

# GROWING GREEN ASSETS

*Removing constraints to private sector  
investment in forestry in Asia and the Pacific*



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**Growing green assets: Removing constraints to private  
sector investment in forestry in Asia and the Pacific**

**Edited by**

**Michael Pescott, Patrick B. Durst and Robin N. Leslie**

**FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS  
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Cover design: Chanida Chavanich

For copies, write to:

Patrick B. Durst  
Senior Forestry Officer  
FAO Regional Office for Asia and the Pacific  
39 Phra Atit Road  
Bangkok 10200  
Thailand  
Tel: (66-2) 697 4000  
Fax: (66-2) 697 4445  
Email: [patrick.durst@fao.org](mailto:patrick.durst@fao.org)

Food and Agriculture Organization of the United Nations  
Regional Office for Asia and the Pacific  
Bangkok, Thailand

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## Foreword

For decades, foresters, environmentalists, policy-makers and development officials have sought to increase investment in forestry to meet various environmental and economic objectives. A wide range of initiatives and programmes, ranging from tax credit, low-interest loans and other incentives to infrastructure and marketing support, and government-supported research and extension, have been introduced in an effort to stimulate more investment in the sector. The results of these efforts have been mixed, but most efforts to stimulate private sector investment in the forestry sector in the Asia-Pacific region have failed to fully meet expectations.

An extensive list of constraints impedes investments in the forestry sector in many countries of the region. Many of these impediments relate to factors outside the control of forestry policy-makers. Many others, however, derive from the forestry policy and regulatory framework directly. Factors such as poorly defined tenure and property rights, weak forest law enforcement and governance, complex regulatory and bureaucratic requirements and arbitrary policy shifts – within the forestry sector itself – often severely dampen the interest of the potential investor. While some such constraints were often installed with well-meaning intentions, their consequences may not have been fully realized or the measures may have outlived their usefulness. Frequently, careful analysis reveals that such constraints are unnecessary or unintentional. Important questions then emerge with regard to how we can best identify and remove unnecessary impediments that curtail investment in the sector.

The public sector continues to play a dominant role in forest management of many countries in the region and although there is an increasing recognition of the potential contribution of the private sector, our broad understanding of investment constraints and the nature of an enabling environment for investment in forestry remains weak. Thus, member countries of the Asia-Pacific Forestry Commission (APFC) requested the Food and Agriculture Organization of the United Nations (FAO) to coordinate a regional policy study of policies and regulations, “with the aim of identifying approaches for removing unnecessary constraints to private sector investment.”

*Growing green assets: Removing constraints to private sector investment in forestry in Asia and the Pacific* presents the results of the regional policy study requested by the APFC. The study comes at a time of tremendous change in the region, with ever-increasing demands and expectations being placed on forests and forestry by society and new opportunities emerging for financing forest management. It is hoped that this study will serve the needs of all concerned in working to attract investment resources needed to realize the full environmental and economic potential of the region’s forests.



**Hiroyuki Konuma**  
Assistant Director-General and FAO Regional Representative for Asia and the Pacific



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# Growing green assets: Removing constraints to private sector investment in forestry in Asia and the Pacific

Thomas Enters,<sup>1</sup> Lisa Kelley,<sup>2</sup> Michael Pescott<sup>3</sup> and Patrick Durst<sup>4</sup>

## Introduction

The prospects for attracting investments in forestry would seem to be exceedingly bright: society is increasingly acknowledging the multiple benefits and functions of forests; demand for forest products is expanding rapidly; and institutional investors are seeking investment opportunities for the billions of US dollars amassed in their funds. So why is there not more private-sector investment in forestry in the Asia-Pacific region, especially in developing countries? Why is it that investors continue to favour North America, Australia, New Zealand, Latin America and the European Union in their forestry-related investment decisions? And why are domestic investors in Asia-Pacific countries largely avoiding the forestry sector?

These questions have received significant attention over the past several years, especially from public sector forestry agencies, whose budgets in many countries are insufficient to support sound forest management. In assessing these questions, many public sector officials and external analysts have concluded that understanding of investment constraints and the nature of enabling environments for investment in forestry remains inadequate.

In an effort to remedy this apparent lack of understanding, the Asia-Pacific Forestry Commission (APFC) requested the Food and Agriculture Organization of the United Nations (FAO) to coordinate a regional policy study of the factors influencing private sector investments in forestry and opportunities for removing unnecessary constraints. The APFC particularly “urged member countries to review policies and regulation, with the aim of removing unnecessary constraints to private-sector investment” (FAO 2006, p. 6). The nine country studies and this regional analysis are the result of that policy study.

This overview chapter sets the scene by providing the background and context as it relates to the purpose of the regional study. It also includes a synthesis of the most salient themes and key messages revealed in the country case studies. The structure of this synthesis follows that of the country studies, specifically outlining:

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<sup>1</sup> Manager, Regional and Country Analysis and Support at RECOFTC – The Center for People and Forests, Bangkok, Thailand.

<sup>2</sup> Research Associate, Regional and Country Analysis and Support at RECOFTC – The Center for People and Forests, Bangkok, Thailand.

<sup>3</sup> Forestry Consultant, FAO Regional Office for Asia and the Pacific.

<sup>4</sup> Senior Forestry Officer, FAO Regional Office for Asia and the Pacific.

- Patterns of resource ownership in the forest and forest product processing sectors and key players in forest management and wood processing;
- Broad constraints deterring private sector investments;
- Analyses of legislative (including policies, regulations, bureaucratic procedures, etc.) and non-legislative constraints; and
- Suggestions for removing or reducing these constraints.

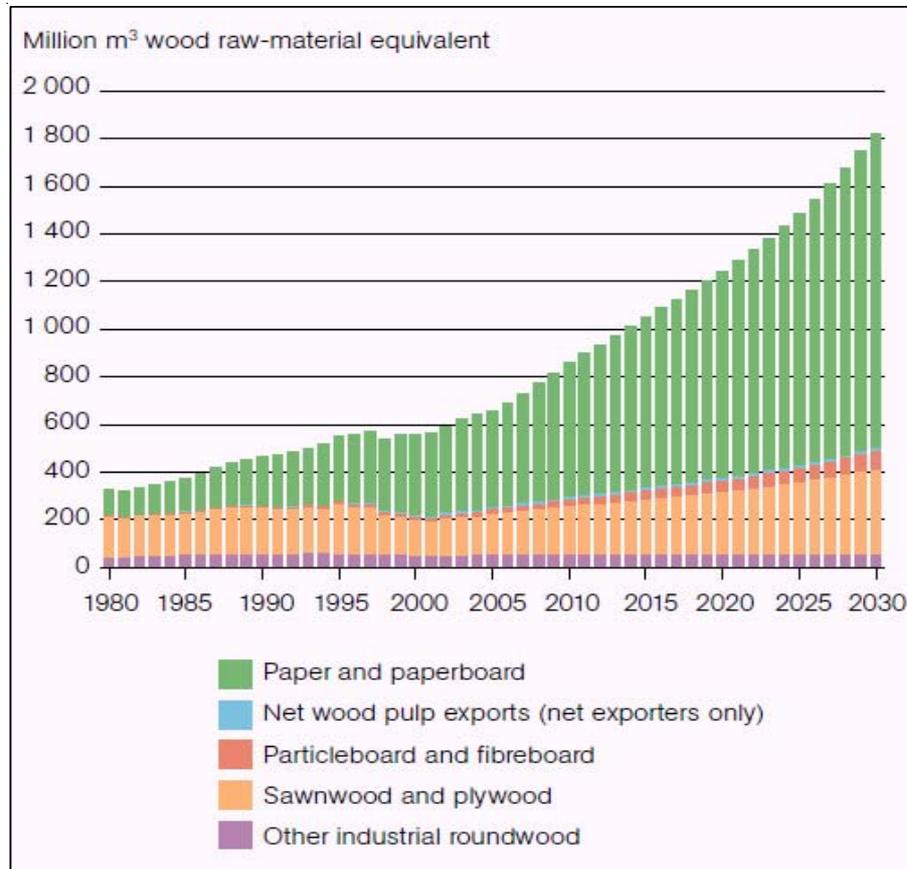
## **Key trends related to forestry sector investment: study background**

The region's forestry sector is currently undergoing vast and rapid change as a result of increasing demands for forest products and environmental services. This increased demand comes on the heels of over 20 years of forestry sector expansion with respect to employment, processing and trade. In Asia and the Pacific, this expansion was aided by many factors, including an abundance of cheap labour, relatively abundant forest resources, high rates of economic growth, specific policies to encourage development and investment in the sector and general improvements in the investment climate (Lebedys 2008). While some of these factors may not continue at the same pace as in the past, the overall trends encouraging investment and expansion in forestry are expected to continue into the future.

FAO (2009) estimates the overall demand for forest products in Asia and the Pacific will double by 2030 (Figure 1). While data clearly indicate the steady increases in the production of wood-based products over the past three decades, it is important to note that this expansion has not been evenly distributed across the region, and in many countries the increased production has occurred as a result of unsustainable forest management and destruction of natural forests in particular. With regional demand set to increase even more rapidly in the future, there will be a critical need for more investments in forest plantations and more intensive management of all types of forests.

Coupled with the escalating demand for forest products overall, recent years have witnessed increasing market and consumer interest in 'green' wood (i.e., wood certified as being produced under sustainable management regimes). For the most part, this interest has not yet translated into significant price premiums for producers of forest products. On the contrary, there is some evidence that consumer preferences for low-priced forest products have even served as a driving force for illegal harvesting and trade of timber and wood products in many countries. It has been estimated that illegal logging depresses world prices for timber products by 7-16 percent (Jenkins 2006). Nonetheless, recent progress in combating illegal logging and associated trade of forest products – combined with slowly changing consumer preferences – provide hope for greater rewards to accrue to investors in sustainable forestry operations.

While prospective returns to reputable forest investors are encouraging in many respects, investors are increasingly being squeezed by the high opportunity costs for forest land (Whiteman 2006). Escalating food and energy prices in recent years have provided strong incentives to clear forest land for agriculture and bioenergy feedstock production.



**Figure 1. Estimated wood raw-material demand in Asia and the Pacific**

Source: FAO (2009).

As Dijk and Savenije (2009, p. 27) put simply, “When forests do not have a high enough financial value or an opportunity cost satisfactory to the producer, they tend to disappear!” The immediate comparative advantage of oil-palm and alternative agrofuel plantations explains the reluctance to put money into wood and fibre production.

Interestingly, growing global concerns about deforestation and greater recognition of the multiple benefits of forests have resulted in the emergence of new mechanisms for investing in forestry and new expectations of greater financial returns from forest management and protection.

Currently, most discussions of forest-related environmental services are focused on climate change mitigation. Commanding particular attention are efforts to reduce greenhouse gas emissions resulting from deforestation and forest degradation. Large sums of money may potentially flow under the Reduced Emissions from Deforestation and Degradation (REDD) mechanisms (RECOFTC 2010).

Carbon financing is only one area of potential investment in forest-related environmental services, however. In recent years, various initiatives have emerged to facilitate payments for environmental services (PES), including those related to water, biodiversity and landscape protection (see Box 1). Although the scale of payments for environmental services is still miniscule in comparison with traditional investments in the forestry sector (for plantation development, forest harvesting or wood processing, for example), early experience has already demonstrated that many of the same factors that have constrained private sector investment in traditional forestry activities are also likely to hinder PES where unfavourable investment climates prevail.

**Box 1. Payment for environmental service schemes: are conservation and sustainable forest management viable investment opportunities?**

The environmental services that forests provide are becoming increasingly scarce and highly demanded goods. By extension, the environmental services of forests are becoming increasingly valuable. Individuals and organizations that benefit from environmental services are increasingly interested in securing these benefits through “direct, contractual and conditional payments to local landholders and users” in return for environmentally sound stewardship (Wunder 2005). Though the services considered in payments for environmental services (PES) systems vary, four key services stand out:

- Carbon sequestration and storage;
- Biodiversity protection;
- Watershed protection;
- Landscape protection, as for ecotourism or recreation.

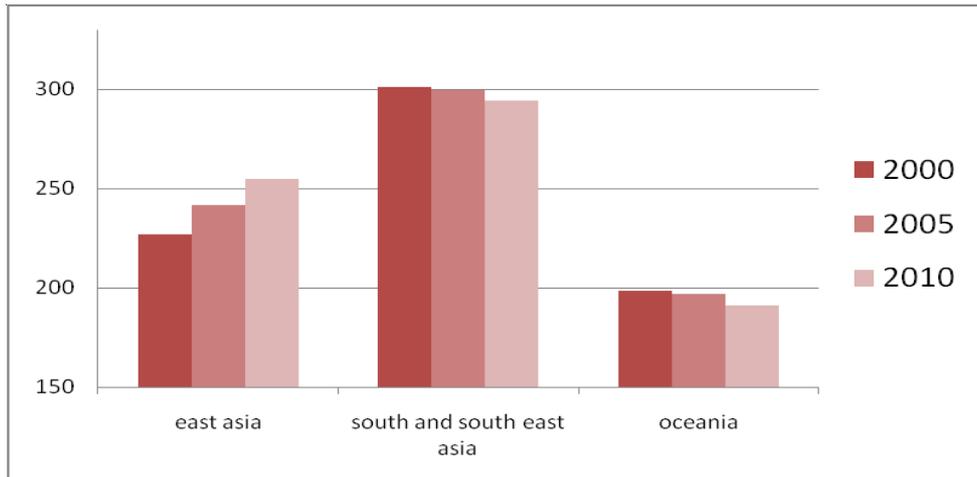
Advocates of PES systems propose that they are a means of achieving conservation victories – victories that benefit buyers, sellers and the resources being sustainably managed. Detractors, however, worry that powerful interests may be able to dominate and control the negotiations and agreements, prohibiting communities from realizing their aspirations for the land, or degrading culturally rooted conservation values in the process of making conservation profitable.

## **Who owns and manages Asia-Pacific forests?**

### ***Forest status***

Forests in Asia and the Pacific cover about 740 million hectares and 26 percent of the land area, accounting for about one-fifth of the global forest estate (FAO 2010). Although net forest area declined annually at a pace of around 700 000 hectares in the 1990s, an estimated gain of some 1.4 million hectares per year was recorded between 2000 and 2010 (Figure 2). Much of this growth was driven by China’s ambitious plantation establishment programme, a development that masks the simultaneous and widespread deforestation occurring in several other countries. In fact, rural poverty, weak law enforcement, and escalating demand for food and agrofuels continue to drive forest destruction at a high rate in many countries.

A second important caveat is extensive forest degradation in the region. An indication of this is that despite the fact that forest area in the region has been increasing overall, forest carbon stocks have actually been decreasing. Many areas that meet the formal definition of ‘forest’ actually have few trees or very low-quality forests. These forests would need to be restored before they would be capable of providing a full range of environmental services or marketable forest products.



**Figure 2. Forest change by subregion, 2000-2010 (million ha)**

Source: FAO (2010).

### ***Who owns the forests?***

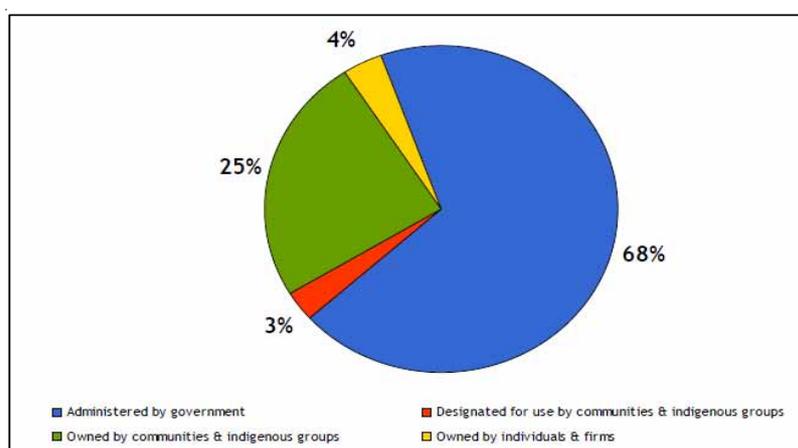
Lack of ownership clarity is a key investment constraint. Who owns the forests – and/or the land they are growing on – is a straightforward question that is often difficult to answer with great confidence in the Asia-Pacific region. Large areas are contested and local people are often unaware that ‘their’ forest is actually classified as state-owned forest according to statutory laws. Investors face similar ambiguity. What many investors believe is land or forest available for investments (under lease from the state), may turn out to be contested by local communities or indigenous peoples.

In Asia and the Pacific, states (i.e., governments) lay claim to about 68 percent of all forests (Figure 3), although there is considerable variation among countries (RRI and ITTO 2009) and figures vary depending on definition. FAO (2010) puts public ownership of forest at about 82 percent for Asia, 62 percent for Oceania and about 80 percent globally, but also notes that ownership and management of forests by communities, individuals and private companies is on the rise.

The magnitude of land owned by any one individual owner varies among countries. In India, for instance, a ceiling on agricultural, private forest and forest plantation landholdings restricts large-scale land ownership, and therefore private forest ownership as well (GOI 2007). In contrast, in some countries (e.g., Cambodia), companies have been able to gain access to large land concessions of more than 10 000 hectares.

Within the private sector, ownership is also changing shape. Though a particular parcel of forest may continue to be owned privately, the actual ownership papers are changing hands. One of the most prominent developments in this regard has been the role that Timber Industry Management Organizations (TIMOs) have come to play in acquiring divested forest assets from companies wishing to reduce company debt, respond to poor shareholder returns and diversify wood supplies. This is especially the case in countries with a longer history of investment in forestry such as Australia, New Zealand and the United States.

Increasing interest by institutional investors (e.g., pension funds, family trusts, university endowments and insurance companies) in forestry may indicate that TIMOs will come to play a similar role in Asia and the Pacific as forest governance in the region strengthens and as TIMOs themselves become more global in scope. There are risks associated with these approaches and examples of collapsed markets after a period of rapid increase (see the MIS schemes in the Australia country study).



**Figure 3. Ownership of forests in Asia and the Pacific**

Source: RRI and ITTO (2009).<sup>5</sup>

### ***Who manages the forest?***

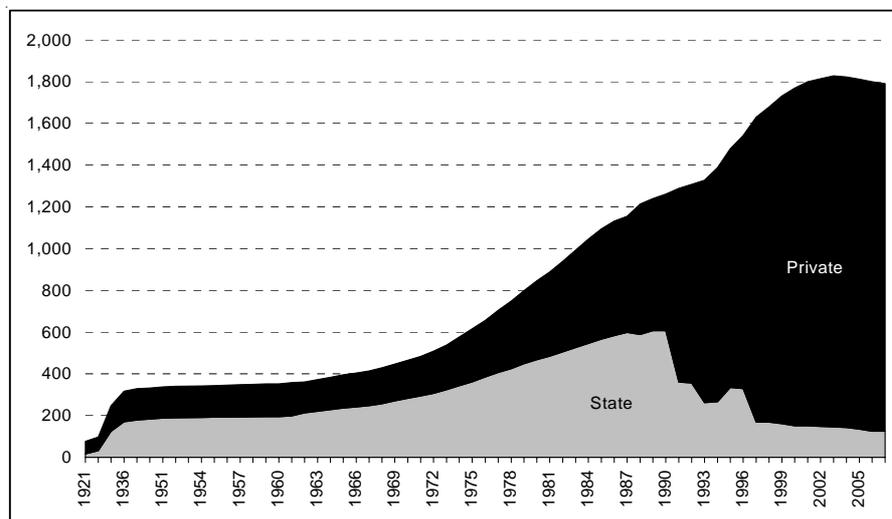
Private firms, communities and individuals operate in a context of heavy state ownership of forests in Asia and the Pacific. Just 4 percent of the forest in the region is owned by individuals or firms (Figure 3), though this number masks the full scope of the role the private sector plays. Forest industries continue to be main actors in forest harvesting and have obtained forest management licences for large areas of the state forest estate. For example, as of 2007, 21 percent of Cambodian land had been granted as forest concessions (STAR 2007; quoted in RRI and ITTO 2009).<sup>6</sup>

<sup>5</sup> Note from RRI and ITTO: "Eight complete cases: China, Australia, Indonesia, India, Myanmar, PNG, Thailand, and Cambodia"; *account for 82% of tropical forest in Asia and the Pacific.*

<sup>6</sup> Due to a logging moratorium, imposed in 2001, the concessions are currently not active.

Intimately linked to the question of who owns the forest is the question, *Who will own the forest?* The trend is toward more limited roles for states in forest management. In 2008, only 73 percent of the global forest estate was owned or administered by states, compared with 80 percent in 2002. This increase represents a continuation of a longer term trend (RRI and ITTO 2009).

Though these numbers relate to global trends, they reflect similar trends in the Asia-Pacific region. In some cases, the shift has been dramatic. In New Zealand, for example, the government announced its intention in 1987 to privatize plantation forest assets as a way to help pay off overseas debt. Consequently, ownership roles reversed rapidly (Figure 4). In China, the shift has been less dramatic, but gradually, extensive land plots and forests are coming under private management and ownership.



**Figure 4. State versus private planted forest ownership in New Zealand (thousands of hectares)**

Source: MAF (2008; quoted in New Zealand case study).

By 2008, the area allocated for use and management to local communities and indigenous people in Asia had increased by 45 percent relative to 2002 levels (RRI 2009). While this development is encouraging, most of the forests that have been handed over are degraded, requiring considerable investment which new 'managers' often cannot afford. In addition, while one aim of devolved forest management is to contribute to poverty reduction, available evidence indicates that this potential has been largely unrealized. Despite forest policy and rights reforms, investments remain inadequate (Enters *et al.* 2009).

Even where people are constitutionally endowed with property rights over the forests they live in, they may become victims of government-led processes of allocating forests to industrial timber concessionaires. This is frequently the case in Papua New Guinea where there has frequently been failure to obtain free, prior and informed consent from communities before logging.

### **Box 2. The global economic crisis: what does it mean for an already risky sector?**

The full scope of the global economic crisis was first realized in late 2008, but many of its root causes are still being resolved and its impacts endure. The immediate result was fewer sources for financing debt and higher price tags on debt. Governments in many countries have vigorously used monetary and fiscal policies to attenuate the downturn in economic activities and it appears that Asia may come out of the crisis before other regions.

The crisis has affected all economic sectors. It has strong implications for the forestry sector, which intrinsically involves high expenditures up-front and a long wait for returns. The exports of many timber and timber products sharply declined in 2009 in comparison with 2008. Forest product prices continue to fall, and the housing market in major consumer countries is only slowly turning the corner.

