiated forest protection groups are playing active roles in negotiating transactions of forest usufruct on state-owned forest lands. The FDs, despite accommodating the rhetoric on participation, maintains a top-down management system in the field. However, at the village level, junior level forest officials, in spite of lack of explicit instructions or autonomy in JFM resolution, have made adjustments that acknowledge community forestry practices. NGOs and *Panchayats* too are finding useful roles in JFM.

In Nepal, the community forestry has had mixed results. Heavily subsidised by the donors (who have not always well coordinated) the programmes have had better results in degraded hill forests albeit not always succeeding to have the benefits reach the poorest of the poor.

9.2 Lessons learnt, implications and recommendations

The final section of the study discusses the lessons that can be learnt from the Asian forestry experience. It makes a few recommendations for a composite and sustainable forest management that well balances the needs of equitable distribution of forest usufruct with generation of revenue, conservation, and overall development, although each goal may not necessarily be fulfilled from the same patch of forest land.

Lesson 1: *The forest concerns are no longer a subject of the nation state. Like all other environmental concerns, forestry too has crossed sovereign boundaries and caught the imagination of people worldwide with slogans that were designed and perfected by academics and quasi-political ecologists alike*. The 1972 UN Conference on the Human Environment, followed by the Brundtland Commission Report in 1989, were key events in the internationalisation of what earlier had been local and national concerns. The positions taken by international forums, pressure groups, and voluntary organisations affected the very heart of environmental policies in developing countries. The resultant rhetoric, backed by academic discourse, has been a decidedly important influence in making nation-states address global environmental issues (*Agrawal, 2001*). The practitioners of political ecology stressed the global effects of local environmental disasters (*Disilva et al., 1994*). The natural ecosystems, such as tropical forests, are treated as the 'heritage of the world community' (*Nygren, 2000*). These concerns have obliged international donors and lenders to stress policies that are conservation-oriented. More recently, funded environmental projects must demonstrate that they are responsive to the needs of local communities. NGOs routinely emphasise the need for greater public participation and community involvement when seeking solutions to environmental problems: 'management at the local level is necessary for achieving the global goal of

sustainable development' (*Ghai and Vivian, 1995*). The 1992 UN Conference on Environment and Development (UNCED) in Rio de Janeiro added an important impetus by endorsing local participation, equity, and grassroots democracy in environmental agendas. These elements came to be at the very heart of ecological movements around the world.

Lesson 2*: There are two important characters that have emerged as essential to understanding contemporary forestry in Asia: one, the multiple numbers of actors and institutions that are involved in the forest dialogue and, second, the standard 'language pack' that is used to address forestry issues.* For example, in India, although pressure groups, researchers, and environmentalists form a strong force in negotiating with the state on behalf of rural communities (*Guha, 1994*), others, such as NGOs, *Panchayats*, and CBO forest protection groups are increasingly involved with actual forest management. On the other hand, the vocabulary that is used by these numerous actors has common key themes, such as fulfilment of subsistence needs, use of indigenous knowledge, decentralisation, participation, involvement of women and tribals – elements that are guided by the principles of moral economy.

Lesson 3: *National forest policies and institutions in developing countries suffer from deep conservatism. Laws once enacted are difficult to be repealed even if they are archaic and contradictory to the understood principles of sustainable forest management*. Similarly, the forest bureaucracy and management infrastructure retain old structure and functioning styles despite change in rhetoric and needs of SFM. Nonetheless, over the decades, the governments throughout Asia have created, albeit slowly, exciting and innovative opportunities for achieving SFM and biodiversity conservation by decentralising authority and responsibility for resource management. Discernable shifts can be seen – away from centralised forestry departments and toward the devolution of forest management responsibilities, to state or provincial agencies, to the private sector, and to community and NGO groups. However, the trend to decentralise is driven by a range of factors, including efforts to reduce central bureaucracies and cut budgets, a history of government forest management failures, increased economic liberalisation and market orientation, and growing commitment to more equitable forest management. While the decentralisation trends are promising, many programmes have encountered major challenges, disappointments and setbacks (*FAO, 2003*).

Many developing countries do not have adequate strength to implement their national forest programmes. The bureaucracy has insufficient knowledge and condescending attitude to create an enabling environment for forestry sector development through the design and implementation of effective forest policies. The states demonstrate weak fiscal and personnel capacity to manage and implement national forest programme, particularly those that are multi-sectoral and involves several stakeholders. Related to these are problems such as inefficiency, corruption and constraints due to poor governance, accountability and transparency. Not surprisingly, the stimuli for changes are often from external sources: international donations (with conditions asking for change), lucrative markets or pressures for change from activists, civil societies, intellectuals and the general public.