Exacerbating the basic scenario of high costs for debt and trouble obtaining debt financing in recent years have been the high price of oil and the consequent boom in shipping and trade costs, though the latter have declined from 2008 highs. How governments will fully respond to settle reactive and capricious exchange rates remains to be seen; yet, the immediate impact of volatility will be to increase the comparative advantage of the forest products trade in some countries and decrease it in others. Taking a longer-view of the situation, investors may meet the uncertainty by waiting for a more stable situation to invest.

However, it is not all doom and gloom. Large institutional investors like pension schemes and unit trusts have been underestimating risk for many investments in recent years. They were particularly hard hit by the economic crisis and rapidly declining values of equities. Forestry has demonstrated its ability to reduce portfolio risk while maintaining returns (Lacey 2009). Investing in timber is growing steadily among European pension funds (especially Northern European countries), with some funds now making it an integral part of their alternatives portfolios. While it remains a fringe asset to a sizeable portion of schemes, timber's performance, despite the financial crisis, has caught some serious attention. Large institutional investors like United States pension schemes and unit trusts have also been including forestry in their portfolios for many years. For example, Harvard University has invested 12 percent of its total endowment funds in timber.

### **Main constraints to investment in the forestry sector**

Various factors – from restricting the stake that foreign investors can make in specific sectors and poor infrastructure, to high energy costs and outdated or obsolete policies – continue to constrain investment in the forestry sector. In some cases, these constraints provide the environmental and social safeguards required for sound forest management. They therefore could be viewed as necessary. In others, however, they have been harmful, discouraging or barring quality investments that could take place for the benefit of both investors and countries, as well as for their people and forests. In such cases, they should be viewed as unnecessary and counterproductive.

One somewhat pernicious perception is that the shortage of funds is the sole constraint to investment in forestry. As a result, considerable resources and time are spent both in attracting funding, particularly from the donor community, and in offering direct – sometimes costly – incentive schemes. However, past experiences suggest the answer lies beyond this. Successful efforts to attract investment have demonstrated the crucial importance of indirect incentives, enabling conditions and a favourable business climate (Chipeta and Joshi 2001; Enters *et al.* 2004). Many investors shy away from natural forests regardless of the quality of the forest investment opportunity because of the overall poor investment climates in countries (Jenkins 2006) or because of the risk of negative publicity. Investors from the northern hemisphere, for instance, are quick to distance themselves from activities that can be perceived as contributing to the destruction of tropical rain forests, and insist that their operations are or will be certified.

Published reviews on forest industries ratings around the world have been made available in recent years; nevertheless, international investors are regularly faced with a dilemma when choosing investment options in forestry (Neilson 2009). Though modest returns can be obtained from safer options, higher potential returns may be obtained from investments in politically less stable countries or in species with controversial images (e.g., *Eucalyptus*).

Yet understanding the constraints to investment is the first step in stimulating investment (i.e., eliminating constraints *is* an incentive). The following country summaries provide an overview of forest use, ownership patterns and key constraints as a means of leading into a larger and more general discussion of common constraints to investment.

### **Australia**

Australia's forest sector comprises some 164 million hectares, with plantations making up slightly more than 1 percent of the forest area.<sup>7</sup> The wood-processing industries are heavily dependent on plantations, with 1.97 million hectares of plantations producing 70 percent of Australia's commercial timber and pulpwood supply. There are around 1 140 mills, with 75 percent producing high-value, small-volume hardwood products. The remaining 25 percent are softwood mills, many at world-scale level of production, producing timber mainly for structural manufacturing.

The country's plantations are largely privately owned following large-scale privatization in the late 1990s. Private ownership is diverse in structure (Table 1), and one of the most recent developments has been the widespread involvement of Managed Investment Scheme (MIS) companies. MIS forest companies are investors with shorter term interests in investing, which generally invest in forestry for the sake of tax minimization. For this reason, MIS forest companies generally prefer pulpwood rotations to sawlogs. In 2008, MIS plantations accounted for 34 percent of Australia's forest plantation estate (Gavran and Parsons 2009, cited in Ajani 2010). Many believe that MIS schemes are responsible for high

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<sup>7</sup> See <http://www.dfat.gov.au/facts/forests.html>

land prices, but other extenuating factors are at play, including changes in rural land use, farm amalgamation and urban encroachment.

**Table 1. Ownership of Australia's plantations (2006)**

<b>Plantation ownership scheme</b>	<b>Percentage stake</b>
State	35
Managed Investment Schemes	26
Superannuation fund	12
Timber industry	15
Other private ownership	12
<b>Total</b>	<b>100</b>

While domestic forestry production is significant, Australia nonetheless has a trade deficit in forest products, mostly due to high imports of pulp and paper. Perhaps as much as anywhere, environmental factors influence investment in Australia's forestry sector: fire is a catastrophic risk not addressed by insurance, and Australia is currently experiencing its worst drought in 100 years.

**Key constraints:**

- Environmental risks, especially due to fires;
- Concern over plantations' impact on water availability; and
- Negative public image created largely by opposition to the export of native forest woodchips.

***Cambodia***

Cambodia's forests – many of them considerably degraded – cover nearly 60 percent of the land, or 10.7 million hectares. By 1997, over half of all forest land in Cambodia was licensed to 30 companies, covering about 6.5 million hectares. Illegal logging was widespread and in 1997 an estimated 4 million m<sup>3</sup> of timber – eight times the total sustainable yield – were illicitly extracted. Decades of illegal logging and exploitative concession management have taken their toll. There is also high local reliance on forest resources. Though the state technically owns 100 percent of forests, most local people participate in resin-tapping, charcoal manufacture or logging, whether illegal or legal.

The future of the Cambodian forest estate is uncertain. Much forest use is conducted without either a strategic management plan or consultation with the local people living on or near the land. As a result, the forest estate is at risk from intense and unsustainable exploitation. In December 2001, the government imposed a logging moratorium until new concession management plans (consistent with related legislation) can be approved.

Community forestry has received a boost in recent years. The government endorsement of the Sub-Decree on Community Forestry Management in 2003 was a milestone in the establishment of community forestry. For the first time, communities were legally allowed to request a community forest agreement in order to manage forests for 15 years.

The promulgation of the Guideline on Community Forestry and its Relevant Policies (*Prakas*) in 2006 marked a further milestone. The *Prakas* clearly define and outline the operational steps communities must take in order to secure a forest management agreement and gain approval of their community forestry management plans. As of February 2010, there were 420 community forests covering about 0.4 million hectares.<sup>8</sup> However, only 128 sites (covering 145 500 hectares) have been officially approved by the Ministry of Agriculture, Forestry and Fisheries (MAFF) and community forestry agreements have been prepared for only 94 sites (covering 113 500 hectares).

Private investment has also been heavily engaged via Economic Land Concessions (ELCs). These ELCs, before being placed on hold from 2003 to 2006, were granted to nearly 100 investors with a total area of over 1.2 million hectares and resulted in considerable conflict with local communities. In 2009, for instance, there were 792 recorded land disputes in Cambodia, many of which turned violent (NGO Forum on Cambodia 2009). In theory, community forestry claims are somewhat protected even before full approval. Under Cambodia's Land Law, Article 23, non-traditional management forms (e.g., an ELC) are not allowed before community registration and land titling is completed. However, in practice this means little and there are cases where communities lose 'their' forests before the lengthy and complex registration and approval process can be completed (Blomley *et al.* 2010). Nonetheless, it substantiates many community claims in opposition of investment.

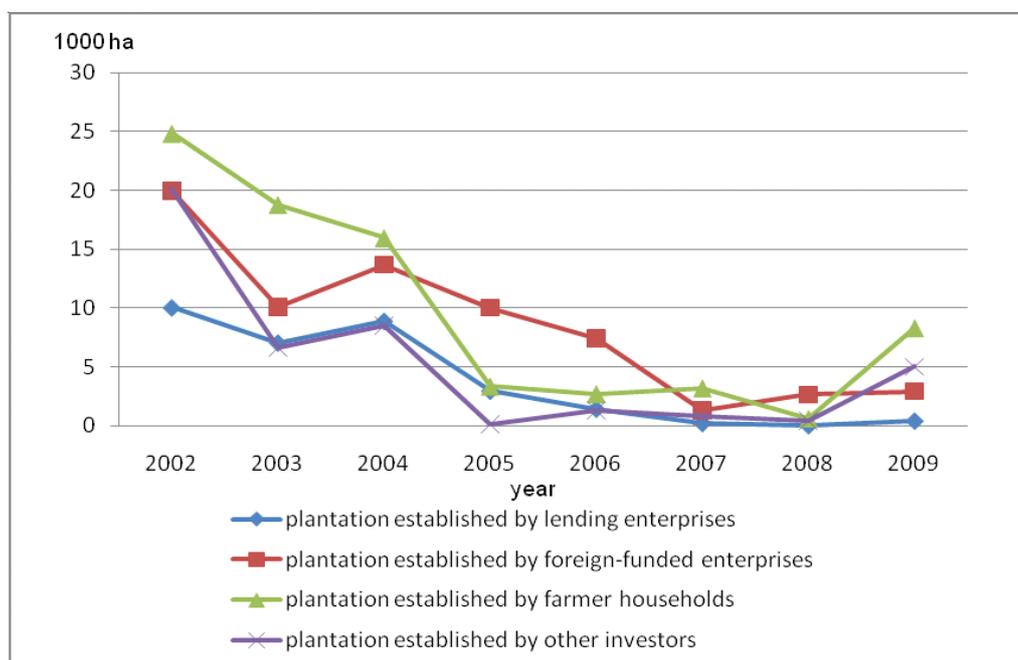
### Key constraints:

- Political and economic instability;
- Confusing or unclear regulations for foreign investors;
- Poor coordination among government ministries, in particular the Ministry of Land Management, Urban Planning and Construction (in charge of granting economic land concessions) and MAFF (approving community forests);
- Conflicts with local communities already occupying lands identified for, or granted to, forest concessions;
- Unclear, complex and lengthy procedures for starting a land-based business;
- Weak legal frameworks governing the management of forests and forest resources; and
- Inadequate transparency and accountability in governance.

### China

As of 2006, the total forest area in China was 174.9 million hectares, 53.6 million hectares of which were plantation forests (State Forestry Administration 2007). More than 60 percent of the forest is owned and managed publicly, but private ownership and management is diverse and increasing. Plantation forests are being expanded rapidly under various national initiatives, in part to meet high domestic demand for timber products (Figure 5). Regardless, it is estimated that even if the forest sector expands to produce more than 300 million m<sup>3</sup> of commercial timber by 2020 (up from 66.1 million m<sup>3</sup> in 2006), there will still be a gap of 150-170 million m<sup>3</sup> between supply and demand. As well as the rapid establishment of plantations for commercial purposes, forests are increasingly set aside for nature reserves and nature reserves, which encompassed 12.5 percent of all land by 2006 (FAO 2009a).

<sup>8</sup> Data from the Forestry Administration's community forestry database (February 2010).



**Figure 5. Afforestation established by non-public investors under the Program on the Development of Fast-growing and High-Yielding Timber Forest Base between 2002 and 2009**

A series of reforms have stimulated private sector investment in China, beginning with the 1992 Decision on Several Issues Relating to the Development of Socialist Market Economy that marked the movement from a planned commodity economy to a socialist market economy. Specifically, this move allowed for land to be auctioned to entrepreneurs or farmers. Since then, further reforms have provided a formal legal guarantee for forest investments and, following this, have worked to strengthen this guarantee.<sup>9</sup> Provincial governments and authorities have also developed more specific preferential policies to encourage investment.

As suggested by the reforms, a longstanding constraint to investment in forestry in China is the lack of clarity and security in land use and ownership rights. A second major factor has been burdensome taxes or fees, which, taken collectively, have “made timber forest management basically profitless” in many areas (China case study). Though some of these taxes have been annulled and some subsidies have been provided at the provincial level, taxes and fees nonetheless reduce the comparative advantage of using the land for forestry. Finally, financing and loans are generally restricted and hard to obtain given the perceived risks in

<sup>9</sup> The Forest Law of the People’s Republic of China, 1998; The Resolution on Accelerating Forest Development, 2003; Comments on Encouraging, Supporting, and Guiding the Development of Non-public Economic Bodies like Individual and Private Entrepreneurs, 2005; Comments on Promoting Collective Forest Tenure Reform All Around, 2008.

forest management. These challenges add to poor infrastructure and frequent natural disasters.

### **Key constraints:**

- Incomplete and inadequate forest use rights, especially for small- and medium-sized enterprises;
- Lack of financing and insurance mechanisms;
- Burdensome taxes and user fees;
- Poor infrastructure;
- Frequent natural disasters; and
- Lack of effective laws and regulations governing foreign capital investments.

### **India**

Forest cover in India is around 69.1 million hectares, or some 21 percent of the total land area (FSI 2009). Although forest cover is slowly increasing, degradation remains a problem, due to high population levels and high dependence on grazing and fuelwood collection. Some 53 percent of forests is affected by fire. Around 78 percent is overgrazed and 74 percent does not adequately regenerate. The forest plantation area in India is 32.57 million hectares, which accounts for 17 percent of the global forest plantation and is the second largest in the world, after China (MEF 2009).

Forests in India are mostly state-owned (85 percent), with a ceiling on ownership holdings that restricts large-scale private ownership (GOI 2007). The key players in producing and processing forest products are small-scale forest enterprises, and 75 percent of the income these enterprises gross is not from timber, but from non-wood forest products (NWFPs) (MoF 2009). The 2006 Forest Rights Act provides for a series of rights to scheduled tribes and other traditional forest-dwelling communities to forest land. These rights include more decision-making power over natural resource management. The area to be transferred to communities and households is still to be determined. Estimates are up to 10 million hectares.

### **Key constraints:**

- Burdensome and complex regulations (e.g., Land Ceiling Act, and felling and transit rules);
- Lengthy permit approval processes;
- Poor infrastructure;
- Unclear or contested forest tenure and incomplete boundary demarcation of private lands;
- High incidence of fires; and
- Overregulation in minor forestry operations such as tree felling, transit and sale permission processes.

### **Indonesia**

Nearly 40 percent of the forest area in Indonesia has been lost in the past 50 years, and today forests cover at most about 94 million hectares (MoF 2009). The high deforestation rate is a

result of poor forest management, forest fires, illegal logging and widespread land-use conversion. Development has occurred so rapidly, indeed, that in the late 1990s, the operational capacity of pulp mills outstripped the development of pulpwood plantations. As a result, wood for many mills was supplied by illegal harvesting operations.

Economic and regulatory uncertainty, deficiencies in law enforcement, red tape, weak governance and infrastructure bottlenecks are among the main barriers to entrepreneurship and constrain investments in all sectors. Indonesia's ranking in international indicators of perceived corruption also suggests that there is significant room for improvement in that area (OECD 2008).

Conflict over land and forests is widespread in Indonesia and seriously constrains investment by contributing to a generally unstable investment climate as well as raising the costs of production. Moreover, regulations are not uniform: While in some districts, clear and strategic regulations guide production, in other districts, regulations are unclear or out of date. Finally, the volatility of the rupiah has been of concern to investors since 1997.

On the other hand, the Government of Indonesia has been making serious efforts in recent years to improve the investment climate as part of its plan to enhance growth, create jobs and reduce poverty. Improvements include the drafting of a new investment law, reforms in taxation and customs, reforms in licensing procedures and a wide-ranging public debate about potential reforms. The World Bank (2008) observed that although Indonesia has continuing weakness in several key areas, its investment climate continues to improve.

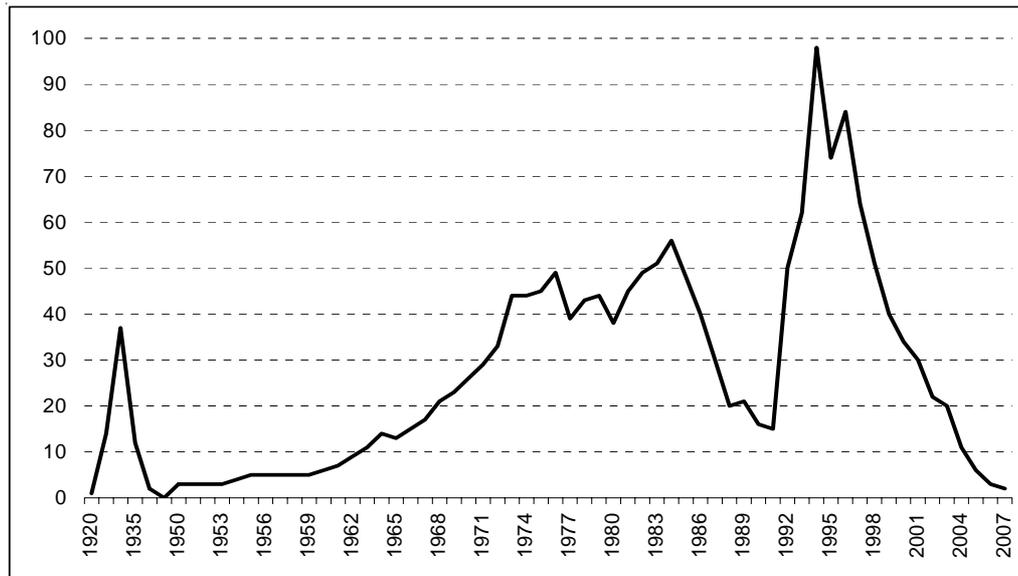
### **Key constraints:**

- Economic and regulatory uncertainty;
- Poor infrastructure;
- Deficiencies in law enforcement and weak governance;
- Conflicts over land and concessionaire rights (particularly in forest areas);
- Currency instability;
- Complex, conflicting and costly procedures for starting a business;
- High unofficial taxes and charges;
- Inadequate government transparency and accountability;
- Lack of consistency between central and provincial laws and policies; and
- Gap between vision and implementation.

### ***New Zealand***

There are nearly 8 million hectares of forest in New Zealand, of which roughly one-quarter are planted forests. Prior to the late 1980s, most of New Zealand's planted forests were publicly owned. Since then, most have become privately owned following a government decision to privatize public assets in 1987. Within the private sector, forest assets are increasingly being divested to TIMOs to separate forest operations from processing. This movement represents an attempt to reduce company debt as well as to diversify and secure longer term wood supply. Currently, TIMOs own some 40 percent of New Zealand's plantation forests. Juxtaposing this development has been an increase in small-scale growers. This latter development may have future implications for processors' ability to

consolidate supply. Growers have lengthened forest rotations to create higher quality products, and replanting and new planting have both dramatically declined as other land uses offer higher returns and less risk (Figure 6). Wood-processing investments have been geared towards expanding and upgrading existing facilities and towards consolidating fewer and larger mills.



**Figure 6. History of new planting in New Zealand (thousands of hectares)**

Source: MAF (2008c).

The Resource Management Act 1991 (RMA) provides a basis for environmental management and general land-use planning. It requires the preparation of district council plans and regional council policy statements and, if necessary, regional plans. District plans typically cover issues relating to land-use impacts, effects of activities on rivers and lakes and noise. Regional plans are usually developed to regulate discharges of contaminants, water quality and quantity, coastal marine areas and soil conservation.

The overarching legislation and intent of the RMA are generally regarded by the forestry and wood-processing sectors to be good. However, major problems in how it is implemented have led many to regard it as the single biggest impediment to the development of processing investment; some companies view RMA processes as a significant cost and risk.

New Zealand's living standards remain well below the Organisation for Economic Co-Operation and Development (OECD) average. This is primarily attributable to persistently low labour productivity, economic geography and structural policy factors. The country's small size and remoteness diminish its access to world markets, the scale and efficiency of domestic businesses, the level of competition and proximity to the world's technology frontier (OECD 2009). These factors constrain investments in general and more specifically in the forestry sector.

### **Key constraints:**

- Fluctuating exchange rates;
- Current narrow range of markets for New Zealand's forest products;
- Potential labour shortages in the future;
- High prices for electricity and gas impacting pulp and paper producers;
- Unfavourable geographic location relative to major markets; and
- Implementation of the RMA – high costs of obtaining resource-use consent and complying with the act.

### ***Philippines***

Forests cover roughly 20 percent of all land area, or 7.12 million hectares, of which roughly 330 000 hectares are plantations (FMB 2009). Until recently, deforestation was a pervasive problem. The state owns 100 percent of the forest land but can enter into co-production, joint ventures or production-sharing agreements with Filipino citizens, corporations or associations. It utilizes various tenure instruments to devolve management responsibilities. Nonetheless, the government plays a key role not only in forest management but also in wood processing and trade. This role is exercised mainly via policy and regulation, stemming from the state's inherent power to supervise all development and use of lands in the public domain.

Important factors that constrain investment are a Constitutional provision that restricts foreign ownership of businesses to only 40 percent; overregulation and complex procedures; and frequent policy changes without adequate public consultation.

### **Key constraints:**

- Frequent and arbitrary policy changes;
- Burdensome regulations;
- Complex procedures for starting businesses, including wood-processing plants;
- Inadequate infrastructure outside major economic zones and cities;
- A slow judicial system;
- Inadequate transparency and accountability within the government;
- Land shortages due to increased competition with agricultural and agrifuel crops;
- Frequent typhoons; and
- Lack of clear land tenure, including competing land claims.

### ***United States***

The United States has the fourth-largest forest estate in the world, with 304 million hectares of forested land. The private sector owns the majority of this land, or 170 million hectares. Private forest lands are managed for diverse purposes, with an emphasis on wood production. Private lands contribute 92 percent of all wood harvested in the United States and the country is the world's largest producer of pulp, paper and paperboard products.

Although publicly-owned lands were historically managed for wood production, federal-, state- and local government-managed lands are now mostly managed for recreation and

biodiversity protection. This reflects a deliberate shift that occurred in response to growing environmental awareness. Forest policy reflects an attempt to balance private and public interests; to foster investment in private forest management while simultaneously protecting the environmental services forests provide. For instance, forest policy is designed to protect forests from wildfire, insects and disease and this risk-shield historically and currently acts to strongly encourage private sector investment in forest management.

In the past, solid wood products manufacturing firms and paper companies were significant forest owners. Since the mid-1990s, integrated forest product companies (industrial landowners) have sold most of their land and these large-scale forest ownerships have been restructured into TIMOs or Real Estate Investment Trusts (REITs), which are primarily managers and holders of forests for institutional investors. This shift occurred, in part, due to changes in the tax code that are unfavourable toward integrated forest product industry ownership of timberland (by taxing both stumpage revenues and corporate dividends) and provide favourable tax treatment to the new institutional owners – TIMOs and REITs – which are not enjoyed by integrated forest product companies. Also, institutional investors were attracted to forests to diversify their holdings and because investments in forests are expected to produce competitive rates of return at low risk.

A suite of harvest regulations limits or mitigates adverse environmental or workers' health issues and addresses safety in harvest operations; it is believed that these regulations make the United States less competitive globally by driving up production costs.

### **Key constraints:**

- High labour costs;
- Complex federal and state tax codes;
- Federal tax policy that strongly discriminates against integrated forest products companies that own forest land;
- Environmental and workers' health and safety regulations that increase production costs; and
- Unreliability of sales of forest resources from federal government holdings.

### ***Viet Nam***

By the end of 2006, the forest area in Viet Nam was 12.9 million hectares (38 percent of the total land area), of which 10.4 million hectares were natural forests and 2.5 million hectares were forest plantations (FAO 2009b). Plantations have particularly contributed to an increase in forest area during the last decade. Households and individuals form the largest ownership unit (22 percent), reflecting a shift, begun in the 1990s, of increasing household and community management and decreasing state management (Ba Ngai *et al.* 2009). Under the Land Law (2003) households have the right to sell land-use rights, though not the land itself.

The export market is booming, with wood products ranking fourth among all export products of Viet Nam in terms of value; export turnover of wood products is more than US\$2.5 billion. Despite this success, there is evidence that the wood products industry is partially supplied by illegal logs from Lao PDR and Cambodia, and this industry may actually be contributing to the deforestation and forest degradation occurring in those countries (EIA and Telepak 2008).

The main constraint faced by companies and other stakeholders is accessibility to land for forest plantations and processing operations. Where it is possible to obtain land-use rights, the plots are generally small and fragmented. Forest and land allocation to local people and other economic entities has been progressing slowly and guidelines and procedures for this process need improvement. Provincial Peoples' Committees have agreed to assist, but it is difficult to secure unallocated land. Even if a company has government support and access to capital, access to land remains a problem. Also, procedures and requirements may vary among provinces despite the clarity of government policies in terms of applying regulations and policies. This creates uncertainty and increases transaction costs for investors.

### **Key constraints:**

- Land availability (consolidation and accumulation) and restrictions on land-use rights especially for private business and foreign investors;
- Uncertainty over the interpretation and application of policies and regulations at provincial levels;
- Lack of infrastructure and production materials.

### **Common constraints to investment in Asia and the Pacific**

The Asia-Pacific region is widely hailed as a development success story. Indeed, development in the region, particularly in China and India, has helped to drive global growth over the last two decades. Though the vast and heterogeneous region contains some of the world's smallest and poorest economies, it also includes some of the world's largest and richest. Underlying this diversity of scale is extensive diversity in natural, financial and human capital. This diversity, more than anything, makes identifying common constraints to private sector investment particularly difficult.

All countries can learn from each other. However, some countries face considerably fewer or smaller obstacles in doing business – in the forestry sector and elsewhere – than others. Doing business with relative ease appears to correlate with low levels of corruption, whereas high corruption may deter many investors from even analysing the potential opportunities in a particular country (Table 2). Combining the rankings of the Ease of Doing Business indicators (2010) with the Corruption Perception Index score (2009), the difference between Australia, New Zealand and the United States on one end of the spectrum, and other Asian countries is stark. Yet, even in the more developed economies, constraints remain; in some cases, new constraints emerge just as the old ones are about to be removed.

**Table 2. Business ease and corruption in selected countries<sup>10</sup>**

Country	Corruption Perception Index Ranking (2009)	Ease of Doing Business Ranking (2010)	Average ranking
New Zealand	1	2	1.5
Australia	8	9	8.5
United States	19	4	11.5
China	79	89	84
Viet Nam	120	93	106.5
India	84	133	108.5
Indonesia	111	122	116.5
Philippines	139	144	141.5
Cambodia	158	145	151.5

The forest industry is situated within the global economy and is vulnerable to fluctuations that have little to do with the forestry sector itself (e.g., the current financial crises in general and the housing crisis in numerous countries). Many constraints discussed further below cannot be addressed by one country, one producer or the forestry sector alone.

Consequently, some country officials are resigned in the belief that there is nothing they can do individually to attract private sector investment. But this is far from the truth. Experience has shown that many low-ranked countries are able to design and implement reforms that improve the ease of doing business or reduce corruption. Interestingly though, none of the countries in this study, with the exception of Indonesia, improved over the past year, according to *Doing business 2010*.

General constraints that make investments more risky fall into two broad categories. The first category comprises constraints that affect countries and all of their economic sectors as a whole and therefore need to be addressed via concerted and collaborative efforts. They include the following:<sup>11</sup>

- Distance to markets;
- Poor infrastructure development (e.g., roads, ports and communication);<sup>12</sup>
- Volatile exchange rates;
- Political and macroeconomic instability;
- Weaknesses in judicial systems;
- Restrictive foreign ownership provisions and policies on repatriation of funds;
- Corruption;<sup>13</sup>

<sup>10</sup> Lower rankings mean either corruption is lower or doing business is easier.

The Corruptions Perceptions Index Rankings rank countries based on the degree of perceived corruption among public officials. In the rankings, compiled by Transparency International, corruption is defined as “the abuse of entrusted power for private gain.”

The Ease of Doing Business Rankings, compiled by the Doing Business project, rank countries on how conducive the regulatory environment is to doing business, averaging ten separate indices on the ease of, for instance starting a business; protecting investors; trading across borders; and paying taxes.

<sup>11</sup> Note that not all the case study countries are affected by these constraints to the same extent.

<sup>12</sup> The widespread use of mobile phones in many areas has clearly improved communication and enabled tree farmers to be better informed.

<sup>13</sup> In some countries corruption is particularly widespread in the forestry sector and can also be directly tackled in these situations.

- High local labour costs (in some countries) and limited skills (in others);
- Cumbersome registration of property;
- Difficulties in obtaining credit; and
- Weak investor protection.

Where these constraints have been addressed, the investment climate is already significantly enhanced and risks reduced, although much more can nonetheless be done within the forestry sector to increase the ease of doing business and the attractiveness for investment.

The second category comprises constraints that can be addressed from within the forestry sector (either by government agencies or investors themselves). They can be divided into the three broad subcategories of governance, production and social constraints.

### **Governance constraints**

- Costly, lengthy and complex legal frameworks and bureaucratic procedures related to buying, managing, selling and investing in forest land, wood harvesting, transporting and processing (which enhances opportunities for corrupt practices);<sup>14</sup>
- Poorly defined and contested rights, which frequently trigger conflict between local communities or indigenous peoples and investors;
- Weak, missing or very difficult-to-access government incentives;
- Weak capacity and commitment to improve forest law compliance and reduce illegal forest and trade activities, as well as forest conversion;
- Inappropriate and inconsistent public policies and arbitrary changes in policies (e.g., shifting tax policies, changing carbon trading rules or resource use regulations);<sup>15</sup>
- Complex financial mechanisms and procedures for accessing credit, coupled with a lack of understanding about prices and interest rates;
- Continued dominance of the state, crowding out private sector investment;
- Poorly developed and uncertain policies and mechanisms regarding emerging markets and payments for environmental services (e.g., forest-based services such as carbon sequestration, watershed protection, etc.); and
- Lack of transparency and accountability.

### **Production and technology constraints**

- Real or perceived shortages of land available for investment;
- Poor forest product yields and weak competitiveness of trees *vis-à-vis* other agricultural crops (especially those with government subsidies);
- Weak management capacity of tree farmers and limited interest in implementing new technologies and improved practices;
- Poor infrastructure development (e.g., roads, ports and communications);
- Production risks such as pests, diseases and fire;
- Poorly targeted research and extension by the public sector (e.g., identifying optimal tree species/varieties and locations with the best growing conditions); and
- Challenges for corporate wood buyers in coordinating the activities of thousands of smallholder tree farmers.

<sup>14</sup> See Kaufmann *et al.* 2003, quoted in FAO (2005).

<sup>15</sup> It is acknowledged that expecting policies to remain static is unrealistic and that investors need to increase resilience and enhance capabilities for adapting to inevitable policy shifts.

### **Social, institutional and external constraints**

- Social complexities and traditions (e.g., unwillingness to change land use, lack of interest in changing technologies and migration leading to labour shortages);<sup>16</sup>
- Poor understanding by public sector representatives of factors affecting investors' decision-making;
- Lack of reliable, objective, transparent and up-to-date information, especially on new issues such as REDD;
- Negative perceptions of forestry and controversies over forest management (especially with regard to large-scale investments such as for large processing mills, but also in the use of 'exotics' in plantations and forest carbon financing arrangements); and
- Weak collaboration among stakeholders in discussing and formulating visions, incentive schemes, legislation and workable solutions (including free, prior and informed consent from potentially affected stakeholders).

### **How can investment constraints be removed?**

A regional policy study completed by FAO in 2004, entitled *What does it take? The role of incentives in forest plantation development in Asia and the Pacific*, concluded that providing a favourable investment climate for the private sector – such as through clear and secure resource and property rights, and coherent and stable policies – had far greater influence on investments than direct incentives (Enters *et al.* 2004). Similar conclusions have been reached by several other studies and past experiences throughout the world (Chipeta and Joshi 2001).

This current study's findings reaffirm the importance of building an enabling environment. Indeed, while the list of constraints examined in this study is long and the diversity among the countries makes it difficult to prioritize, four constraints appeared repeatedly: weak governance, especially excessive regulation; weak law enforcement; a lack of strong rights; and arbitrary changes in policies and procedures. So while the length of the full list may discourage action, the ubiquity of these certain constraints – and their link to the broader enabling environment called for in previous studies – suggests a need for urgent action at the very least on these fronts.

**Costly and time-consuming regulatory and bureaucratic burdens**, in some countries, in particular India and the Philippines, are a major factor in stifling or restricting investment. In Cambodia, investors admitted to being unable to navigate the complex procedural gambit required to obtain Economic Land Concessions.<sup>17</sup> In Thailand, on the other hand, *Eucalyptus* plantations on agricultural lands are not treated, in terms of legal regulations and incentives, as forests. Therefore, the same rules apply for *Eucalyptus* as for agricultural crops. This means that planting, harvesting, transport and marketing are not restricted by burdensome bureaucratic procedures.

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<sup>16</sup> Labour shortages in the rural areas can also stimulate investments in tree growing and plantations as they require less labour than farming agricultural crops.

<sup>17</sup> There are also examples of companies with serious investment intentions who manage to understand and follow the procedures (Daniel Mitchel, personal communication 2010).

**Weak law enforcement and corruption** are key constraints to any business and a serious concern in many Asian countries. Not only do they reduce profits, but they may ultimately lead to a complete financial loss. For example, illegal logging and trade have reduced the price for timber, which translates into a financial burden for companies that try to improve forest harvesting and trade only in ‘clean’ timber.

**Land and forest rights** are very clear in Australia, New Zealand and the United States and changes in ownership in these countries can be facilitated with relative ease. This is not the case in many Asian countries, where forest rights are often contested and land claims overlap. This lack of clarity often deters investors or leads to serious (sometimes deadly) conflicts among stakeholders.

**Arbitrary policy or procedural changes** can have serious consequences for any investors. In the Philippines, people’s organizations (POs) have to obtain resource use permits (RUPs) before harvesting can commence. Nationwide suspensions of previously approved RUPs in 1999 and 2003 led to huge financial losses for a number of POs that had not broken any rules but that were nonetheless affected by the blanket ruling (see Box 3). In 2003, the suspension caused the Ngan, Pananslan, Pagsabangan Forest Resources Development Cooperative a loss of around US\$50 000 (Pulhin *et al.* 2008).

### **Box 3. Arbitrary changes undermine the positive effects of Community-Based Forest Management in the Philippines**

The greatest blow to CBFM [Community-Based Forest Management] happened when the former DENR [Department of Environment and Natural Resources] Secretary cancelled about 1 200 of the more than 1 500 CBFMAs nationwide without due process. This was a major violation of the CBFMP provisions. Fortunately, implementation of the cancellation order was stopped by the new Secretary due to pressure from civil society and from legislators during the DENR budget hearing. However, the propensity to order wholesale cancellations remains a big threat to the sustainability of CBFM and its potential to help reduce poverty in the Philippine uplands.

Source: Dugan and Pulhin (2007), p. 44.

### **Priority recommendations**

- Reduce excessive regulatory procedures and bureaucracy related to starting and operating forestry production and processing businesses;
- Enhance accountability and transparency;
- Raise awareness among decision-makers regarding the negative impacts of complex regulations and procedures on investment decisions;
- Apply best practices in forest law enforcement and reducing illegal activities;
- Clarify and strengthen rights to land and forests, including the potential for increasing the size and duration of forest land ownership and/or use rights, as well as clearly marking and making available forest land boundaries on maps and the ground; and

- Avoid arbitrary changes and provide stable investment, land-use, land management and forestry policies, laws, procedures and approval systems to give investors in forestry the confidence to make long-term investments.

The following additional actions are recommended:

- Improve public perceptions about investments in forestry through education, better media relations and enhanced transparency in production and processing operations;
- Increase investor access to objective and up-to-date information;
- Review and, if necessary, revise policies to ensure consistency among different government institutions;
- Enhance the technical capacity of forest managers and tree farmers based on the findings of relevant research;
- Introduce favourable and clear tax policies, incentive schemes and/or subsidies to serve as a 'lever' for investment;
- Strengthen extension efforts;
- Align forestry regulations with other agricultural crops for ease of planting, harvesting, transport and marketing;
- Promote third party certification;
- Enhance the public sector's understanding of how private investors assess risks and alternative investment options, particularly during joint public policy review processes of investment climates;
- Foster linkages between farmers and corporate buyers through activities such as contract farming and outgrower schemes;
- Promote political stability via a long-term 'vision' or 'strategy' accompanied by long-term policy and implementation/work plans;
- Align forest management policy and build capacity for delivering environmental services such as carbon sequestration and storage; and
- Strengthen the judicial system to deal with illegal activity and disputes.

Making progress in removing the four top priority constraints is crucial. Even if only these issues are tackled, a more attractive investment climate in the forestry sector can be created. As long as investment risks are not reduced considerably by addressing the top four priorities, the secondary seven recommendations will not lead to measurable change. This will also be the case if the general investment climate remains unattractive because necessary reforms are not implemented.

The needs of small-scale and large-scale investors are clearly not the same. Where policies and strategies aim to foster economic development in rural areas and to reduce poverty, attention needs to be focused on small-scale tree growers and entrepreneurs. They are able to generate considerably more employment than large businesses.

Finally, it is important to recognize that many of these recommendations are not new. They have been made by others at various times before. However, it is now time to act on them if countries in Asia and the Pacific are serious about attracting greater investments in forestry. Given the growing demand for forest products and forest-related environmental services, removing these constraints makes more sense than ever.

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# Improving the investment climate for Australian forest industries

Ian Ferguson,<sup>1</sup> Lyndall Bull<sup>2</sup> and Geoff Gorrie<sup>3</sup>

*The views expressed in this paper are personal.  
They are not endorsed by the Australian  
Government nor by any of the other organizations  
with which the authors are affiliated.*

## Executive summary

The objective of this study was to identify how the investment climate in forestry in Australia might be improved. The case study deals first with the global economic crisis and then deals in turn with resource ownership, the legislative and regulatory framework for investment, government policies and incentives, other factors influencing investment and finally, providing incentives and removing constraints.

The major causes of the global economic crisis were: (1) The proliferation of collateralized debt obligations in the global financial world, especially in the United States; (2) the extent of external debt financing of investment in many developed regions; and (3) the volatility of exchange rates during the boom and bust in oil and other commodity prices. Current policies involve a major increase in public investment in infrastructure and other projects to ameliorate the loss of employment, together with various short-term measures to boost consumer spending. In the short term, the immediate consequences of the crisis are a drying up of sources for financing debt, together with higher prices for debt. The forest and forest product industry, like most others, is generally trying to reduce debt and increase equity where possible, neither being easy to achieve at this stage in the market cycle. Domestic and export markets for forest products are suffering and investment has largely been placed on hold. Nevertheless, these are cyclical effects. This paper is directed at the longer term issues relating to investment in forest industries.

Most commercial species harvested from native forests are eucalypts but small quantities of rain forest species are harvested. The commercial species cover a wide range of properties and features when converted into timber or wood-based products. Most wood supply comes from the 9.4 million hectares of state-owned forest, but the 38 million hectares of private forest are assuming greater importance as state-owned forests are progressively transferred to conservation.

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<sup>1</sup> Forest Science Consultant and Professor Emeritus of Forest Science, School of Forest & Ecosystem Science, The University of Melbourne, Parkville, Victoria 3124, Australia.

<sup>2</sup> Lecturer, Fenner School of Environment & Society, The Australian National University, Canberra, ACT 2600, Australia.

<sup>3</sup> Public Policy Consultant and former Deputy Secretary, Department of Agriculture, Fisheries and Forestry, Canberra, ACT, Australia.

Some 1.9 million hectares of plantations (55 percent softwood, 45 percent hardwood) now supply nearly 70 percent of the annual production of commercial timber and pulpwood. Some 35 percent is under state ownership, 26 percent in Managed Investment Scheme (described later) investor ownership, 12 percent in superannuation funds, 15 percent in the timber industry and 12 percent in other private ownership.

The Australian forest industry contributes about 1 percent to the nation's GDP. Despite strong growth in domestic production, Australia still has a substantial deficit in forest product trade, chiefly through pulp and paper imports.

Different investment entities have different attitudes towards rewards and risks and therefore behave differently in investing. Public companies are those listed on the Australian Stock Exchange (ASE). Shareholder investors in public companies, whether institutional or individual, can rapidly move in and out of ownership of shares in a particular company. Historically, the trend in the prices of publicly traded shares has been attractive to these investors. Expectations of returns on investment are therefore high, but must be matched against a high aversion to risk and a shorter term view.

The term 'private company' is widely applied to those companies that have fewer than 50 shareholders and do not list their shares on the ASE. Many of the major wood product companies are private companies. Their stock is not readily traded and investors are often financial institutions and high net worth individuals. Expectations of returns on investment are similar to those of public companies but the aversion to risk is lower, partly reflecting the lower liquidity of their investment. Members tend to take a more active role in key decisions than is generally possible in a public company and are more inclined to a long-term view.

Managed Investment Scheme (MIS) companies are a specially legislated class of pooled direct investors that constitute the largest contributors to new plantation investment in Australia in recent years. MIS forestry companies are generally public companies that have trustee responsibilities for managing the investments of individual MIS investors. Individual MIS investors are relatively small investors whose primary motivation is often tax minimization. They are willing to accept relatively low returns and moderate risk and to delegate the responsibilities for control and management. They tended to take a relatively (for forestry) short-term view, preferring pulpwood rotations to long rotation investments in sawlogs, because they were locked into investment for the full rotation. The introduction of measures that allow sale on secondary markets prior to the full rotation may change these preferences in the future.

The major rationale for MIS policies is to assist structural adjustment as farmers age and the scale of farming increases. Historically, family and individual ownership has typified much of agricultural production in Australia and older farmers represent the nub of the national problem of structural adjustment in Australian agriculture.

Family and individual owners investing directly in forestry tend to be motivated by environmental as well as commercial considerations. Traditionally they have accepted low returns and higher risks. The legal status and stability of MIS and private property rights provide the fundamental underpinning to these attitudes to investment. Any change to the stability of that legal status will have adverse effects for the particular type of investor. Any

incentives that are intended to assist forestry investment need to be targeted appropriately to the characteristics of the particular type of investor, as well as to policy goals.

The Australian Government's provision of tax-effective investment in plantation establishment is inextricably linked to a series of other forestry, regional development, natural resource and most recently, climate change policies and incentives, notably the National Forest Policy Statement, Plantations for Australia: the 2020 Vision and National Competition Policy.

Commercial state-owned entities now have to be competitively neutral in pricing to avoid favouring their clients unfairly against the private sector suppliers of the same or similar products. Most have now become state-owned corporations or entities that resemble private companies in the way they operate.

Primary producers are a special class of taxpayer. Those engaged in forestry are able to charge capital expenditures incurred in planting against current income for taxation purposes. This constitutes one of the most important incentives to private sector investment in forestry. MIS investors are similarly allowed to claim a 100 percent tax deduction for their ongoing contributions to forestry schemes. MIS investors are now permitted to sell their forestry assets after four years of ownership via the 'Secondary Trading Mechanism'.

Many other elements influence how prospective investments in forestry businesses are viewed. MIS and other plantations have been blamed for high land prices but rural subdivision, farm amalgamation and urban encroachment all influence rural land use and associated land prices.

Over the past five years, Australia, particularly its southern portion, has been subject to its worst drought in 100 years. Plantation development has also been criticized for inducing a change in the nature of the landscape and a decline in local social infrastructure. While much of Australia remains in drought, the impact of large plantation developments on water use has also come under close scrutiny. The drought has also promoted an increased risk (and reality) of fire. Larger private companies and forestry agencies generally self-insure against fire through the provision of fire suppression brigades and equipment. Fire insurance does not address catastrophic risk and this is the primary concern in large plantations.

Research and development levies on industry receive a one-for-one subsidy by the Commonwealth Government and the industry is also able to claim a taxation concession of 125 percent on its expenditure. Cooperative Research Centres (CRCs) are organizations that collaborate in research across several universities and CSIRO<sup>4</sup> divisions. The Commonwealth provides funding on a three-to-one (approximately) Commonwealth: industry basis in CRCs.

The major new resource now coming on stream is that of the MIS blue gum (*E. globulus*) industry. Most of the early MIS-based plantations were based on the use of short pulpwood rotations for export as woodchips to Japan as they now reach or approach harvest age. The MIS industry is also seeking to develop higher priced domestic uses. As noted earlier, MIS investors can now sell their plantations before rotation age. This is expected to accelerate investor interest in longer rotation projects for sawlog production.

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<sup>4</sup> Commonwealth Scientific and Industrial Research Organisation.

Most forestry companies currently utilize the public road infrastructure for the movement of their chips or logs. The Commonwealth and state governments have allocated significant funding to improve roads in relevant sections of the country.

The three principal initiatives needed in developing joint Commonwealth/state policies are: (1) to develop wood-based biofuel and bioenergy production; (2) to expand sawlog production; and (3) to develop internationally competitive pulp and paper processing, as overviewed below.

***Wood-based biofuel and bioenergy production:*** Various technologies are available or nascent for producing biofuels or bioenergy based on forest and wood residues. In general, the scale and location of the resource relative to the biofuel or bioenergy plant are of great importance to the economics. Specific new research and policy incentives are required, including better access to venture capital for innovative schemes and processes and addressing the negative public image created by opposition to the export of native forest woodchips.