Lesson 4: *The lessons learnt from Social and Farm Forestry initiatives are thus: strip plantation is difficult and expensive, village woodlots only work in rare circumstances and have all the disadvantages of facing non-participation like in other common property resources, and private investment (farm) forestry is exceedingly popular, especially with absentee landlords.* Also, mere allotment of state-owned (or *panchayat* and village commons) wastelands to poor families for tree plantation may not bear positive results. It needs to be ascertained how and when families will get all the usufruct in return for managing the trees, what is the role and reward for families during the gestation period, what are the choice of tree species on the land and how do these species support households, will the families be allowed to grow food on these wastelands? Also, in designing social forestry schemes, the orientation should be such that it benefits weaker sections of the society; for example, by putting beneficiary level organisations in charge of management of the plantations. In short, for 'social' forestry, the implementing agency needs to have an understanding of societal factors of the community it elicits participation from and know ways to sustain the programme.

Notwithstanding the criticisms and failures that Social Forestry faced, the various programmes had, nonetheless, initiated the process of involvement of communities with the FDs in addressing forest management. Although participation in Social Forestry remained limited largely to private and village lands, it was still unprecedented for the FD to arrange devolution of forestry decisions, recognise villagers'

subsistence needs, and invite choices and debates on species selection in the management of forested lands. The Social Forestry experience worked as a buffer between the earliest custodial forestry to today's JFM. The projects prepared the FDs to execute similar projects of community involvement on state-owned forest land, thus paving way for the transition to a more radical programme such as JFM. Establishing such a dialogue was important in opening the door for the possible reconciliation of local needs and state forest management.

Lesson 5*: Farm forestry was a case of adjusting the objectives of a programme to match the outcome (cash incentive). Despite the success farm forestry had, the fact that the state support to farm-based forestry has now been nearly withdrawn is inexplicable.* Farm forestry experienced the following lessons: it worked best where commercialised systems of agriculture were already practiced. In subsistence conditions, commercial tree plantations may occur if there is a strong market for tree products and/or where government policies encourage poor farmers to plant trees**.** Also, in subsistence-oriented states, regions or *Panchayats,* the focus should have been on strengthening the traditional agroforestry practices. A farmer's decision is complicated and participatory policies should reflect farmers' priorities; a realistic policy should therefore seek ways in which social benefits are the by-products of private gains. Choice of species in plantation is important. For example, trees with a long gestation period are hardly a viable option for those farmers who have few means of alternative income than work. Wood production entails investment of land, labour and capital in a long gestation enterprise, and hence was taken by those who had a surplus to invest. To provide any sense of long term sustenance of farm forestry, there needs to be extension work from the forest bureaucracy and support given to farmers in areas they are not familiar with, such as harvest, transport and sale of timber in markets.

The market in India for farm forestry has behaved erratically – at first it was 'allocative' (*Saxena, 1990*) and signalled a great demand for wood but, as the supply grew, the market became 'exploitative' and the prices for timber and poles crashed. For lack of support and corrective measures, for a majority of farmers the involvement with farm forestry seems to be over.[50] Better results can be achieved where the resources, skills and expertise that farmers lack are provided by a third-party to form a symbiotic relationship. Indeed, given the right conditions – of availability of demand for a certain tree species, good growing conditions, institutional finance and motivated farmers – industry-farmers partnership can be a success.

Lesson 6: *Farm (and social) forestry cannot be taken as panacea for deforestation nor get to bear the burden of over-optimistic rhetoric for its role in rural development*. Farm and social forestry emerged as major areas for national and international development assistance. For example, it can be argued that social forestry programmes that were launched in over 50 developing countries with a total expenditure committed by donor agencies in excess of $500 million have helped to alleviate poverty, but only to a degree. Nonetheless, the engagement of forest management in the cause of rural development is now a well established fact and phenomenon, if only all its facets are still being understood.

Lesson 7: *The right conditions are also needed to help foster industrial forestry in a country.* For industries to operate on a large scale, the industries will need to take care that they do not harvest beyond the sustainable yield capacity of the forests, that the harvesting cycle is sufficient to allow forests to adequately recuperate, and that there is no excessive damage to residual stands due to poor logging practices or abandonment of silviculture and forest rehabilitation. The success of industrial plantations will also need political endorsement within the country, cooperation from the international community in checking illegal timber trade, and adequate development of infrastructure to harvest and process timber according to the competitive international market.

The wood industry sector of Southeast Asia has too much processing capacity and too little pulpwood, so the logical approach to relieving the pressure on existing forests is to increase the supply of wood from plantations. As a significant conservation measure for existing natural forests, it is essential that the sub-region begins to develop and expand high yielding and efficiently managed forest plantations as a major source of industrial raw material. Also, a matured industrial forestry will take care of fair intra-organisational practices, that local communities' needs are taken care of and their rights are not infringed

[50] Some absentee landowners still continue planting trees using the plantations to avoid encroachment in order to ease the management of their lands.

upon, and that the biodiversity of the larger ecosystem in their work area is kept in balance. Care should also be taken to see that the industrialised segment of the economy does not get into conflicts with the traditional agrarian and pre-agrarian societies.

Lesson 8: *NTFPs are usually of low-value, vulnerable to competition or deterioration in their raw material costs and offer only a fragile and weak basis for livelihoods*. NTFP-based entrepreneurship is likely to collapse or be abandoned in favour of livelihoods that offer greater income security and prospect for growth (which should be state- and policy- supported). The role of forest products among forest dwellers can thus change sharply, with shifts occurring over short periods of time.