***Sawlog production:*** The resource base for softwoods needs expansion to meet local demand, but also to meet long-term productivity improvements through technological development. To achieve a major increase in long-term supply, the existing incentives need to favour new planting over replanting. This poses a dilemma for governments because any failure to replant is also unattractive with respect to carbon emissions. Differential measures could be introduced through the MIS provisions to alleviate this problem.

***Pulp and paper processing:*** A substantial resource base of hardwood and softwood pulpwood exists, but the development objectives for processing this wood are unclear. World-scale pulp mills located in Australia imply that a major proportion of pulp produced would have to be exported. Unless incentives are found for domestic processing, and constraints are eased, the influences of scale and technology in the successful export of processed commodities such as pulp and paper will continue to outstrip aspirations for more Australian processing. There is a need to develop incentives in a way that encourages the formation of Australian-based joint ventures with existing or new clients and to reduce the risk in the early years of operation associated with a major reliance on exports coinciding when the trade cycle is at its lowest.

## **Introduction**

The objective of this study is to identify ways in which the investment climate in forestry (including natural forest management, plantation establishment and processing facilities) in Australia might be improved by:

- Providing an overview of resource ownership patterns in the forest and forest product processing sectors and of the key private sector entities in forest management and wood processing.
- Reviewing the legislative and regulatory framework for investors in Australian forestry.
- Reviewing government policies, legislation, regulations that influence the operations of private forestry businesses in Australia.
- Examining other factors that influence the operations of private forestry businesses in Australia.
- Identifying the major initiatives needed to promote private sector investment in Australia.

The global economic crisis commenced shortly after the first draft of this case study was finished. The ramifications of the crisis have such a profound and immediate as well as long-term influence that they merit special consideration before moving to discuss other factors influencing investment.

## **The global economic crisis**

The causes of the global economic crisis were several. The major ones include:

- The proliferation of collateralized debt obligations in the global financial world, especially in the United States.
- The extent of external debt financing of investment in many developed regions, including the United States, some countries in the European Union, and Australia and New Zealand.
- The role of exchange rate markets and mechanisms.

Financial institutions developed new and more complex forms of securitization of investment by creating packages of diverse mixtures of debt and equity, called collateralized debt obligations, intended to spread and so reduce risks. In the wisdom of hindsight, it is clear that these worked when equity prices were rising but were vulnerable to declining prices. The boom-and-bust process was assisted by the failure on the part of the financial regulatory mechanisms and banks to recognize and regulate the potential risks.

External debt financing grew at a rapid rate over the past decade in the major developed countries and blocs, partly because of the confidence imbued by an unparalleled period of global economic growth and partly by the desire of many of the major developing countries to invest in the high returns offered by overseas investment. The persistent imbalance in current account deficits in the United States, some countries in the European Union and to some extent Australia and New Zealand, and corresponding surpluses for the People's Republic of

China and some Middle Eastern countries, have created a much increased need to service that debt at a time when circumstances are less propitious.

When the economies of the principal developed countries recover from the immediate crisis, they face a difficult political balance in encouraging economic growth to reduce unemployment versus reducing government spending and/or raising taxes in order to reduce the current account deficit, external debt and inflation.

The boom in global trade, oil prices and freight rates exacerbated these problems. Exchange rates became volatile, and in the case of smaller countries like Australia and New Zealand, capricious. The process was not helped by the fact that the major recipient of global imports, the United States, used a market-based exchange rate mechanism while the major supplier, China, used a regulated mechanism. It is still unclear whether and how these issues will be addressed.

Theories abound as to the most critical components and mechanisms, but a consensus on them is yet to emerge. Nor is there a generally accepted theory that integrates them. Consequently, the policies being adopted by the major countries and blocs to ameliorate the crisis are largely trial and error, hopefully with a greater degree of international collaboration than in the past. They herald a major increase in public (i.e., government) investment in infrastructure and other projects to ameliorate the loss of employment, together with various short-term measures to boost consumer spending. In the long term, this will strain public budgets and may add to inflationary trends. So what are the policy implications relating to investment in the forestry and forest product industries in Australia and similar countries?

In the short term, the immediate consequences are a drying up of sources for financing debt, together with higher prices for debt. The forest and forest product industry, like most others, is generally trying to reduce debt and increase equity where possible, neither being easy at this stage in the market cycle. As with other industries, the immediate future is one of great uncertainty and potential volatility. Despite the immediate unrest, Commonwealth and state governments are responding to the crisis with programmes to pump prime capital works and consumer spending.

Government-funded increases in infrastructure investment are only just commencing but in the longer term will assist the heavy construction industry, although there will be some flow-on in the demand for the products of the solid wood industries. The Commonwealth Government is providing additional cash grants to new home-buyers to offset the recent decline in demand for new housing, a process being aided by lower interest rates on housing loans. These measures are of more immediate benefit to the solid wood industries but the future of additional cash grants is not yet clear (they are expected to be reduced in 2010). The fate of the paper and packaging sector is much less clear. It will be hit hard by the decline in consumer spending, exports and advertising and, depending on exchange rates, may be more vulnerable to more competition from overseas imports. Plans for investment in pulp mills are on hold. Investment in biofuel pellets, however, does seem likely to proceed and will assist the hardwood plantation sector, which has been hit very hard by the decline in Japanese and Chinese imports. As discussed in a later section, the extent to which the trends induced by the global economic crisis will reduce the demand for investment in plantations, which are largely funded by individual investors seeking to avoid taxation, is unclear.

All of these changes and uncertainties conspire to cloud the immediate future of investment in forest industries. In the longer term, however, there are a number of policies and policy changes that will shape future investment in positive directions. A renewable natural resource that has a potentially positive impact on carbon emissions has intrinsic advantages in an era of climate change, notwithstanding the fickleness of nature with respect to the current long drought in southeastern Australia, floods in Queensland and bushfires in Victoria.

Gerrand *et al.* (2002) reported on the history of incentives used to encourage plantation investment in Australia up to 2002. The Commonwealth's Department of Agriculture, Forestry and Fisheries (DAFF 2003) produced a comprehensive report on the Australian forest product industry that summarizes the wood inputs, outputs and levels of concentration in all of the various sectors of the industry, including the names of major companies involved. Much of the resource and production data in this publication has been superseded by the *State of the forests report, 2008* (Montreal Process Implementation Group for Australia 2008), but they still provide a useful summary of the importance of the various forms of ownership at that time, although details of the major companies involved in the industry have changed considerably.

The *State of the forest report, 2008* shows that Australian forestry spans a wide range of forest resource ownership, including public (i.e., state), public company, private company, MIS company, joint ventures, leases and family or individual private ownership. This report enables this case study to restrict the level of background reporting to a brief summary that places the resource management and processing industries in context and to focus on the changes that have taken place since and the reasons for them.

This review proceeds by discussing in turn the five steps identified in the first paragraph of the Executive Summary, namely:

- Resource ownership: an overview;
- Legislative and regulatory framework for investment;
- Government policies and incentives;
- Other factors influencing investment; and
- Providing incentives and removing constraints.

These steps were specified in the Terms of Reference for an Asia-Pacific Forestry Commission (2008) study to provide a common framework for an array of case studies with the aim of identifying ways in which the investment climate in forestry (including natural forest management, plantation establishment and processing facilities) might be improved.

## Resource ownership: an overview

The *State of the forests report, 2008* provides extensive data on Australia's forests and their management relative to the Montreal Agreement on Criteria and Indicators. Forests are defined as:

*An area, incorporating all living and non-living components, that is dominated by trees having usually a single stem and a mature or potentially mature stand height exceeding two metres and with existing or potential crown cover of overstorey strata about equal to or greater than 20%. This includes Australia's diverse native forests and plantations, regardless of age. It is also sufficiently broad to encompass areas of trees that are sometimes described as woodlands.* (Montreal Process Implementation Group for Australia 2008.)

### Native forests

The biogeography of Australian forests is such that they are mainly concentrated around the coastal areas. The central one-third of the continent is too dry to support forests and the intermediate one-third carries a mixture of shrubland and woodland, generally of little commercial value for forest products and used mainly for pastoral grazing. The remaining one-third is the coastal periphery, although it is discontinuous due to intervening drier zones in the middle of the southern coast and northwest coast. Table 1 summarizes ownership for native forest areas in 2007.

**Table 1. Australian native forest ownership, 2007**

Ownership	Area (1 000 ha)	Percentage of total
Public conservation and other reserves	33 233	23
Public multiple use	9 408	6
Public leased	65 132	44
<i>Total public</i>	<i>107 773</i>	
Private ownership	38 099	26
Unresolved public and private	1 524	1
<b>Grand total</b>	<b>147 397</b>	<b>100</b>

Source: Montreal Process Implementation Group for Australia (2008).

Public conservation and other reserves include both national conservation reserves (e.g., national parks) and formal specific-purpose reserves on which wood production is not permitted. Public-multiple use includes all forests available for multiple uses including wood production, together with substantial (circa 25 percent) areas of 'informal' reserves protected under codes of forest practice or legislation, such as buffer strips along watercourses, wildlife corridors and patches protected for animal habitat or endangered species. Public leased forests are commonly known as pastoral grazing leases.

For the purposes of this case study, most attention will be focused on the public multiple-use forests and on those under private ownership because these are the forests most closely

related to private sector investment in growing or processing wood products. There are, of course, significant other private sector investments, especially in tourism and recreation, that relate to the public conservation and other reserves. These resources tend to be site-rather than area-based and are therefore not considered specifically in the reviews that follow. Nevertheless, although site-specific in form, many of the attributes of private sector investment discussed here apply to them. There are also environmentally significant activities by individual landowners investing in largely non-commercial amenity and biodiversity values. These are reviewed in more detail because, in some cases, public policies are attempting to develop markets and commercial values for ecosystem services.

The majority of commercial species harvested from native forests are eucalypts, but small quantities of rain forest species are harvested from privately-owned forest in coastal Queensland and northern New South Wales, and a limited amount from publicly-owned forest in Tasmania. The commercial species cover a wide range of properties and features when converted into timber or wood-based products.

### **Plantations**

Plantations are the other form of forest in Australia and now play a dominant role in wood production and related private sector investment. Table 2 summarizes the plantation areas by principal species groups.

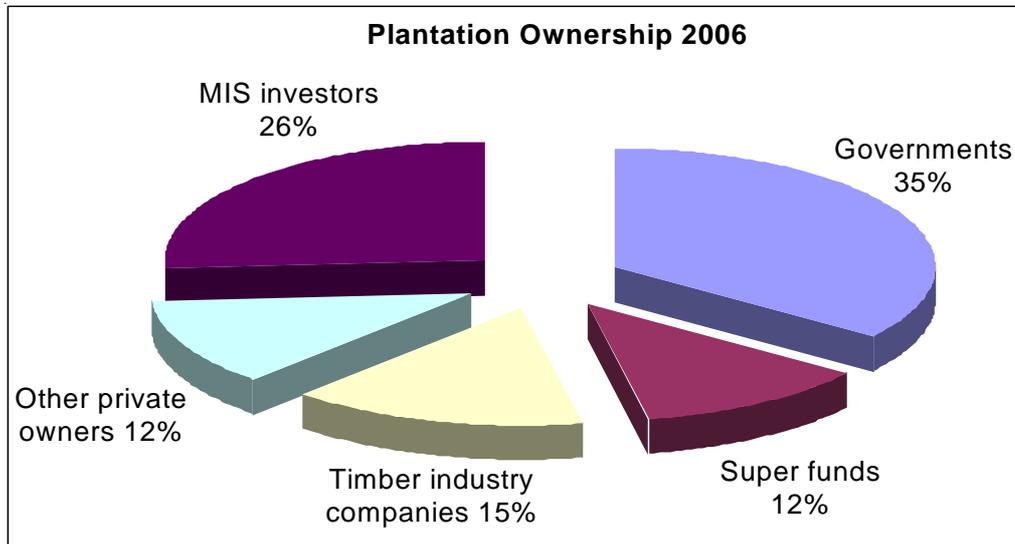
**Table 2. Plantation areas, 2008 (hectares)**

<b>State</b>	<b>Public</b>	<b>Private</b>	<b>Joint1</b>	<b>Total</b>
Western Australia	81 035	302 995	32 439	416 470
Northern Territory	0	29 538	0	29 538
South Australia	86 035	95 719	0	181 754
Queensland	197 074	50 752	2 771	250 597
New South Wales	246 815	118 434	4 805	370 054
Australian Capital Territory	7 870	0	0	7 870
Victoria	4 352	410 719	7 040	422 112
Tasmania	31 186	203 512	59 443	294 140
Totals	654 368	1 211 669	104 498	1 972 535

Source: Gavran and Parsons (2009).

The distinction between hardwood (mainly *Eucalyptus* but also *Acacia*, *Khaya*, *Tectona*) and softwood (mainly *Pinus* but also *Araucaria*, *Pseudotsuga*) plantations is important, as will become apparent in the sections that follow.

The relative importance of investors in terms of ownership of Australian plantations is complicated by the multiple roles that some companies and governments have in ownership, managing and/or processing. Nevertheless, Figure 1 provides a summary of ownership by categories of investors that can readily be related to the subsequent discussion.



**Figure 1. Plantation ownership, 2006**

Source: Parsons *et al.* (2007).

## Processing industry

The DAFF (2003) forest industry report summarized the processing industry at that time. To quote the opening sentence that well characterizes the Australian industry in relation to the economy at large:

*The Australian forest industry contributes \$14 billion pa and about 1% GDP to the nation's economy. The industry has strong growth. Annual turnover increased by 11.8%, or \$1.4 billion, between 1998-99 and 1999-2000. Despite Australia's large forest estates and harvests, Australia has an annual deficit in forest products trade. Forest product imports totalled more than \$3.5 billion in 2001-02 and included 735,500 m<sup>3</sup> of sawnwood and more than 1.24 million tonnes of paper products. However, exports - mainly woodchips and corrugating grades of paperboard - totalled only \$1.9 billion.*

The DAFF (2003) publication provides further detail on the industry and its characteristics. More recent data (Commonwealth of Australia 2007) show a contribution to GDP of A\$18 billion *per annum* in 2005 to 2006. Exports rose to A\$2.1 billion but imports increased to A\$4.1 billion. Ownership has undergone significant change, largely involving ever increasing concentration among fewer companies – some domestic, some of mixed domestic and foreign ownership and some foreign-owned.

The sawn hardwood processing industry, presently based on log supply from publicly-owned native forest, has retracted in scale since 2003 due to reductions in log supply but has

increased in ownership concentration markedly with the purchase and closure of mills by larger entities. Pulp and paper processing is largely oriented to the domestic market and is based variously on hardwood, mainly from native forest, and softwood from plantations, and similarly with veneer processing plywood. Panel board processing is almost entirely based on softwood, again largely catering for domestic markets.

## **Legislative and regulatory framework for investors**

Different investors have different attitudes towards forestry and therefore behave differently in investing for reward. Privately-owned entities engaged in forest growing and processing can be categorized under the following headings:

- Public companies;
- Private companies;
- MIS companies; and
- Family and individual landowners.

The Corporations Act, 2001 (Cth) sets out legislation that enables a ‘company’ to be formed. A company is an incorporated body that limits the liability of the owners to the assets of the company. There are several categories of company, with the three most relevant to this study being termed public companies, private companies and MIS companies.

### ***Public companies***

Public companies include those listed on the Australian or other stock exchanges such that their shares can be bought or sold at any time. Some of the major wood product companies in this category include Boral Ltd, Forest Enterprises Australia Ltd, Gunn’s Ltd, ITC Ltd, PaperlinX and Willmott Forests Ltd. Many are diversified companies with vertically integrated forestry subsidiaries.

Public companies tend to be well-established entities of substantial size, with interests in both growing and processing wood products, often with subsidiaries that are responsible for forest management (e.g., an MIS company) and/or certain types of processing and marketing (e.g., timber processing, woodchip exports, pulp and paper manufacture).

The advantage of listing is that funds can be raised from the general public and/or institutional investors with comparative ease through initial public offers or through various arrangements consistent with the articles of association of the company such as further offers of shares, preference shares, or calls, etc. These initial public offers provide the initial shareholders’ equity.

This equity is generally supplemented by debt – funds raised from shareholders in the form of debentures or notes (essentially loans to the company on a standardized basis) – and by borrowings from banks and other financial institutions.

The company structure isolates the individual shareholders from any liabilities that it might incur, so that there is no claim by debtors on their assets other than those owned by the company. A board of management, generally comprising a diverse array of skills, governs a

company. The board is responsible for employing staff and formal reporting to shareholders, the ASE and the Australian Securities and Investment Commission (ASIC) at least annually, and generally on an interim basis (at least quarterly) to shareholders.

While listing offers important advantages in raising capital through initial public offers and other mechanisms, it has the disadvantage that its progress, and hence share price, is available for all to see, as the board has responsibilities to advise shareholders and the ASE of material changes affecting its financial operations. In a sector characterized by marked cyclical changes, as is the case in wood and paper products, this can impose severe constraints on the board's ability to raise capital during downturns. Downward changes in external valuations at this time, together with downward shifts in shareholder preferences for the stock, expressed in lower stock prices, deter shareholders and others from offering capital. Banks generally require that interest charges on existing debt be covered sufficiently by net cash revenues to reduce their risk. If they do not meet that coverage, the rates of interest may have to be renegotiated upwards or, in the worst case scenario, the banks may foreclose and put the company into liquidation.

### ***Private companies***

The term 'private company' is widely applied to those companies that have fewer than 50 shareholders and do not list their shares on the ASE. Some of the major wood product companies in this category include AKD Softwoods, Carter Holt Harvey, GMO Australia, HVP Plantations, Hyne & Sons and Visy. They have similar characteristics to those of public companies except for the implications of being unlisted. They can also be diversified in product structure.

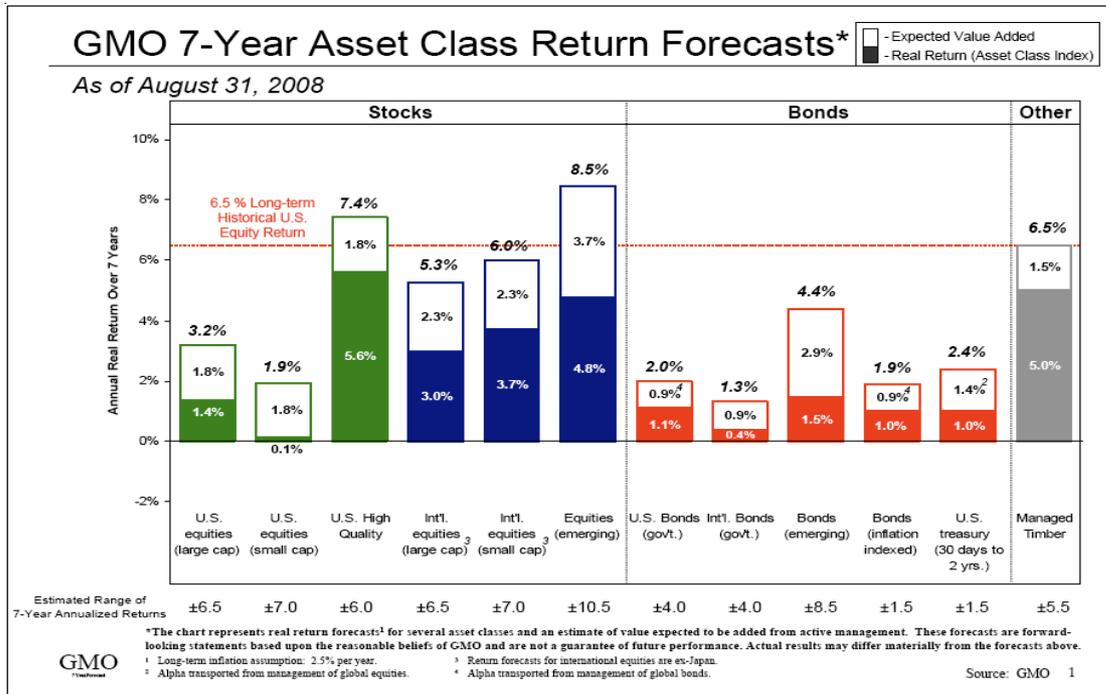
### **Box 1. Timberland Investment Management Organizations (TIMOs)**

TIMOs are a forestry investment entity first formed in the United States when the previously vertically integrated companies such as International Paper began to divest their forests. This move was precipitated by poor returns on investment and the view of institutional investors and analysts that transfer pricing and attendant cross-subsidies between grower and processor subentities were leading to poor financial management and decisions.

TIMOs in the United States have grown rapidly in number and individual scale over the past 15 years. That growth was largely premised on the beliefs that timberland management offered returns that were negatively correlated with the activities of other manufacturing industries and with a reasonably low risk, but stable net cash flow. These TIMOs have also invested in many other countries, the United States parent TIMO holding a majority control of the foreign company but inviting shareholding by local financial institutions, typically superannuation companies, fund managers for superannuation and insurance companies, or banks with similar interests in long-term investment. The boards of directors of these local companies reflect the distribution of shareholding. One of the major features of these TIMOs is their expertise and standing in financial management and associated information systems, as well as the breadth and depth of their knowledge of financial and product markets. The first major TIMO to enter the Australian market was Hancock Natural Resource Group (HNRG), now owned by Manulife Financial Corporation, a major North American insurance company. HNRG has seen a rapid expansion in timberland ownership since its inception in 1985 and now manages timberlands valued at US\$9 billion.

One indicator of relative returns on investment has been provided by GMO (2008), another TIMO that also now operates in Australia and New Zealand. Figure 2 shows the GMO forecasts of the seven-year real returns on assets for various classes of investment, timberland being the highest. The timberland results may just reflect that the premium forest estates have been acquired during the early growth phase of this new class of investment. Nevertheless, this and earlier forecasts have been broadly consistent with the performance of other TIMOs and have triggered an awakening of interest among Australian financial institutions, especially superannuation companies.

The HNRG led a TIMO consortium that purchased the assets of a Victorian State-owned corporation established to own and manage its plantation timber resource. The majority of land was under perpetual licence provided it remained under forest. HNRG formed a consortium with a few Australian institutional investors that included banks and major superannuation companies to raise shareholder equity and borrowings. HNRG retained a majority interest and the resulting company, now called HVP Plantations, has traded successfully since then. This and other TIMO investments have established confidence in a previously unknown class of investment for superannuation companies and kindred institutional investors. A number of other similar investments by TIMO-type companies in plantations in Australia and New Zealand have been undertaken. One of the features of TIMOs is that they are generally private companies.



**Figure 2. Seven-year forecasts for TIMO and other asset classes**

Source: GMO (2008).

### Joint ventures

Joint ventures represent a particular form of investment entity where two or more different organizations pool funds for investment in timberland and/or processing assets, normally by forming a private company or association. Most are restricted to a small number of investors because governance arrangements have become more complex and control becomes too diluted with larger numbers. For investments in the Australian forestry industry, they have chiefly been vehicles to bring together:

- (1) An owner, who wishes to realize on part of the value of an existing asset but retain a major role in future governance and management, with an institutional investor who has confidence in the capacity of the other party to jointly govern and manage the business successfully.
- (2) An investor with experience in the type of business, who wishes to purchase and manage but does not have or wish to provide the entire funding, with an institutional investor who has confidence in the capacity of the other party to jointly govern and manage the business successfully.
- (3) A plantation owner or manager and a major foreign client.

They are normally established as companies whose articles of association spell out the joint roles and responsibilities of the investing members *vis-à-vis* those of the governing board. For example, sale of their share of the assets by one member would normally be subject to

pre-emptive first rights to purchase by the other on stated terms before approaching external purchasers. Major contracts might be subject to the approval of both members, in addition to the approval of the governing board of the company.

Joint ventures have been fairly common in the Australian forest-growing sector and currently include Taswood, a joint venture between Forestry Tasmania and GMO, Australia; Victorian Tree Farm, a project between Midway, Mitsui and Nippon Paper; South West Fibre, between Midway and Mitsui; Bunbury Tree Farm Project, between the Western Australian Government, Nippon Paper, Mitsui and MCA Afforestation; and Highlands Pine, between Boral Timber and Carter Holt Harvey and others.

### ***Managed Investment Schemes (MIS)***

This review deals only with MIS companies that are registered under Chapter 5c of the Corporations Act 2001 (Cth). These constitute the largest contributor to new plantation investment in Australia at present. An MIS under this act is any pooled direct investment in a venture that is managed by some other company or person. A direct investment is where investors are directly involved in the business or property as one of its owners or beneficial owners, or in which investors are directly contracting for services to be carried out on their behalf.

Holding shares or debentures in a company is not a direct investment. It is indirect because share or debenture holders do not own the business (the company does) or automatically receive profits from the business. They only receive such dividends as the directors determine or at an agreed rate in the case of preference shares.

In the case of MIS forestry companies in Australia, the overwhelming majority was registered schemes that raised their direct investment funds by issuing a public prospectus inviting investors to participate. Some of these were essentially stand-alone public companies (e.g., Great Southern Plantations, Timbercorp, Willmott) whose shares were listed on the ASE. Some were subsidiaries of larger forest product groups or other entities (e.g., Gunns Plantations, ITC, Macquarie Forestry Investment). Some were private companies. Whatever the form of the company, it becomes the 'responsible entity' under the legislation and, as such, is required to hold a financial planning licence and a compliance plan for financial management that is audited by a registered auditor.

Any MIS prospectus has to meet requirements laid down by ASIC and is subject to approval by the Australian Taxation Office through a formal product ruling that enables investors to be secure regarding the application of the taxation provisions applying to their investment through MIS companies. These provisions are discussed in a later section on taxation.

Within Australia, some ten major MIS companies and approximately seven other smaller entities raised funds for forestry investments totaling about A\$705 million in 2007 to 2008 for forestry projects (Australian Agribusiness Group 2008). In total, these companies offered 22 different forestry projects in 2007 to 2008. MIS companies listed on the ASE raised 85 percent of funds invested in forestry in 2007 to 2008 (Australian Agribusiness Group 2008).

Not all prospectus offerings are fully subscribed. Some 43 percent of all agricultural and forestry MIS companies achieved an uptake of less than 70 percent of their targets in 2007

to 2008 (Australian Agribusiness Group 2008). In part, this reflected the Australian Government's announcement that no MIS schemes other than timber would be given secure taxation benefits after 2008. Earlier government support for the forestry schemes was given to the end of 2010, but there is some uncertainty as to intentions beyond that date.

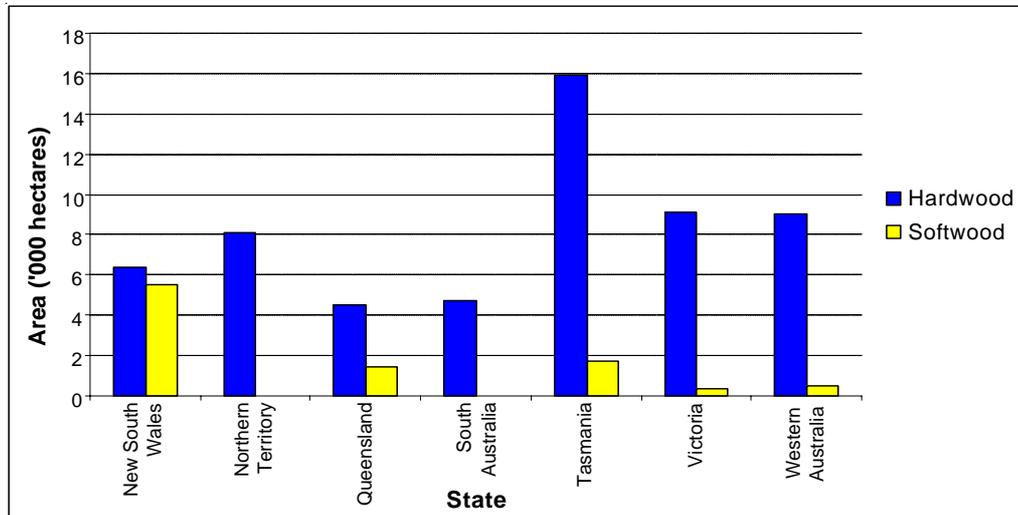
Historically, not all MIS companies have traded successfully. All are sensitive to any change in the regulations pertaining to them. A change of Australian Government policy in 2000 led to the collapse of several because it restricted their ability to raise new funds and thus remain solvent while awaiting the age at which harvesting revenues began to flow. Others failed due to site and climatic conditions impacting on the growth of particular species. At the time of writing, the two largest MIS companies (Timbercorp Ltd and Great Southern Ltd) had gone into liquidation, an outcome ascribed to the change in policy referred to earlier, a more recent change banning future non-forestry MIS schemes, very high external debt and delays in the commencement of exports of woodchips from Portland due to infrastructure delays and market downturn. The individual MIS investors' assets established through these companies are secure, provided they maintain any payments due, but each separate investment scheme will need to employ a new manager, creating uncertainties and delays in operations. At a national policy level, this will add to the debate about the future of the MIS forestry schemes, especially concerning issues of replanting to maintain the existing forest estate versus new planting to expand it. This issue is taken up in a later section.

***Investor characteristics:*** Investor demand for MIS agribusiness projects is largely motivated by tax minimization (Australian Agribusiness Group 2008). An ASIC (2003) survey of investors in primary production schemes reported that 42 percent of respondents identified tax advantages as the main attraction, while 26 percent identified future income. Some respondents may have been reluctant to identify with tax advantages, given the sensitivity that this topic evokes. Many but not all investors are probably 'high net worth' individuals.

In 2007 to 2008, there were approximately 24 300 investors in the MIS agricultural and forestry schemes (Australian Agribusiness Group 2008). This testifies to the breadth of the investing group as the total number of direct investors in Australia is estimated to be about 43 000 (Elgin and Lee 2006).

***Scheme impacts:*** The MIS sector has established between 70 and 80 percent of all new plantations in Australia since 1997, and is now responsible for managing around 500 000 hectares of hardwood and softwood plantations (Treefarm Investment Managers Australia 2008). Since 1996, annual rates of planting have ranged from as low as 20 000 hectares to as high as 100 000 hectares, reflecting the somewhat erratic path of government policies and investment market conditions.

In 2006, MIS contributed 86 percent of the new area planted in Australia (Figure 3). An establishment rate of this magnitude would enable Australia to reach the 2020 Vision of a total area of 3 million hectares of plantations by 2020. However, as MIS companies begin to harvest and replant existing areas of their estates/plantations, expansion rates may stabilize as plantation estates exhaust local land supply or even decline if investor confidence declines in MIS schemes or societal land-use norms change.



**Figure 3. New MIS plantation establishment (2006)**

Source: Parsons *et al.* (2007).

### **Family and individual ownership**

Family and individual ownerships in Australian forestry are principally either lessees of land to other entities or owner/growers who establish and manage their own forest. Arrangements that are common in agricultural share farming are seldom used in Australian forestry.

**Forestry rights, carbon rights and leases:** Over the last decade and a half, attention has been given in most states to facilitating the legal separation of landownership from that of tree-growing. The first of the new arrangements was the introduction of forestry rights in Victoria in 1995 under the Forestry Rights Act, 1996 (Vic). All states have since adopted similar acts. More recently, similar provisions have been introduced to separate carbon rights from forestry rights. The legal forms of separation vary somewhat between states but the intent has been to enable and encourage the separation of ownership to provide more flexible and efficient arrangements than traditional leasing or that are complementary to leasing.

Leases are a common form of ownership in which the lessor retains the ownership of the land and the lessee has the rights to use it for agreed purposes over a specified period, subject to payment of rent to the lessor. Typically, this is an arrangement that might suit family or individual landowners who want to improve the returns on an otherwise slack land asset. Lessors are generally one or other of the preceding entities.

Data are not available on the extent of leased land used in forestry investment. As freehold land prices have risen with the competition between MIS companies and other land users, there has been a trend by MIS companies to lease rather than purchase. Nevertheless, third party observation suggests that land purchase predominates.

Lease payments are generally charged against an independent valuation using a constant rate that lies between the bond rate and the rate of return on shares. The duration of the lease varies but most are based on the age at which the clear-felling takes place.

Several state forestry agencies and some plantation companies have well-developed schemes to engage landowners in contractual leases for new plantations. Forests NSW, for example, seeks areas that may be as small as 40 hectares but were cleared prior to 1990, with suitable access, soils and rainfall for softwood planting. It requires registration of a forestry right (see earlier discussion) and a carbon right on the title of the land. An annuity is calculated on a standard basis against the assessed value of the land for the duration of the contract, which is around 30 years or a nominal rotation of the forest. In the event of the sale of the property, the registered interests (forestry and carbon rights) transfer across to the new owner, as does the annuity.

The principal difficulty of this form of land acquisition is that the areas available on individual properties tend to be small and hence a minimum area is often stipulated. The small size of each unit and greater geographic dispersal increases the problems and costs of upgrading and making road networks that can handle logging traffic when harvesting commences. On the other hand, this can reduce the risk of catastrophic loss from fire in large plantation aggregates.

***Owner-growers:*** Family and individual ownership is the form of ownership that has historically typified much of agricultural production in Australia. That pattern is changing progressively as the ownership of agricultural entities increasingly concentrates in larger estates. Survey data suggest that less than one-third of Australian farmers now produce about two-thirds of the value of production (Productivity Commission 2005). Furthermore, the average age of Australian farmers has been steadily increasing, rising from 44 in 1981 to 50 in 2001 (Productivity Commission 2005). This partly reflects changing lifestyles in which the children of farmers are often no longer interested in pursuing farming.

Of course, among the 110 000 or so farms, 99 percent of which are family businesses (BRS 2005; Productivity Commission 2005), there will be many exceptions for whom present returns are good and the future seems better, including some who are diversifying future income by investing in tree planting, sometimes involving innovative species or techniques for combining commercial wood production with amenity and other environmental values.

***Structural adjustment:*** However, many older farmers are asset-rich but cash-poor, in the sense that their farm is the major asset in which they have invested. Only a small proportion that has had part-time or temporary employment in the private sector is likely to have any additional superannuation funds. That asset must support the others in old age as their real income diminishes and they struggle to compete with larger scale commercial farms. It is these older farmers that are the nub of the national problem of structural adjustment that is apparent in Australian agriculture.

Prior to the advent of the MIS schemes, the markets for agricultural land were much thinner, unless located in the periphery of major cities and towns, where 'hobby farms' or quasi-rural lifestyle attracted the interest of people in employment in those cities and towns. Competition between MIS companies and other land users has contributed to a much more active market for land and real prices have appreciated substantially. Older farmers who wish to retire from

the land are then able to gain in two ways – from a ready market and a higher real price. This is a major argument supporting the creation of the MIS schemes in pursuit of the expansion of new plantings on cleared agricultural land (Lacey *et al.* 2006). What is less clear, however, is the degree to which MIS schemes are a justifiable policy for replanting of those areas – an issue taken up in a later section.

**Property rights:** Fundamental to all family and individual ownership and, indeed, to the development of all forms of entities that followed it in agriculture or forestry, are the property rights provided by the Torrens Title system. This collects and records relevant survey and ownership data for the area in question and establishes the legal basis of ownership, rights and responsibilities. In addition to providing for transferability and enforceability of rights, any processes for controlling property rights needs to include provision for resolution of conflicts. The respective states have transparent processes for conflict resolution that are well respected and have withstood much legal scrutiny since their initiation.

### **Summary**

Different forms of ownership and commercial entities cater for different types of investors and the differences have profound effects on the respective attitudes to returns and risk. Shareholder investors in public companies, whether institutional or individual, can rapidly move in and out of ownership of shares in a particular company if they are more interested in arbitrage gains (or minimizing losses) than long-term net cash flows, as recent events show. Historically, the trend in the prices of publicly traded shares has been attractive to these investors.

Expectations of returns on investment are therefore high but must be matched against a high aversion to risk and rapid exit in the event of a major downturn in fortunes. Institutional or high net worth investors can wield influence over management if they hold a significant interest in the company, but other shareholders generally do not. Even so, they are to some degree captive to trends in share prices and less inclined to a long-term view.

Investors in private companies tend to be financial institutions and high net worth individuals. Some of the risks associated with the cyclical fluctuations in the industry are therefore less acute than in the case of listed companies. Expectations of returns on investment are similar to those of public companies but the aversion to risk is lower, partly reflecting the lower liquidity of their investment. Members generally take a more active role in key decisions than is generally possible in a public company and are more inclined towards a long-term view.

MIS investors are in an unusual position. MIS forestry companies are generally public companies with trustee responsibilities for managing the investments of individual MIS investors.

Nevertheless, if listed, MIS companies are to a considerable extent captive to their share price. This creates pressures to continue to raise additional funds through new prospectuses until such time as the harvests yield net revenues.

The individual MIS investors are a quite different category. Being relatively small investors whose primary motivation is often tax minimization, they are willing to accept relatively low returns and moderate risk and to delegate the responsibilities for control and management.

Until recently, they have necessarily tended to take a relatively (for forestry) short-term view because they were locked into the investment for the full rotation. As we shall discuss in a later section, that situation has changed recently.

Family and individual owners investing in forestry tend to be motivated by environmental as well as commercial considerations. Commercial forestry investments by these owners are often innovative, small scale and high risk. Those that lease land, do so to reduce risk and accept a lower return as a consequence. In either event, most owners have a long-term view for their investment.

The legal status and stability of these institutions and property rights provide the fundamental underpinning to these attitudes. Any change to the stability of that legal status will have adverse effects for the particular type of investor. Any subdivision of property rights will attract a somewhat different type of investor. Any incentives that are intended to assist forestry investment need to be targeted appropriately to the characteristics of the investors to be encouraged. The differences in attitudes to returns, risk and governance control are marked and the choice of incentives needs to reflect these differences.

## **Government policies and incentives**

The Australian Government's provision of tax-effective investment in plantation establishment is inextricably linked to a series of other forestry, regional development, natural resource and most recently, climate change policies and incentives. Of them, the National Forest Policy Statement and Plantations for Australia: the 2020 Vision are the most important and are outlined below.

### ***National Forest Policy Statement***

Australia is a federation initially formed in 1901, now comprising six states and two territories. Under the Constitution, land management, including forest management, was to be administered by the states. More recent administrative arrangements of the Commonwealth Government extend this devolution to the territories.

During the past 30 years, the Commonwealth Government became increasingly involved in forestry issues, often taking a position in opposition to the views of the state government concerned, especially when of the opposite political persuasion. Although the Commonwealth had no direct controls over forest management under the Constitution, it soon developed several forms of indirect control.

By the early 1990s, it had become apparent that a joint Commonwealth and state forest policy framework was needed. A joint policy statement was negotiated between the Commonwealth and the states in 1992 and after further negotiation was finally signed by the last state in 1995 (Commonwealth of Australia 1992, 1995). The Statement rests on three main principles as the basis for sustainable forest management:

- Maintaining ecological processes;
- Maintaining biological diversity; and
- Managing for the full range of environmental, economic and social benefits.

Two provisions in this Statement introduced especially important changes:

- Jointly agreed and legally binding codes of forest practice were to guide forest management where wood production or other commercial extractive uses were involved.
- Comprehensive and joint regional assessments were to be instituted in developing a national reserve system, based on agreed criteria for conservation of forest types.

While the process to implement the National Forest Policy Statement was being developed, a dispute between Commonwealth ministers over the issuing of a woodchip export licence led to a chaotic national protest in 1994. These events accelerated the realization of the various governments that continuing political gamesmanship between the Commonwealth and state levels was counterproductive to rational resolution of the issues and prompted the establishment of the Regional Forest Agreement process under the control of the Department of Prime Minister and Cabinet (McDonald 1999; Zammit 1999; Hollander 2004).

The Regional Forest Agreement process was based on one of the most comprehensive assessment processes ever undertaken of forests and attempted to balance competing interests across all forest users and interests. One of the outstanding achievements of the Regional Forest Agreement process was the establishment of a national conservation reserve system, even if at the cost of a very substantial withdrawal of resources from the publicly owned multiple-use forests.

The suite of national goals set out within this agreement also included the aim to “expand Australia’s commercial plantations of softwoods and hardwoods so as to provide an additional, economically viable, reliable and high quality resource for industry”.

### ***Plantations for Australia: the 2020 Vision***

Plantations for Australia: the 2020 Vision is the product of a strategic partnership between the Commonwealth, state and territory governments and the plantation timber-growing and processing industries (DAFF 2008). Launched in 1997, the aim of the Vision is to treble the area of commercial tree crops to around 3 million hectares by 2020.

This Vision has been trenchantly criticized by Mackarness and Malcolm (2006) for failing to provide any justification in terms of demand, supply and cost-benefit analysis. Yet like many other new policy initiatives, the Vision was founded on aspirational rather than analytical goals, largely because new institutional structures for property rights, investment and taxation did not exist in 1997. They had to be created and their adoption encouraged.

Any analysis prior to 1997 would have been mainly predicated on the dismal financial performance of traditional state forestry department ownership and management of their plantations, as they then dominated the plantation sector. Subsequent experience with public and private companies has shown that, with good financial management and planning, they can compete in the marketplace for investment funds on an equal footing with similar investments in agriculture and other sectors, vindicating the underlying view that private sector investment and management was imperative to the future of the sector. What is disappointing is that there has been no recent analytical scrutiny published on the effectiveness of the Vision to date.

## **Carbon emissions and rights**

During the last decade, the Commonwealth Government has undertaken an extensive review of carbon emissions and sequestration in Australia to provide a quantitative basis for the development of policy on carbon management. It commissioned a major review of policy (Garnaut 2008) that was completed in October, 2008. Subsequently, it released a White Paper on the Carbon Pollution Reduction Scheme (Commonwealth of Australia 2008) that sets out its proposed policies and mechanisms. In 2000, the government committed to reducing greenhouse gas emissions by between 5 and 15 percent by 2020.

Liable emitters of greenhouse gases need to acquire a permit for every tonne of greenhouse gas that they emit. At the end of each year, each liable entity will need to surrender a permit for each tonne of emissions produced. The number of permits issued in each year will be capped in what is commonly known as a cap-and-trade scheme, where the price per tonne of emissions for permits will be determined competitively. The caps will be specified for at least five years in advance and extended annually. A further ten years of guidance of the range within which the caps will lie will also be provided. The price per tonne will also be subject to a cap that will be adjusted annually. Energy-intensive trade-exposed industries will initially be allocated around 25 percent of total carbon emission permits, rising to about 45 percent by 2020.

The pulp and paper industry is energy-intensive and trade-exposed and will therefore have some of its concerns over international competitiveness alleviated under the Scheme, while maintaining an incentive to reduce emissions. However, it is still going to impose a cost of tens of millions of dollars per year on the industry. Most of the rest of the wood-based industries will benefit indirectly to the extent that biofuel and bioenergy usage in various manifestations is encouraged. Bioenergy uses of wood have long been pursued through the utilization of residues in processing plants or associated industries but forest residues have not been much utilized and constitute a substantial resource for bioenergy or biofuel production. Carbon storage in processed products, such as solid wood, is not yet recognized in either the Australian or Kyoto schemes but is under consideration pending proper measurement and monitoring. Recognition of this carbon storage would provide an important additional commercial benefit to the forest industries as well as to the national carbon balance.

Initially the Scheme will not include agriculture, but may be extended to include it from 2015. Deforestation emissions are also excluded because they pose substantial difficulties to manage and risk pre-emptive land-clearing. The Scheme will cover about 75 percent of Australia's emissions and involve mandatory obligations for some 1 000 entities. The overwhelming majority of registered businesses will not face any direct obligations.

Reforestation, as defined in the Kyoto Protocol, will be included on a voluntary basis from 2010. The Kyoto Protocol definition of reforestation restricts the effect of the Scheme on forestry to those plantations established on cleared agricultural land since 1989 (the 'Kyoto forests'). Domestic emissions and sinks will be estimated using a prescribed methodology, such as the National Carbon Accounting Toolbox. Forest entities will be required to prepare an initial emissions plan and to report at least every five years or annually. The regulator will issue permits once carbon stocks are greater than in 2008. The permits will incorporate a 'risk of reversal' buffer.

However, the issue of tradable permits for carbon storage is restricted to entities that have an 'average carbon storage' (i.e., the average of annual storage less annual reductions from harvesting) over the next 70 years in excess of that in 2008. This effectively eliminates most of the existing industrial plantations, both softwood and hardwood, from benefiting from emissions trading.

Individual small plantation owners may be assisted to take advantage of the Scheme through state-managed pooling of permits. The main impediment appears to be possible price trends in the early years, notwithstanding the price cap. Some plantation owners are apprehensive about substantial price increases in early years that could in theory lead to the discounted costs of wood removals from the Kyoto forests later in those years exceeding the immediate present value of revenues from accretion. These are issues that hinge on the areas of the age classes of plantations involved, as well as on the anticipated price increases and periods involved, and that are capable of risk management.

While much of the detail of the Carbon Pollution Reduction Scheme has been drafted, the legislation is yet to be passed and there may be further changes as a result of amendments by parliament.