The collection and trade of NTFPs vary along multiple axes of social, economic, geographic and ecological factors. These include the distance of the NTFP source from dwellings, proximity to the market, the commercial value of the NTFP, and the nature of ownership and access rights. They are best sustained when combined with traditional knowledge, gender concerns and customary knowledge practices, and when NTFP collection and processing activities are carried out in conjunction with other rural activities. Local collectors receive only a small percentage of the market value of the product. Improved technologies for processing the NTFPs on the spot could increase their share in profits. However, it is necessary to guard how the processing technology is used by the local population; if an NTFP is upgraded and, for example, more technology is applied, it may attract wealthier people to take it up and leave the population groups that were engaged earlier on the margins. Government institutions are often insufficiently aware of the importance of specific NTFPs in forest management. Clearly defined policy and legislation on NTFP collectors' rights to use and manage them are essential first steps in developing the sector. High value NTFPs will need space for private entrepreneurship, open markets and access to research.

Lesson 9: *JFM provides a most useful structure for allotting patches of state-owned forests to local villagers for management purposes. In allowing sub-division of the forest resource, the method of the state is close to what villagers inherently devise for local forest management.* However, the government's goal to form village forest committees around protected forests with a universal membership has not proved effective in every case. Often, a uniform, small group of villagers with members having high incentive to save forests performs well. This is not to suggest that smaller groups necessarily need to be ethnically homogeneous. Rather, there is a need for homogeneity of interest in the population that is supposed to manage a forest resource.

Also, the participation from forest citizens cannot be limited to soliciting their involvement and initiatives. Rather, it must provide a conducive atmosphere where these village-based forums can form linkages with other institutions and actors and bargain on a variety of issues pertaining to rural development forestry. More autonomy is recommended for village-based forest committees and the lower-level staff of the FD. The former should be able to determine working methods (while keeping to goals mutually agreed with the FD) that suit their interests and management methods and best uses opportunities available in exchange for the labour expended in forest management and building institutional relationships. The lower level foresters, on the other hand, should be equipped to involve themselves in an independent dialogue with the villagers over methods of forest management. They should have access to senior officers and the decision-making systems to enable them to make periodic recommendations for adjustments in methods of management and changes in the FD's goals in forest land.

The village-based forest management committees need to be given more autonomy so that they can partake in forest management in ways that are in consonance with the inherent community practices as mentioned above. The FD should provide room for villagers to decide on forest management duties and harvest options that best reflect their labour input, dependence on the forest, and larger market opportunities. However, left to itself, this specialised institution remains inherently unstable. Support from the FD on forestry and rural development is crucial in bolstering the initiatives that are taken by the village-based committees. Outside institutions would need to ensure that their affiliations do not cause detrimental effects in the way the committees function. The beat-level office needs to be strengthened in numbers, have better trained and orientated officers, and offer an attractive remuneration package and fair promotions to staff at this level (issues such as non-participatory attitudes towards villagers, practice of partisanship and corruption will also need to be addressed).

As members of the executive committee, the members from the *Panchayat* are to play a supervisory role. Indeed, to make forest committees a complete subsidiary of the *Panchayat* would not be an effective

solution to forest management. Instead, the FD should recognise those community-based forest protection groups that need support and ensure that the *Panchayats* complement their needs and roles in JFM. Although the FDs have invited NGOs to play supporting roles, their roles remain unclear or limited at best. NGOs that only specialise in *fostering* 'participation and institution building' are held in lesser esteem than those that are involved in development projects or are initiators of development. The development NGOs that remain involved with the villages on a sustained basis are likely to produce powerful forums that can also be used to bolster forest management initiatives. Indeed, the fact that village-based forest committees can combine forest concerns with development issues is one of the most optimistic signs to emerge from the village-NGOs relationship.

Lesson 10: *The roles that the state and the international development agencies have remain important in forest management in Asia and developing countries.* Forest ownership in developing countries has kept the state reservation system that was created during the colonial period, and private ownership is rare. So, what is the case for and against State ownership of forests? For one, various authors that are critical of aspects of state ownership will agree that state ownership is best where the plan is to conserve the forest (as in game reserves). The land tenurial rights can continue to be held by the state where a set of management systems is devised to serve subsistence and development needs in forest land with community interests while the FD is free to pursue pure conservation, commercial and industrial interests on other lands. However, piecemeal solutions, as we have seen before, will not achieve this aim. The state will need to be more sure-footed than ever before pursuing new legislations and a bureaucratic framework that allows re-categorisation of forest land, overhaul working plan systems, stress the importance of micro plans and ensure efficient decision-making systems at the ground level.

International donors and agencies have played important roles as pressure groups, in fostering poverty alleviation programmes, restructuring forest governance, raising awareness of multi-sectoral aspects of forestry, research, creating information database and providing funds to often cash-strapped nation states for supporting 'non-priority' areas such as forestry.

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