Recently, all states have recognized carbon rights for Kyoto forests, either as a separate part of forestry right legislation or independent of, but consistent with, forestry rights. Sale of carbon rights by a forest owner, whether separately from other rights or otherwise, is recognized for taxation purposes as a capital gain, rather than assessable income, and taxed under that provision. Most states have introduced carbon rights schemes that encourage carbon sequestration through tree planting on cleared agricultural land.

Where a primary producer engages in commercial forestry, any capital expenditure and net income streams associated with carbon sequestration and emissions are treated in the same way as those for wood production, expenditure for planting being chargeable against income at the time it is incurred. However, where trees are planted solely with the intention of sequestering carbon, and not for felling and commercial sale of produce, the cost of planting is treated as a capital expenditure and cannot be charged against income as a current expense. In effect, this is a disincentive to invest in carbon sequestration alone.

### ***National competition policy***

In 1992, the Commonwealth Government, with the support of the state governments, initiated a major independent inquiry into National Competition Policy. By 1995, a National Competition Policy had been established under the Commonwealth Competition Policy Reform Act, 1995 (Cth), and a supporting joint Commonwealth and state Compendium of National Competition Policy Agreement.

Commercial state-owned entities now have to be competitively neutral in pricing to avoid favouring their clients unfairly against the private sector suppliers of the same or similar products. All now have to pay similar taxes and dividends to those of the private sector. Most have now become state-owned corporations or entities that resemble private companies in the way they operate, other than in the greater bureaucratic control of borrowing and some residual covert, if not overt, influence of state ministers on sensitive issues.

This change has had a profound effect on the operations of state forestry agencies and state plantation entities. It has resulted in the separation of previously integrated government departments that spanned both commercial forestry and conservation management on public lands. Many of the forestry entities have become state-owned corporations and the remainder has commercialized their operations.

### ***Taxation of primary producers***

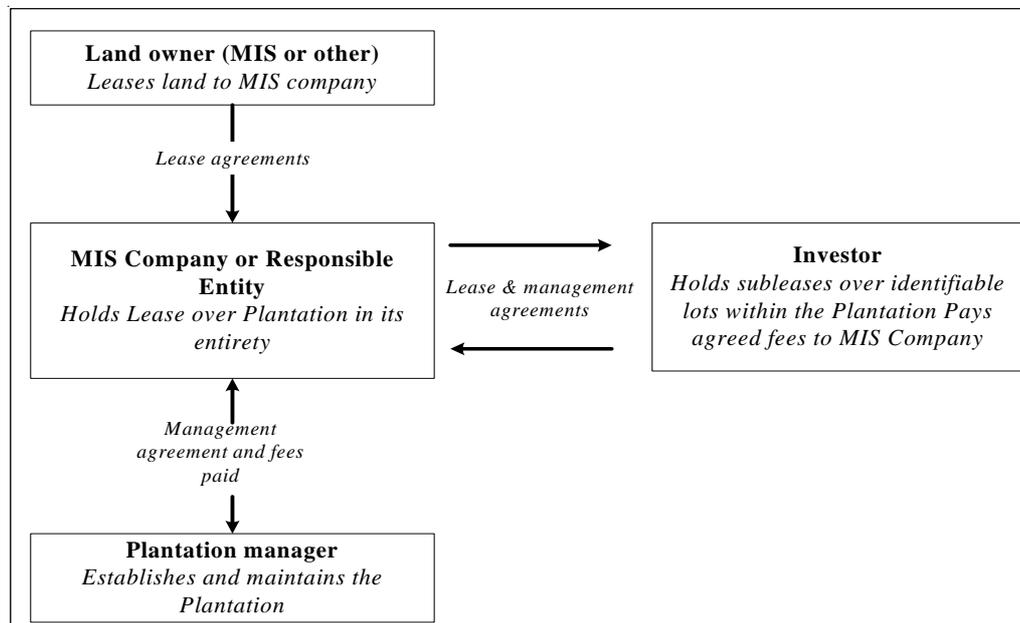
The Income Tax Assessment Act, 1997 (Cth), following earlier practices, recognizes primary producers as businesses that engage in plant or animal cultivation, fishing or pearling, or tree farming and felling. Although sometimes overlooked by individual sectors, this breadth of definition is important in reducing the scope for special pleading by one or other sectors. The definitions under tree farming and felling include all plantations or forests that are intended to be felled, and all activities associated with felling, to the point of delivery to the place where they are first to be processed. Primary producers can be individuals, partnerships, trusts, or companies.

### ***Taxation of MIS investors***

MIS date from the legislation introduced in the legislation that preceded the Corporations Act, 2001 (Cth). In 1995, the regulations were modified to enable agriculture and forestry investment to receive product rulings from the Australian Taxation Office (ATO) and this triggered the remarkable expansion in plantations that has taken place as MIS forestry companies formed and expanded their activities rapidly.

This type of pooled investment in plantations is not entirely new. Similar entities existed under previous legislation but lacked the product ruling and had to own or to have leased the land prior to the release of a prospectus. While some of these entities had a chequered history, some operated reasonably successfully and the remnants of one still exist. One of the major difficulties they faced was that the softwood plantation sector was dominated by state-owned plantations at the time and prices were administered, if not subsidized, by those entities, making it difficult for private growers to achieve a satisfactory return.

The typical structure of an MIS scheme from the investor's perspective is illustrated in Figure 4.



**Figure 4. Typical MIS plantation structure**

In the initial operations of MIS schemes, the Income Tax Assessment Act, 1997 (Cth) allowed MIS investors to claim a tax deduction for losses or outgoings from their assessable income if it was deemed to be incurred in carrying on a business for the purpose of gaining or producing assessable income. This clause was amended in 2007. It no longer recognizes MIS investors as carrying on a business, but it continues to allow investors to claim a 100 percent tax deduction for their ongoing contributions to forestry schemes. At least 70 percent of the MIS company expenditure under the project must be expenditure attributable to establishing, tending and felling trees for harvesting. This is referred to as 'direct forestry expenditure' (Australian Taxation Office 2007) and was intended to moderate excessive charges by some MIS companies.

To comply with the act, an MIS company must:

- Plant the trees within Australia within 18 months of receiving the funds – the closing date for receiving funds each year being the end of the Australian financial year.
- Ensure that the entity making the investment in the plantation and claiming a tax deduction is an investor in a scheme whose purpose is for establishing and tending trees for felling only in Australia.
- Ensure that the investor does not have any day-to-day control over the operation of the scheme.

Importantly, under the amendment, investors in an MIS scheme are now permitted to sell their forestry assets after four years of ownership via the Secondary Trading Mechanism. Previously, sale prior to final harvesting risked the loss of the taxation benefits derived at the commencement of investment by the MIS investor.

These two changes relating to direct forestry expenditure and secondary trading go a long way towards addressing the perceptive objections raised by Mackarness and Malcolm (2006) to the earlier wording of the MIS provisions.

Plantation establishment and management responsibilities are specified for an MIS company registered as the 'Responsible Entity' in a Product Disclosure Statement (PDS). These responsibilities typically include:

- Site evaluation and planning;
- Land preparation;
- Seedlings planted;
- Plantation maintenance over the life of the plantation – pest and weed control, fertilizer application, firebreak maintenance, general inspections;
- If appropriate, plantation thinning;
- Harvesting;
- Log processing; and
- Product marketing and selling.

Typical information found in a PDS is provided in Box 2.

#### **Box 2. Development of a PDS**

The PDS is the legal offer document needed to sell the interests in the project. The PDS must comply with section 1013D of the Corporations Act 2001. It must be registered with ASIC and contain all the information reasonably required by a potential investor to make an informed decision. It confirms the arrangement set out by the product ruling. The information typically included in a PDS is:

- Overview of the investment offer;
- Key features of the project;
- Benefits of the project or an outline of the positive features of investment in forestry;
- An outline of the organization making the offer;
- Detailed description of the project;
- Project fees, returns and risks;
- Taxation;
- Independent experts' reports; and
- Application form.

MIS companies are also required to provide investors with annual reports on the progress of their investment. These reports typically incorporate:

- Confirmation of their compliance with the arrangement as described in the product ruling and PDS.
- Advice concerning any changes in the tax laws since the issuing of the ATO product ruling for the project in question and whether this has had any effect on the investment.
- Information concerning significant changes to the market that may impact product marketing and subsequent returns, e.g., wood fibre prices and exchange rates.

- Changes to anticipated recurrent costs.
- A report on the health and well-being of the plantations including growth measurements, pests or disease, maintenance requirements and fire or drought impacts.

While MIS investors are allocated specific ‘woodlots’ or ‘timberlots’ and receive reports on them, their proceeds are the result of the sale of a pooled investment across all investors in the specific project pool. As such, MIS investments can be most simply thought of as a regulatory overlay for pooled or collective investments, regulated under the managed investment provisions of the Corporations Act, 2001 (Cth) (Cummine and Cannon 2007).

In addition to the tax deductions for establishment and maintenance costs at the time the investment is made, MIS companies also typically offer investors the opportunity to borrow funds for the investment. The loan is paid back over a period that is less than the full rotation, which, when combined with the tax deductibility provision, can offer additional cash flow benefits in the year of investment (Kelly *et al.* 2005).

## Regulatory control

ASIC is responsible for regulatory oversight of all private investment in Australia. ASIC presently discourages, if not bans, the use of financial and other forecasts in offer documents, although reference may be made to current prices and costs and expectations of yields in the independent forester’s report required to accompany it. Mackarness and Malcolm (2008) are critical of this inability to provide information that would later enable the prospectus proponent to be held to account by the investor, especially given that the independent forester is selected by and contracted to the MIS company. They argue for an ASIC-managed audit process.

The legislative and regulatory framework for investors and investment provides the structures and formal rules by which forestry operates as a business and how funds and from whom investment funds are raised. But there are many other elements that influence how prospective investments in forestry businesses are viewed, including:

- State and local government controls;
- Land markets;
- Labour markets;
- Risk management;
- Research and innovation;
- New resources;
- Infrastructure.

### **State and local government controls**

**State controls:** There is a raft of state controls relating to payroll and property taxes, stamp duty on land transactions, employment laws, health and safety regulations and environmental regulations. There has been some attempt in recent years to simplify them. A Goods and Services Tax is administered by the Commonwealth but the revenues accrue to the states and

are a uniform 10 percent across Australia (although some goods are exempt). The states have, as a result, reduced the scope and number of their individual taxes, although the progression to eliminate them has been slow. Differences between the states in these taxes and provisions sometimes create border anomalies, but harmonization has generally reduced them to minor issues.

**Local government controls:** Each state is further subdivided into local government areas. The local government bodies have responsibilities for local planning, community welfare and local infrastructure other than water, communications and energy and are mainly funded from local property rates. The most significant responsibility affecting forestry is that of land-use planning. Details vary between states but local government planning can dictate what is available for forestry use and under what conditions. In some states, local government bodies have responsibilities to administer the Code of Forest Practice on private land, even though they are poorly resourced in skills and funding.

Zoning is widely used at the local government level, most commonly to control the spread of development. Local governments control and to some extent may supply infrastructure services. In the interests of efficiency in the supply of these services, for local government or for residents, local governments may wish to consolidate urban development, for example, rather than bear the costs of developing and servicing a random spatial pattern of development.

Fischel (1995) pointed out that, to some degree, zoning can be seen as a response to the provision of public consumption goods of a local character. For example, zoning with respect to minimum size of 'hobby' farms may reflect a desire to maintain or enhance the aesthetics and ambience of a locality. Local owners all benefit but their consumption of these services has no effect on the capacity of other residents of the local government area to consume them. Tiebout (1956), in a seminal article, argued that free-rider and non-excludability issues could be overcome for local public consumption goods. People would "vote with their feet" and choose the local government area that offered the combination of services and zoning that best fitted their budget and preferences. Oates (1969) provided some evidence that this was indeed the case. However, the issues are now seen as more complex, because majority-rule voting in local government does not necessarily provide efficient levels of local public consumption goods and services. This is sometimes evident in zoning to protect particular types of agriculture under the rubric of 'protecting prime agricultural land', the rationale for which is more often due to local politics and property interests than efficiency. Examples of such zoning have been directed against plantation development in some areas.

### **Corruption**

Corruption is the abuse of public office for private gain (Callister 1999) and is of concern because it undermines property rights and the efficient and fair operation of the economy. While it can arise at the national level in Australia it is more likely to arise at state and local government levels because more direct oversight of planning approvals and oversight is undertaken at those levels and is less exposed to public scrutiny.

The Corruption Performance Index of Transparency International (2008) places Australia in the second highest level of its grades for freedom from corruption. Corruption in Australia is generally confined to sporadic petty corruption and occasional but significant major

corruption, most recently relating to urban land and property development. Most laws and regulations, however, are observed well as the penalties for corruption are severe.

## Land markets

Privately-owned land, and forestry and carbon rights can be freely traded, but changes of ownership must be registered and subsequent uses are subject to planning controls. These controls generally have well-established appeal provisions that are heard by expert tribunals.

Most MIS plantation investors do not purchase land as part of the MIS project. MIS plantation companies typically purchase land and finance their acquisitions by borrowing, raising equity in capital markets, or using their after-tax reserves or profits. A few MIS projects also include the sale of the land to the MIS investor, but as a specific investment separate from the plantation investment.

Competition between forestry and agricultural interests for land is common and the rapid expansion of MIS company or other forestry company purchases of land has resulted in a considerable backlash from resident farmers in the areas that have been major centres for expansion of plantations. Their complaints fall under four headings:

- The treatment of taxation for forestry investors is unfair to other primary producers.
- MIS companies have greater market power in terms of access to capital.
- Plantation development results in landscape and lifestyle change for remaining farmers.
- Plantations use too much water.

## Taxation

The provisions for the various types of primary producers are uniform and any benefits that accrue to forestry relative to others also bear the cost of a much longer period of production. Mackarness and Malcolm (2006) argue that there are no obvious shortcomings in the legal treatment of plantations relative to other forms of primary production. However, they go on to identify a deficiency in its administration by the ATO with respect to product rulings. Their concerns hinge on a clause referred to earlier that has been removed in the 2008 amendment of the act. Two new clauses stipulate that:

1. Seventy percent of the Defined Forestry Expenditure be spent on planting and associated establishment operations.
2. MIS investors are able to sell their holding at any time after four years have elapsed.

The first change should dampen the freedom that some MIS companies had in charging exorbitantly high fees, although it remains to be seen just how effective it is.

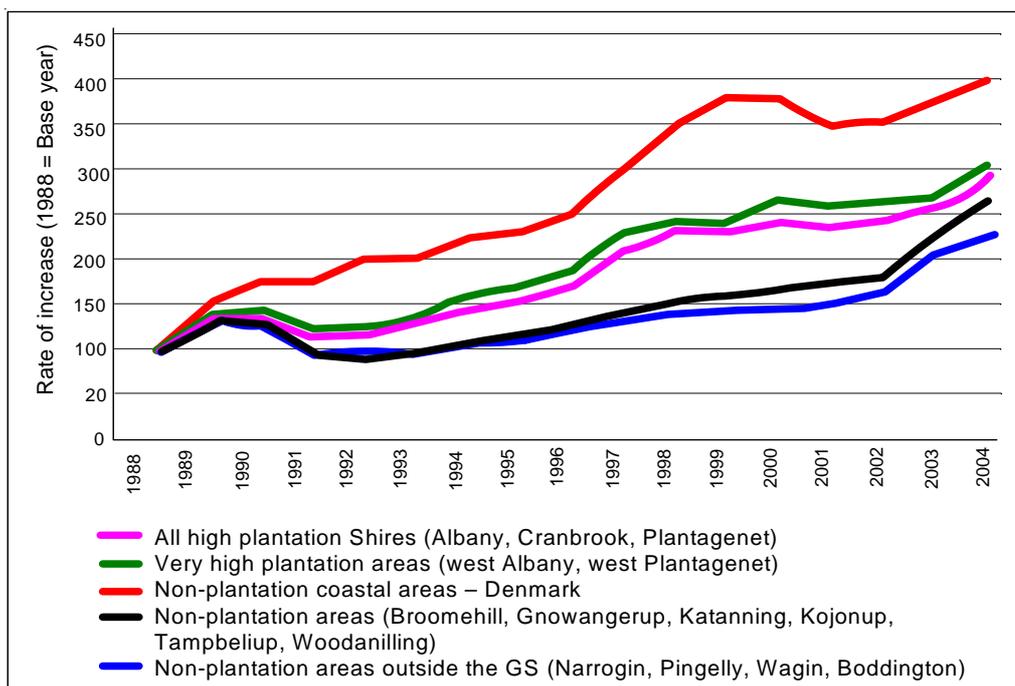
The second removes a major impediment that was probably responsible for the predominance of MIS schemes based on short rotation pulpwood production. The main species used was blue gum (*Eucalyptus globulus*), grown on rotations of ten to 15 years. Marketing indicated that most investors were reluctant to commit to waiting longer for

sawlog production, as the taxation treatment did not allow sale of the MIS investment until rotation age.

A secondary market for MIS and other plantations is expected to evolve as a result of this change and will greatly assist all investors. However, the ultimate beneficiaries may be the MIS and other plantation companies, who will be in a good position by dint of relative market domination of supply in the major localities to influence the purchase price paid for immature plantations. Purchase by the MIS company managing the estate would breach its trustee duties as the responsible entity, unless the terms of the Product Disclosure Statement permit. Even so, major MIS companies often have intertwined ownerships in an area and purchase by another would be possible.

### Access to capital

Research (Schirmer *et al.* 2005) indicates that plantation expansion affected the rate of change in rural land values during the years of high demand for land from the plantation sector. Land prices in areas suitable for plantations initially rose at a higher rate than land prices in other agricultural areas from the early 1990s onwards. Figure 5 illustrates these trends.



**Figure 5. Trends in Western Australian land prices**

Source: Schirmer *et al.* (2005).

During the most rapid expansion phase of new planting from the mid-1990s to 2000s, there was intensive competition to secure the best land in the major areas and this race was fuelled by a higher take-up of offers by a fewer number of MIS companies and projects. The demand

for land has since slowed or declined, take-up of offers has declined and the number of MIS companies and projects is much more geographically diverse, so that this issue is no longer a major argument against such schemes.

Moreover, higher prices assist structural adjustment, even if they are an irritant to those remaining farmers who would like to have purchased their neighbours' land but cannot match the price. As noted earlier, Lacey *et al.* (2006) argued that structural adjustment is a major rationale for maintaining MIS schemes. In any event, MIS expansion is not the sole culprit of high land prices – rural subdivision, farm amalgamation and urban encroachment all influence rural land use and associated values (Thompson 2007).

### **Landscape and lifestyle change**

A number of research studies (e.g. Schirmer and Tonts 2003; Spencer and Jellinek 1995; Williams *et al.* 2003) have studied the values and attitudes of existing landowners to the expansion of plantations. Of the several threads of concern, those relating to the change from a predominantly pastoral to a significantly sylvan landscape and to the expected decline in local social infrastructure (schools, health support and social venues) are entirely understandable but not easily remedied quickly. Contractors carry out most plantation operations and tend to reside in towns and cities, not on the plantation estate, strengthening the infrastructure of those towns. Furthermore, some of the expected decline in infrastructure is just a reflection of structural adjustment independent of plantation development, as the number of farming families is progressively reduced.

However, in one or two localities, relationships between the two groups have deteriorated to the point where damage has been done to plantation property. Consequently, most plantation owners now actively pursue 'Good Neighbour' codes of practice that require a greater degree of communication and liaison with their neighbours. Adjacent landowners are notified of harvesting and other major operations and attempts are made to ameliorate concerns about the risks to school buses, damage to local roads and other impacts on neighbours. The formation of plantation industry fire brigade units, embedded within the rural fire authority, has provided another avenue for positive support for neighbours, in addition to self-protection of the plantation asset.

### **Water**

One of the most recent and acute threads of concern regarding plantations among the agricultural community is that of water use, because of the drought that most of Australia has experienced over the past five years or more and the projections associated with climate change. Plantations may use more water than pastoral grazing uses and that property is being exploited beneficially to reduce salinity in some areas (Nambiar and Ferguson 2005). In others, however, inappropriate location or extent of plantations may reduce infiltration and runoff into water catchments and local dams (Benyon and Doody 2004; Benyon and Zhang 2008).

Plantation managers acknowledge that "some plantations in some parts of some catchments in some soil and rainfall conditions have the potential to reduce environmental flows" (Australian Plantation Products and Paper Industry Council *et al.* 2006). While Australia remains in drought this is an issue that is unlikely to diminish and much greater attention is

being paid to the impact on water use in the location and planning of large plantation developments.

## **Labour markets**

Fulfilling labour needs is a key requirement for the success of plantation and forestry companies. Forestry companies and agencies in rural areas have, until recently, faced a shortage in a number of critical skills. There are indications that the global economic crisis may alleviate this for a while but the migration of skills from rural forestry (and agriculture) to urban and mining areas appears to be a longer term trend that will reappear once recovery ensues. The larger agribusiness industry earlier identified skill shortages and the ability to identify skilled staff as being a significant issue (Lucas Group 2004).

A report sponsored by the National Association of Forest Industries and the Australian Plantation Products and Paper Industry Council (2006) indicated that in the forestry growing and management sector, there were a number of skill shortages. Nearly 70 percent of relevant organizations recognized foresters as being in short supply. Annual harvesting of hardwood plantations in Australia is scheduled to accelerate over the coming years, so the demand for labour, both skilled and less skilled, will increase.

Fulfilling this demand is likely to be challenging for the companies concerned. Steps have been taken to address these issues through the recent introduction of a better-funded Technical and Further Education (TAFE) system in which students will be given vouchers enabling them to select and pay the training institution.

Collaborative government-industry measures have also been initiated to improve recruitment of students into universities and the TAFE system. Yet one of the fundamental underlying issues has yet to be tackled in a major way. Unfavourable perceptions of forestry employment, along with other land management occupations, are evident among school leavers and job-seekers as shown by the marked decline in enrolments and enquiries. This is not just a cyclical downturn but reflects the false image the forestry industry (along with agriculture) has within the general community, as a low technology, 'sunset' phase industry.

## **Risk management**

All forests and plantations are potentially subject to damage from a range of pests, diseases and other physical risks.

### ***Pests and diseases***

The range of plantation species that have been planted via the MIS mechanism has been subject to a variety of pests and diseases, including competition from weeds, insects and browsing mammals. Depending on the rules and regulations of the state in which the plantation is located, and/or the constraints imposed by certification schemes (such as the Forest Stewardship Council), these pests are typically controlled through the use of chemicals approved for specific use in a forestry context.

## **Climate**

Over the past five years, Australia, in particular its southern portion, has been subject to its worst drought in 100 years. Most forests and plantations in southern Australia have been affected and their growth rates have likely been adversely affected. Most include allowances for these effects in their planning of wood flows. In general, drought effects are primarily economic by reducing growth and thus the ultimate yields at rotation age. The limited data available for radiata pine (*Pinus radiata*) suggest that a sustained 10 percent decrease in annual rainfall results in somewhat less reduction in growth. The impacts can be more serious when they result in pest or pathogen attack.

Some MIS companies protect themselves and their investors against lower than expected final yields by establishing their own areas of plantations within the particular planting project, often involving an increase of 10 percent over the total area established for MIS investors. Not only are the yields pooled along with those of the MIS investors in the particular project, thereby averaging out local site variations, but they may be used to 'top up' the average yield otherwise obtained for the MIS investors to bring them closer to the estimates provided in the Product Disclosure Statement. While this may be good insurance for the MIS company and MIS investor alike, it can cloud perceptions of the results actually obtained and more detailed reporting in annual reports to MIS investors would be desirable.

Throughout Australia, damage has occurred due to wind, hail, or frost but these risks are mainly local in character (Lewis and Ferguson 1993). However, in the northern portion of Australia, plantations are subject to the risk of cyclone damage. In 2006, damage was experienced by MIS plantations established on the Tiwi Islands off the coast of the Northern Territory.

The potential risks associated with future climate change, on the other hand, are more extensive and governments and industry are currently working to understand and assess them.

## **Fire**

Most Australian forests and plantations are subject to the risk of fire. Agencies responsible for the management of natural forests in multiple-use forests and national parks have well-established fire suppression and prevention capabilities.

Plantation companies employ fire management strategies to minimize this risk. Fire insurance is typically an option for the investors at the time of investment in an MIS plantation and in a few cases, is required by MIS companies. Mackarness and Malcolm (2006) were highly critical of the failure to require fire insurance for MIS investors, seeing this as another example of asymmetric information, where the seller knows more than the buyer, but does not convey it to the buyer.

This criticism seems overstated both as to the facts of the information provided on fire risks and insurance, and on the risks themselves (e.g., Ferguson 2005).

While individual MIS investors are encouraged to take out voluntary or, in some cases, compulsory fire insurance, larger private companies and forestry agencies often do not but

instead self-insure through the provision of fire suppression brigades and equipment. Fire insurance does not address catastrophic risk and this is the primary cause for concern in large plantations – modest fire damage can generally be accommodated by rescheduling the harvesting of older plantations and replanting of young plantations at relatively minor cost.

### **Site and species selection**

Almost all plantation establishment is now concentrated on cleared agricultural land that previously carried pasture. Nutrient levels are generally adequate but micronutrients can be deficient. Foliar testing of nutrient levels and fertilizer application based on the results are widely used.

Some recent MIS plantation companies have launched projects based on alternative species to those major species identified earlier. For these species, e.g., African mahogany (*Khaya senegalensis*), teak (*Tectona grandis*) and paulownia (*Paulownia tomentosa*), experience is lacking and the biophysical risks may not be clear for some time. While the independent foresters' reports acknowledge the risks, it is not clear whether the MIS investors are sufficiently aware of the risks they are taking. The rising cost of irrigation water, for example, effectively crippled some paulownia projects.

This is the problem of asymmetric information that Mackarness and Malcolm (2006) identified as a major concern in the MIS schemes. However, cost-effective remedies are difficult to identify because many of the people that invest in such schemes may be those who read and compare least. In any event, some may prove to be sound investments – only time will tell.

### **Research and innovation**

Research and development are some of the few forms of assistance that are permitted for 'manufactured goods', such as forest products, under the General Agreement on Tariffs and Trade. Australia has three main forms of research and development assistance to the forestry industry:

- Tax deductibility;
- Forests and Wood Products Australia;
- Cooperative research centres and special research centres.

Research and development effort is deductible from assessable income at a rate of 125 percent of the expenditure, provided it is carried out by the company or an approved provider. Approved research providers include government research bodies, universities and private research organizations that have met the registration requirements. While companies employ some staff working on applied research, the trend has been to divest major research activities to other bodies – notably CSIRO, the universities and the now much smaller state government research bodies.

The Forests and Wood Products Australia (FWPA) is a recently formed extension of the earlier Forest and Wood Products Research and Development Corporation (FWPRDC). The activities and arrangements for the FWPRDC continue in the new FWPA but its brief now extends to include promotion and marketing. The research and development activities, not

the others, receive a one-for-one subsidy by the Commonwealth Government relative to the funds raised for research and development through an industry levy. Most research is carried out by research providers who contest for the projects. Generally, up to one-half of the funding is contributed by industry sponsors or by the research provider itself. The multiplier of the levy is therefore substantial as the industry is able to claim a concession of 125 percent of its expenditure.

Cooperative research centres (CRCs) and special research centres are formal research and graduate education organizations (generally companies limited by guarantee) that collaborate in research across several universities and CSIRO divisions. The Commonwealth Government provides funding on the basis of approximately a three-to-one contribution basis. Industry funding in this case does not qualify for the 125 percent taxation concession but funding from the FWPA, including the Commonwealth addition, can be used in establishing the industry contribution. The Commonwealth Government calls for expressions of interest from research providers in meeting broad priority areas nominated by the government. The forestry industry has been successful in gaining support for a succession of CRCs over the last 20 years.

The activities of several other CRCs also complement the research and development support for the forestry industry, especially the Bushfire CRC. One of the notable outcomes of the FWPA and the CRCs is that they have engendered a much closer working relationship between researchers and industry as well as breaking down some of the research silos that otherwise tended to develop.

### **New resources**

History is being rapidly rewritten as the new resources from MIS investment and from regrowth of native forest reach rotation age.

The major force among the new entrants now coming on stream is the MIS blue gum industry. The majority of the early MIS-based plantation industry was based on the development of short rotations of this species for export as woodchips to Japan. These plantations are now reaching or approaching harvest age. While currently oriented towards international woodchip markets, the MIS industry is also seeking to develop higher priced domestic uses. In the case of shining gum (*E. nitens*) plantations, one Tasmanian processor has built a world-scale sawmill that will be more than 50 percent reliant on that species from its MIS plantations, the remainder being from softwood plantations. This eucalypt sawntimber is likely to compete with the higher strength grades of structural softwood that presently dominate the Australian market.

Interest has also be shown in engineered wood products and veneers, the latter based on regrowth native forest in Tasmania. Further investment in engineered wood products and veneer products seems likely in the near future based on MIS and regrowth resources. But these are mostly of hardwood species and of species and wood properties that are very different from the history of slow-grown native forests and larger log sizes.

The species include sandalwood (*Santalum* sp.), teak, red mahogany (*E. robusta*), African mahogany (*Khaya senegalensis*), spotted gum (*E. maculata*), flooded gum (*E. grandis*), acacia (*Acacia mangium*), radiata pine (*P. radiata*) and shining gum. Rotation lengths range

from 12 years for pulpwood production to 26 years and more for sawlogs (see Parsons *et al.* 2007).

## **Infrastructure**

Plans for harvesting and particularly processing of the various species and plantations that have been established via MIS continue to evolve and change.

Most forestry companies currently rely on road transport for the movement of their chips or logs. In response to the requirements of the rapidly increasing plantation harvest, Commonwealth and state governments have allocated significant funding to improve roads in relevant sections of the country – namely Southwest Western Australia and southern Australia in the ‘Green Triangle’ region. Regulations on the size and types of trucks permitted for use on Australia’s roads impact strongly on the transport economics of the plantation industry (Lambert and Quill 2006; PEECE Consulting 2006a,b).

The blue gum plantations developed through MIS that are currently reaching maturity in Western Australia have nearly all been grown for the Japanese export woodchip market. In southwest Western Australia a port facility dedicated to the loading of woodchips was established and began exporting in 2002. By 2007 this facility was exporting 1.7 million tonnes/year of woodchips worth approximately A\$80 million annually. A larger facility is currently under development in southwest Victoria for the plantations coming on line in the Green Triangle region. Export from Portland, Victoria is expected by 2010.

## **Providing incentives and removing constraints**

The principal premise of this study is that private sector investment is required to drive the next stage of development of the forestry industry in Australia, be it in the growing or the processing sector. Some of that investment will be solely associated with the development of the MIS resource. Some will span mixtures of old and new MIS and regrowth resources. And some will focus on expansion of the existing softwood resource. While providing incentives and removing constraints may be important to this investment, such measures need to be imbedded in a coherent national policy that coordinates Commonwealth and state government policies.

## **Biofuels**

Various technologies are available or nascent for producing biofuels or bioenergy based on forest and wood residues. In general, the scale and location of the resource relative to the biofuel or bioenergy plant are of great importance to the economics. Biological processes of conversion for an adjacent biofuel-using plant may be an exception, but are still to be proven commercially.

Some conservation groups have been reluctant to support these wood-based biofuel and bioenergy developments, and incentives to encourage them, for fear of financially advantaging native forest harvesting and/or altering the habitat for those native fauna

dependent on woody debris. The latter issue is capable of resolution through research and appropriate changes to state codes of forest practice. Pooling of the use of native regrowth forest and plantation residues is likely to be important in some areas to reach economic scale, so policy restrictions on the use of native forest residues need to be avoided or removed. Specific new research and policy incentives are required, including better access to venture capital for innovative schemes and processes. The case for new research and policy incentives rests on the pervasive influence of energy cost on all industries and is strengthened by emissions trading, if and when introduced. The research incentives might take the form of a higher taxation concession for this particular area but need to extend to venture capital investment in pilot plants. In addition to removing any constraints on the use of native forest residues, the policy initiatives need mainly to focus on addressing the negative public image created by opposition to the export of native forest woodchips.

### ***Sawlog production***

The resource base for softwoods needs expansion to meet local demand, but also to meet long-term productivity improvements through technological development that almost invariably require larger scale processing.

Recently introduced secondary market measures will encourage MIS companies and investors to pursue long rotation projects for the production of softwood sawlogs. But they will not achieve a major increase in long-term supply without differentiating between replanting and new planting to favour the latter. As noted earlier, this issue poses a dilemma for governments because any failure to replant is also unattractive with respect to carbon emissions. However, the MIS requirements for Defined Forestry Expenditure, noted earlier, could be differentiated by say 10 percent to provide greater incentive for new planting, subject to later adjustment to establish the right balance.

### ***Internationally competitive pulp processing***

A substantial resource base of hardwood and softwood pulpwood exists but the development objectives for processing this wood are unclear. Price trends in international trade appear to favour export of hardwood chips, rather than domestic processing, as shown by recent decisions of MIS companies to commit to export contracts rather than support new local processing. To some degree, this may just reflect the captive position that exists for many Australian producers in terms of shipping and clients, given the risks posed for processing new resources in a small domestic market. While the role of foreign investors in the resource base and woodchip export trade should not and cannot be taken lightly or discriminated against, processing opportunities in Australia need to be developed to internationally competitive levels. This inevitably involves world-scale pulp plants that are substantially reliant on export markets, given the relatively small domestic market.

Australia faces a dilemma in relation to overseas exports and imports of processed forest products. The influences of scale, technology and freight costs in the successful export of processed commodities such as pulp, paper, timber, veneer and panel products are all-important. The influences of scale and technology in the successful export of processed commodities such as pulp and paper will continue to outstrip aspirations for more Australian processing unless incentives are found for domestic processing, and constraints removed or at least streamlined. But world-scale pulp mills located in Australia imply a major proportion of

output to be exported. This poses a major risk if the startup time is coincident with a trough in the trade cycle in pulp (the so-called ‘years of hurt’ of earlier pulp mill proposals) and this risk has been a major disincentive to world-scale processing in Australia.

This may appear to be an argument that flies in the face of comparative advantage – namely that if we can produce raw materials more cheaply than Asian countries can and they can process the products more cheaply than we can, then specialization and trade on those terms is mutually advantageous. While there is merit in the underlying theory, the reality is that the playing field is far from level, partly by the historical accident of the postwar development of markets and freight and partly by deliberate design on the part of some but not all major clients through past and present tariff and non-tariff distortions to trade.

This is not to argue against all export of raw materials. Markets and relationships with longstanding clients need to be maintained and treated with respect. The need is to develop incentives in a way that encourages Australian-based joint ventures in processing with existing or new clients and reduces the risk in the early years. This involves joint Commonwealth and state policy initiatives to select suitable projects for support and addressing the negative image that this form of industry has acquired. It will also involve infrastructure subsidies or grants to improve road, rail and port development for the selected projects and some form of government-assisted conditional hedging to reduce the risks in the early years after startup.

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# Private sector investment in Cambodian forestry

Sok Bun Heng<sup>1</sup>

## Introduction

Cambodia is a forest-rich country that has emerged in recent years from long periods of intense conflict and war. The nation is now at peace, the economy is stabilizing and recent economic performance is promising, but social and political issues remain anomalous, significantly affecting the resolution of constraints in the forest sector, and elsewhere.

At the beginning of the 1990s, rich commercial forests had a very high value per hectare for industrial loggers. Until then, Cambodia's high forests had been largely inaccessible to internationally-supported industrial activity because of decades of war and a total lack of rural security, which ironically helped to preserve them. The high value of the forests attracted the timber industry which had already been very active for more than 40 years in Asia. This industry typically logged a very high volume of timber where it operated, and moved systematically through all the available forests in a highly unsustainable manner.

To utilize forest resources effectively, in the early 1990s the government decided to introduce private industrial forest concessions as the main instrument for commercial forest management. Later, for various reasons such as unsustainable forest exploitation by companies or their failure to prepare strategic management plans or consult with local people, the government introduced a range of policies to attempt to bring stability; these included a log export ban in 1996 and various declarations regarding illegal logging and forest encroachment. Subsequently, a range of laws, policies and instruments was adopted in 1998 that included planting fast-growing trees for woodfuel production, controlling timber processing capacity and encouraging modernization of wood-processing equipment and employment generation (Appendixes 1 and 2).

Despite these efforts, the issues remained and the government announced a logging moratorium in 2001 and the introduction of a new law on forestry in 2002. This suspended the issuance of logging permits to the remaining concessionaires until approval of new forest concession management plans consistent with the laws and regulations had been received. This required an inventory of logs legally felled prior to January 2002 and stopped the issuance of transport permits to concessionaires unless certain conditions were met.<sup>2</sup> Over 15 years, forest area diminished from 12 946 000 hectares in 1990 to 10 447 000 hectares in 2005, a drop of approximately 20 percent (FAO 2006).

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<sup>1</sup> Freelance consultant based in Cambodia.

<sup>2</sup> For example, only allowing transportation for processed and non-processed timber products from human-induced forests and rubber plantations as well as forest and non-wood forest products (NWFPs) derived legally from natural forests

The suspension of timber harvesting was a significant event and resulted in closure of mills and a shift in the focus from large-scale commercial operations to small-scale operators and more local management; it was supported in part by the community forestry subdecree implemented in 2003, resulting in 274 community forest areas being identified by 2005 (Rotha 2009). This in turn increased the number of operators and shifted markets from export to domestic orientation.

This ongoing turbulence together with a number of other legislative and non-legislative constraints (discussed below) discouraged private sector investment in Cambodian forestry. This study attempts to identify the main direct constraints to private sector investment in forestry as well as measures to address them through reforms.

## **Overview of forest resources and key players**

### ***Classification of main forest type***

According to the MRC-GTZ<sup>3</sup> Watershed Management Project (1996/1997), Cambodian forest cover is characterized by evergreen forest, semi-evergreen forest, deciduous forest and other forest types; land cover encompasses wetland, agricultural land, grassland, waterbodies and urban areas. Plantation forestry remains only a very small percentage of forest area.

**Table 1. Forest type and area in Cambodia (2005)**

<b>Forest type</b>	<b>Area (1 000 ha)</b>	<b>% of land area</b>
Primary forest	322	2
Modified natural forest	10 066	57
Productive plantations	59	>1
Non-forest areas	7 205	41
Total land area	17 652	100
<b>Total forest area</b>	<b>10 447</b>	<b>59</b>

Note: 2005 figures were used due to a lack of more recent detailed statistics; however, it can be noted that forest area and type has not changed significantly since then. Total forest area remains approximately 60 percent of the land area and productive plantation remains less than 1 percent of the forest area (Forestry Administration 2008).

Source: FRA (2006).

<sup>3</sup> Mekong River Commission-German Technical Agency for Cooperation.

### ***Importance of the forests***

In Cambodia, forests are clearly important in terms of livelihoods, economy and ecology.

***Livelihoods:*** Most people in Cambodia depend on the forest in many different ways. These range from meeting domestic requirements for fuel, food, bushmeat, medicine and construction materials, to earning an income from enterprises associated with the forest, such as resin-tapping and charcoal manufacture and even illegal logging. The most directly forest-dependent people are indigenous groups, whose livelihoods and cultures are intimately associated with the forest and whose way of life is threatened by the spread of settled agriculture.

***Economy:*** Forestry has contributed surprisingly little to the national revenue, not exceeding 4 percent at its peak in 1994, and now less than 0.5 percent. In terms of the contribution to the GDP, it is estimated to have only reached about 8 percent at its peak. However, the forest has contributed to the economy in other ways including provision of wood and non-wood products for construction and furniture-making, which are sometimes not accounted for in the GDP. At its height, it is estimated that nearly 37 000 people were employed in the sector. Furthermore, the whole rural economy of Cambodia depends on fish and rice, both of which depend on maintaining water flow, which is regulated in part by forest cover.

***Ecology:*** Cambodia's forest cover is some of the largest in the region; it provides important habitats for many species of animals, birds and plants.

Since Cambodia emerged from civil conflict in the 1980s its forests have been considered as important resources that could be utilized for the development of the nation. The Fifth Party Congress in 1985 identified forestry as one of four 'economic spearheads' and called for rapid expansion of forest production.

Because of the anarchic state of industrial logging during the mid- to late-1990s, the major focus of the government and key donors was on the timber and conservation values of forests. They were perceived to be priority areas of concern. Livelihood aspects and rural communities' forest dependency, particularly in relation to management of concessions and protected areas, seemed to take a back seat. Topics related to community interests in forest management were primarily relegated to NGOs to address through small-scale pilot testing of community forestry projects, generally in degraded areas.

### ***Forest management***

The government owns the forest land in Cambodia, although it recognizes prescribed access and use rights of local and indigenous communities, and can issue long-term economic concessions. Established in 2003, the Forestry Administration (FA) is a government authority for forestry under the Ministry of Agriculture, Forestry and Fisheries (MAFF). It is a new, alternative system responsible for the overall management of forest and forest resources in accordance with the National Forestry Sector Policy and the Forestry Law. The FA has a vertical management and organizational structure for the whole country, which is divided into central, inspectorate, cantonment, division and triage forestry administration levels. This new organization was established following the commitment of the Royal Government of Cambodia (RGC) to implement 'forest sector reform' in the forest sector.

The central FA supervises four inspectorates, 15 cantonments, 55 divisions and 170 triages. There are 13 offices at this level. The Inspectorate Forestry Administration, the Cantonment Forestry Administration, the Division of Forestry Administration and the Triage Forestry Administration are divisions at the local level.

Generally, forest management systems have been implemented according to the land and forestry laws; they consist of a hierarchical series of policy steps relating to allocation of land for different purposes: indigenous titles, protection, production and conversion

### *Indigenous titles*

Indigenous peoples in Cambodia are mainly confined to the more remote and forested regions. Their cultures and livelihoods are closely interconnected with the forests in which they practice extensive forms of agriculture through swidden cultivation. Swidden is an intrinsic part of the livelihoods of indigenous groups in Cambodia. Apart from being a production system, it is also an inherent element of their socio-cultural way of life. Under the Land Law, indigenous collective titles enshrine the legal rights of indigenous communities to practice swidden agriculture and they are legally recognized. The indigenous title constitutes a prior claim to land resources that are both forest-based and agricultural and must have been established prior to any other claims on the land.

Under the Land Law there is legal provision for collective titling of indigenous lands. The process of identifying indigenous peoples and their lands is currently being piloted to support the drafting of a subdecree and the completion of the collective titling process.

### *Protection*

Cambodia has a relatively extensive protected area system. However, it excludes some areas of high significance and includes other areas of degraded forest or of limited ecological significance. This situation should be addressed and the total area reduced to focus on threatened resources and smaller more valuable areas.

### *Production*

The current management system is focused on the commercial concession system and community forestry. As well as these legal systems, illegal logging takes place in and around the concession and community forest areas; unorganized forest management occurs throughout most of the forest area.

The concession system was introduced in the early 1990s to mitigate the anarchic logging of the past. The community forestry system has demonstrated that communities can manage forest assets and where community titles are established they are usually respected by other people. Forestry statistics for 2006 (Forestry Administration 2008) indicated that 179 020 hectares were recognized as being under community forestry management. However, economic land concession areas overlap with community forest areas. Associated with the concession system has been the illegal logging of commercial quality timber, much of it for export. This is no longer the case after the government withdrew all forest concessions; however, smaller scale illegal logging continues. Unorganized forest management applies,

de facto, to virtually all the forest areas if post-concession evergreen, deciduous and some protected areas are included.

### *Conversion areas*

This refers to residual land categories for conversion to non-forestry purposes. Conversion includes both legal processes such as economic and social concessions. The economic land concession is a legal mechanism to transfer the use rights to state land to private companies to use for economic purposes; the social land concession is a legal mechanism to transfer private state land to the poor who lack land for residential and/or family farming purposes.

## **Key players in forest and related resources**

### ***Government institutions***

The key government institutions that liaise with the MAFF *vis-à-vis* management of forests and related resources are: the FA, the Ministry of Environment, the Ministry of Land Management, Urban Planning and Construction, the Ministry of Water Resources and Meteorology, the Ministry of Economy and Finance and the Ministry of Interior. However, vague terms of reference provide room for misinterpretation of responsibilities and generate conflict, especially among institutions responsible for various resources.

### ***The private sector***

Currently, private, national and international companies or individuals can be involved in the management of forests and related resources through private investment (economic land concessions). A company wanting to invest has to submit a letter of interest to the office of the Technical Secretariat for Economic Land Concession (TS) located in the MAFF. The application will be forwarded to the Council of Ministers for approval. The Council of Ministers instructs the TS, MAFF, the company and other relevant institutions to study the proposed area to make sure that it is not land that local people are using, reserve forest land or in a protected area. Finally, the company has to develop a proper management and development plan and make an investment contract with the MAFF before starting any activities. Since mid-2007, applications for economic land concessions have had to follow this procedure regardless of the size of the concession area.

From 1993 to 2007, 96 economic land concessionaires (ELCs) occupied a total area of around 1 272 007 hectares. Some ELCs were cancelled between 2003 and 2006 due to conflict with local people or the company failed to comply with provisions in the contract. In 2007 only 66 ELCs were still valid with a total concession area of 1 006 777 hectares.

### ***Small-scale forest industry***

According to forestry statistics in 2006, there were 49 official forest industries comprising 11 sawntimber factories, 12 plywood and furniture industries and 26 handicraft producers. There are a number of other forest industries that have not been officially registered or operate illegally. Since 2002, due to restrictions in the transportation of forest products,

most of the sawntimber operations and plywood and furniture industries have closed, but small-scale activities still continue with timber supply coming from illegal small-scale logging.

While the transportation of forest products is now prohibited, illegal transportation of timber to supply the handicraft sector still exists. Many furniture makers in Phnom Penh receive timber from black market suppliers.

### ***Local communities***

Local communities are the key players in the management of forests and other forest resources because they own the forest. The Forestry Law states that (sic):

*For local communities living within or near the Permanent Forest Reserves, the state shall recognize and ensure their traditional user rights for the purpose of traditional customs, beliefs, religions and living as defined in this article. The traditional user rights of a local community for forest products & by products shall not require the permit. The traditional user rights under this article consist of:*

- 1-The collection of dead wood, picking wild fruit, collecting bees' honeys, taking resin, and collecting other forest by-products;*
- 2-Using timbers to build houses, stables for animals, fences and to make agricultural instruments;*
- 3-Grass cutting or unleashing livestock to graze within the forests;*
- 4-Using other forest products & by-products consistent with traditional family use;*
- 5-The right to barter or sell forest by-products shall not require the permit, if those activities do not cause significant threat to the sustainability of the forest. The customers or any third party who has collected forest by-products from local communities with the purposes of trade, in a manner consistent with the provisions of this law, shall have the permit for forest by-products transportation after royalty and premium payments.*

The Forestry Law also has the following restrictions (sic):

*A local community can not transfer any of these traditional user rights to a third party, even with mutual agreement or under contract. These traditional user rights shall be:*

- 1-Consistent with the natural balance and sustainability of forest resources and respect the rights of other people;*
- 2-Consistent with permissions and prohibitions under the provisions of this law.*

### **Investment attractiveness**

The economy is stabilizing and recent economic performance has been promising, which is attractive for investment.

Many laws and regulations are being developed to attract more investment in the forest sector (Appendixes 1 and 2). The Investment Law developed by the Council for the Development of Cambodia, effective since 14 June 2006, is the key law to assure the interests of both national and international investors. A clause states (sic): *A foreign investor shall not be treated in any discrimination way by reason only of the investor being foreign investor, except in respect of ownership of land as set forth in the Land Law.*

### **Investment incentives**

The Investment Law also addresses Qualified Investment Projects (QIPs) – investment projects that have received final registration certificates. Incentives include exemption from tax on profit imposed under the Law on Taxation through a profit tax exemption period. The tax exemption period is composed of a Trigger Period (when the company can make profit on its investment) + 3 years + a Priority Period to be determined by the Financial Management Law. The maximum Trigger Period is the first year of profit or three years after the QIP earns its first revenue, whichever occurs sooner. This is advantageous for long-term investment projects, such as investments in ELCs that take a long time to yield profit.

### **Land availability and ownership**

Land is still available for forest investors and will be provided by the government via land concessions. A private investor reported that land was available to buy or lease either from private individuals or from the state, but land is now becoming expensive and involves more risk (associated with land grabbing by military families, landless families or unclear demarcation of boundaries). The Law on Investment states that (sic): *The land ownership serving the investment activities is to be vested in Cambodian natural person or legal entity in compliance with the law in force. Foreign legal entity may use the land in various form, including concession, long term lease for 15 years or more, and renewable short term lease.* The law also allows subleasing to third parties: *Any natural or legal entity who lease any piece of land from the State may sub-lease such land to a third party only if he/she obtained express prior approval or authorization from the competent authority.* The MAFF being the ‘competent authority’ for forest-related investment, there is no doubt that subleasing needs prior approval from this ministry.

### **Local labour cost and skills**

The labour force available at the local level receives wages ranging from US\$2 to US\$5 per day depending on the type of work. Local people would prefer to work near their homes rather than look for work elsewhere; therefore, an ample labour force is available. Some skilled labour is also available, but may not meet job standards and so outside assistance is required. The Investment Law states that: *For the recruitment by the investor of foreign staff and management experts, technical staff, skilled workers who are not available among Cambodians citizens, the Council shall help facilitate investor to obtain the right to recruit those foreign employees to work as needed, in accordance with the labor law, immigration law and relevant regulation in force.* In summary, the cost of waged labour, especially in rural areas, is lower than other countries in the region. This is attractive for investment in the forest sector as most activities will take place in rural areas.

## **Remittance of wages**

Foreign employees can remit their wages and salaries earned in Cambodia to their home countries, after payment of appropriate taxes, in foreign currencies obtained through the banking system.

## **Forest product export law**

The subdecree on Type of Forest and Non-timber Forest Products to be Allowed to Export or Import was enacted on 26 November 2006; although it has restrictions for some products, it allows the export and import of others. Over more than a decade, the price of wood and other forest products has increased sharply. Permitted and prohibited forest products for exports are listed below.

The following products can be exported:

- Processed and non-processed timber products derived from human-induced forest. Timber products from rubber plantations are under different jurisdiction.
- Forest products and NWFPs derived legally from natural forest:
  - furniture and bookshelf parts;
  - wood carvings, wooden toys, decorated wood products, souvenir products, office equipment made of wood and NWFPs and other similar products;
  - parquet and floorboards;
  - assembled or unassembled wooden crates and pallets;
  - moulded and sanded wood, door and window frames, finger-jointed board, wood for tool handles;
  - glue-bonded wooden boards;
  - particleboard and plywood;
  - wood veneer;
  - cross-cut wood, 15 cm maximum thickness, with or without bark;
  - S2S or S4S (smoothed two sides or smoothed four sides) of export quality;
  - wood chips, wood pulp;
  - wooden matches, toothpicks, chopsticks;
  - railway sleepers (except luxury wood);
  - square wood with a maximum width/thickness of 25 cm, seasoned naturally (sun-dried) or in kilns;
  - picture frames, photo frames, glass frames, carving boards with holders and other similar products;
  - timber or NWFPs processed by following traditional style;
  - bamboo plywood, assembled bamboo sticks or boards, rattan, vines and other similar products;
  - all kinds of wood resin/latex and wild mushrooms;
  - oil extracted from timber and NWFPs;
  - products from medicinal plants, poisonous plants, sweet-smelling plants, biochemicals and substances for tannery plants;
  - flowers, leaves, fruits of wild plants;
  - products processed from all types of NWFPs;

- wildlife products, processed or unprocessed and wildlife specimens from common species.

The following products cannot be exported:

- logs, whether debarked or not;
- crude or rough sawntimber;
- squared logs with a thickness or width of more than 25 cm, even when smoothed;
- oil extracted from *Dyxsilum lorreiri*, yellow vine and yellow vine powder;
- fuelwood and charcoal from natural forests.

### ***Royalties and premiums***

The Forestry Law clearly addresses royalties and premiums on forest products and by products as condensed below:

- Any individual or legal entity harvesting forest products and byproducts for commercial purposes within the Permanent Forest Reserve shall pay royalties and premiums to the national budget through the FA. The RGC shall determine the royalties and premiums upon the joint proposal of the MAFF and the Ministry of Economy and Finance.
- The state will not require the payment of royalties or premiums for the harvesting of forest products and byproducts from private forests.
- The Model Forest Concession Management Agreement shall include a table of royalties and premiums on forest products and byproducts.
- The Minister of MAFF may reduce or waive the royalties and premiums for any forest products and byproducts collected from the Permanent Forest Reserve for scientific purposes or to create an economic incentive to efficiently use forest products and byproducts.
- The state shall waive the royalties and premiums for any forest products and byproducts collected by local communities under customary user rights or harvested in community forests under the Community Forest Agreement.

However, in practice, companies or private investors who have poor relationships with government officials may be asked to pay more. A private investor complained that besides official payment to the authorized institutions he was always asked by the military, police and local authorities to provide money and other support.

### ***Investment constraints***

Unofficial interviews with some investors during the study revealed that the availability of capital for investment is not always the biggest problem. The main constraints are the conditions that prevail in the forest sector, the country and internationally. These include factors related to governance and institutions, such as the level of trust, transparency and accountability, the prevalence of illegality and corruption, the existence of stable laws and

policies, the ability of government institutions to enforce the law, lack of tenure security or clarity on land and forest resources, and access to and reliability of information

### ***Procedure and requirement for starting land-based business and licencing***

Investors seem to be unclear on the proper authority to approach and process for opening a business. Procedures and requirements for opening a business in the forest sector are not widely disseminated by the government or related authorities to investors.

As described earlier, to open a business in the forest sector, a letter of interest must be submitted to the MAFF. The MAFF will then send the letter to the Council of Ministers. If the Council of Ministers approves the application it will inform the MAFF and ask the MAFF, the TS, the local authority and other relevant institutions to assess the site, demarcation of the boundaries of the concession land and check if the land overlaps with local people's land. Once allocated the concession land in principle, the company will have to register it as private state land and draw up a contract with the MAFF. Before starting any activity on the site the company has to prepare a management and development plan together with the local authority and local people and seek permission from the MAFF.

However, this procedure can take a long time and be hindered by unscrupulous officers in pursuit of graft who delay processing to a higher level. Companies can have no option but to choose a powerful person to facilitate their affairs by paying her/him a considerable amount of money. Moreover, the concession holder will also have to pay a large amount to obtain a licence to transport products locally or export to the international market. An investor reported that apart from these charges, there are also 'fees' levied by the police and military for transportation and vehicles may be stopped indefinitely if they are not paid.

***Registering property:*** Similar to licensing, registering property usually takes a very long time and many levels have to be approached. At each level costs are incurred if matters are to progress swiftly.

One investor indicated that he could have waited several months to get his property registered, but this was accomplished in just a few days when he decided to pay an authorized person unofficially.

***Investor protection and closing operations:*** Although the Investment Law and other associated subdecrees and regulations provide assurance for investors, in reality the government cannot protect their operations if they conflict with local communities. Sometimes the government can only solve a conflict of interest between a company and the local community by stopping the concession. This is a bleak outlook for some major investors, but does not necessarily affect small-scale investors such as communities or those investing in forestry plantations.

***Corruption within government institutions:*** In those institutions with the greatest scope for rent-seeking, staff generally pay for their jobs, make regular payments to keep them and expect to recoup these expenses through corruption. Money generated through corrupt practices often flows upwards through a pyramidal structure, with the largest share accumulating at the top of the hierarchy. The burden of everyday corruption in Cambodia falls proportionately most heavily on those without the power and connections to resist.

As the institution directly responsible for managing the exploitation and policing of one of Cambodia's most valuable natural resources, the FA has opportunities for corruption. Entry into and promotion within the FA is dictated largely by payment rather than competence. This 'market' system of job-buying can have the effect of sidelining those staff with greater professional integrity and rewarding those most adept at generating money.

The pricing of jobs within the FA is determined not only by rank, but also by geographical location. Outside of its Phnom Penh headquarters, the more highly paid positions are those in areas where there is a rich and accessible forest resource or along key transport arteries for the timber trade, such as major roads and rivers. According to one insider, positions in Kompong Thom command the highest price of any province, followed by those in Siem Reap, Kandal and Koh Kong provinces.

## **Conclusion and recommendations**

The economy is stabilizing in Cambodia and recent economic performance has been promising, which is attractive for investment. In this context, many laws and regulations are being developed to attract more investment in the forest sector. The Investment Law developed by the Council for the Development of Cambodia, effective since 14 June 2006, is a key law to ensure the interests of both national and international investors.

However, these laws and regulations are impeded by factors such as: the level of trust, transparency and accountability in governance and institutions; the prevalence of illegality and corruption; access to and reliability of information; lack of tenure security; poor clarity relating to land and forest resource issues; unfair treatment of investors; complicated or long procedures for registration of property or opening a business; and lack of a legal, political and institutional environment to provide stability and security in the long term.

Investment in the forest sector will be increased if the following measures to remove these constraints are taken:

- Simplify procedures and requirements for starting a forest-based business by setting clear procedures and time frames for approving the application and widely disseminate relevant information to potential investors.
- Pass and implement the draft Anti-Corruption Law without further delay.
- Clarify forestry land-use and ownership rights.
- Strengthen the legal framework governing the management of forests and forest resources.
- Ensure full and continued disclosure of information concerning the management of forests.
- Ensure that this information includes the following: investment agreements, contractual conditions and compliance status (completion of satisfactory environmental and social impact assessments, payment of royalties, etc); exploration, exploitation, transportation and export permits awarded; names and details of the owners of the companies concerned.
- Improve financial integrity in both the public and private sector.

- Improve transparency and accountability as well as law enforcement against organized crime or white-collar crimes (not just the logging process); more funds from forest-based businesses should be available for forests and local communities.
- Build strong political will and commitment to forestry by the government at all levels in order to develop a robust financing mechanism in the forest sector.
- Strengthen judicial authorities to ensure the protection of investors' interests.
- Support the efforts of the judicial authorities to investigate and prosecute those responsible for illegal activities.
- Dismiss any government ministers, officials and military officers responsible for these illegal activities.
- Increase transparency in the management of forest and forest resources by providing all relevant information to all parties concerned and find mechanisms for exchange of information.
- Introduce mechanisms to ensure that all contracts between the government and companies concerning the management, exploration or exploitation of natural resources and other public assets proceed from an open tendering process conducted in line with international best practice.
- Introduce mechanisms to ensure that the government and private investors annually disclose details of all taxes, royalties, signature bonuses, etc. received from concessions on public assets.
- Withdraw all military units stationed inside or near forest areas.
- Balance commercial and non-commercial interests regarding forest resources.
- Increase the level of responsibility allocated to the Forest Crime Monitoring Unit and the capacity provided to implement direct action (Rotha 2009).

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## Appendix 1. Laws, policies and instruments relating to forest concession planning and management

Item	Year issued	Issuing authority
Forestry Law	2002	Royal Palace
Decree-Law on Forest Management	1988	Council of Ministers
On the Establishment and Management of Watershed Areas in the Kingdom of Cambodia	1999	Royal Palace
On Protected Areas for Nature	1994	Royal Palace
On Timber and Non-Timber Forest Products Allowed for Export and Import (Attachment: Processes of Request for Export-Import of Timber and Non Timber Forest Products)	2006	RGC
State Land Management	2005	RGC
Legislation on Establishment Clarification and Registration of Permanent Forest Estate		RGC
On the Community Forestry Management	2003	RGC
On the Preparation and On-going Activities of MAFF	2000	RGC
On Forest Concession Management	2000	RGC
On the Establishment of the National Committee to Manage and Execute Forest Management Policy	1996	RGC
On Forest Coupe Bidding for Harvesting	1991	Council of Ministers
On the Promulgation of Permission Letters in the FA	2004	MAFF
On the Working Procedures of Police of Justice	2004	Min of Justice
On the Promulgation of Forest Revenue Management System	2003	MEF and MAFF
On the Postponement of Logging in Coupes of Forest Concessions	2001	MAFF
On the Postponement of Log Transportation Belonging to Concession Companies	2002	MAFF
On the Limitation of the Maximum Weight of Vehicles with Forest Products Transported along Roads in the Kingdom of Cambodia	2001	MAFF
On the Management and Control of the Use of Chainsaws, Equipment and Machinery in Forest Harvesting Activities	2000	MAFF
On the Measures to Suppress Anarchic Activities for Land Encroachment	1999	RGC
On the Official Use of the Cambodian Forestry Code of Practice for Forest Harvesting	1999	MAFF
On the Measures to Control and Suppress Anarchic Activities in the Forestry Sector	1999	RGC
On the Use of Standard Letter for Forestry Officers	1989	Inter-Ministries
On the Prohibition of Export of Round Logs and Sawn Wood from the Kingdom of Cambodia	1996	RGC
On Illegal Logging and Export	1996	RGC
On Royalties and Log Prices for Buying and Selling at Export Check Points	1996	Inter-Ministries
On Forest Policy	1995	RGC
On Tree Species to be Prohibited for Cutting	1993	MAFF
On the Rules of Forest Coupe Bidding for Harvesting	1991	MAFF

On the Establishment and Management of Sawmills, Wood Processing Factories, Workshops and Handicrafts Using Raw Materials of Forest Products, Charcoal Kilns, and Depots for Forest Product Trade Belonging to the State, State-Private and Private Entities	1989	MAFF
On the Suppression of Wildlife Destruction in the Kingdom of Cambodia	1996	Inter-Ministries
On the Organization and Functioning of Forestry Administration	2003	MAFF
On Forest Products to be Prohibited and Allowed for Export, and the Identification of Export Checkpoint	1997	RGC
On Forest Revenues for Forest Protection and Maintenance	1991	Council of Ministers
On Forest Revenues for Forest Protection and Maintenance	1991	MAFF
On Export-Import of Forest Products	1988	Council of Ministers
On Technical Order of Commencing Exploitation	1988	MAFF
On the Technical Rules of Post-Harvesting for Forest Hygiene	1988	MAFF
On the Technical Rules of Pre-Harvesting	1988	MAFF
On the Use of the Cambodian Forestry Steel Hammer Stamp to Officially Mark Logs	1986	MAFF
On the Rules of Cooperation for Forest Harvesting in the Peoples' Republic of Cambodia	1986	MAFF
On the Classification of Tree Species and the Minimum Size to be Allowed for Cutting	1986	MAFF
On the Transportation of All Types of Wood, Equipment and Goods along Roads in the Kingdom of Cambodia	2001	RGC
On the Payment for Forest Protection and Maintenance	1991	Inter-Ministries
On the Payment for Forest Protection and Maintenance	2000	Inter-Ministries
On Prices of Forest Products	2000	MAFF

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Source: Forestry Administration Web site (<http://www.forestry.gov.kh>).

## Appendix 2. Evolution of forest policy in Cambodia since the 1980s

Since the 1980s, numerous regulatory instruments have been developed with the primary aim of regulating the timber industry and ensuring that royalty payments are collected and used for national development. Limited rights of local communities to harvest forest products are also included in the regulatory framework. Policy statements have been modified over time to fit the situation and trend of each stage. The following paragraphs summarize the key instruments that have been enacted since the 1980s.

The Forest Practice Rules of the People's Republic of Kampuchea, Kret No 35 signed 25 June 1988, was the principal forestry law prepared by the People's Republic of Kampuchea. This law remained in force until 2002 and hence was in existence at the time all forest concession contracts were signed. It states that the forest resources in the entire country are the property of the state and are under its administration. It provides that the Ministry of Agriculture shall make decisions on permits for *harvesting of trees or the gathering of sub-products for familial or public uses*. Article 17 of this law prohibits the cutting of resin trees, stating that it *shall be forbidden (...) to fell the trees that people have tapped for resins*.

A subdecree on the creation of a National Committee to Manage and Execute Forest Management Policy was passed in 1996. This committee was given responsibilities for *...the development, research and evaluation of forest policy of the Kingdom of Cambodia*. The committee had a high-level membership, which included the then two Prime Ministers, along with senior representatives of the Council of Ministers, and the Ministries of Economics and Finance, Agriculture, Forestry and Fisheries, Defense, Interior, Planning, Commerce, Environment, the Council of Development and the Department of Forestry. Clearly, forest policy was seen as an important national issue and one that required a dialogue across most sectors.

A subdecree on Forest Concession Management was passed in 1999. The purpose of this subdecree was to *develop a forest concession planning, implementation and control system which will lead to balanced, sustainable and technically competent management of production forests in the Kingdom of Cambodia*. The subdecree also stated other purposes, including to (sic):

*Ensure that concession forest management regimes conserve and protect natural biodiversity, ecosystem function and important forest services such as soil conservation and watershed regulation; ...Protect, and maintain rights of access to, those forest resources occurring on concession areas that are of economic, subsistence and spiritual value to local communities.*

The National Forest Sector Policy of July 2002 was followed by a new Forestry Law enacted in August 2002. This law provided the legal framework for the new forest sector policy. The law applies to all forests, whether natural or planted, although it excludes flooded forests. Among its provisions of direct relevance for this paper are (sic):

*Each concessionaire shall prepare forest concession management plans for all levels as follows:*

- 1- Long-term management plan for the entire forest concession;*
- 2- Annual operational harvesting plan for each coupe level; and*
- 3- Block management plan for each annual harvest.*

*The forest management plan, and any revision, shall be determined by the following rules:*

- 1- Approval of the management plan for the entire forest concession by the Minister of Ministry of Agriculture, Forestry and Fisheries, upon the recommendation of the Head of the Forestry Administration. This management plan shall be revised every five years.*
- 2- Approval of the Annual Operational harvesting plans and Block Management plans by the Head of Forestry Administration.*

*Production Forest not under concession shall be managed with the priority use to meet domestic annual needs for Forest Products & By-products. These products may be exported only upon showing that the supply is higher than the local demand and with the approval of the Royal Government upon request by the Ministry of Agriculture, Forestry and Fisheries.*

*All Forest Products & By-products located and originating from the Permanent Forest Reserves are state property, unless the rights of these products have been conveyed to an individual or legal entity pursuant to provisions in this law.*

*Any individual, legal entity or community that intends to harvest Forest Products & By-products for commercial purposes must possess a harvest permit issued by the Forestry Administration.*

*Harvesting of Forest Products & By-products, by members of local communities, at the amount equal to or below customary subsistence use defined in Chapter 9 of this law, shall not be required permits."*

*Sub-Decree on forest and non-timber forest products enacted on November 2006 allows for export and import of forest and non-timber forest products.*

Statement of the Royal Government on the National Forest Sector Policy:

*Within the context of conservation and sustainable forest management initiatives, a maximum involvement of the private sector and participation of the local population shall be achieved in order to ensure food security, poverty reduction and socio-economic development.*

*A wide range of coordinated multi-stakeholder processes shall be implemented to enable the harmonization of the different perceptions, interests and objectives of the various forest interest groups at all levels.*



# Improving the investment environment for the development of private sector forestry in the People's Republic of China

He Xiangrui and Dai Guangcui<sup>1</sup>

## China's forest resources and the development of private sector forestry

In China, private sector forestry is a new concept that involves investment by contracted farmer households, self-employed households and private enterprises as well as investment by organizations from the Hong Kong Special Administrative Region (S.A.R.), Macao, Taiwan, Province of China (P.O.C.) and overseas countries. 'Non-public economic bodies' (hereafter referred to as the private sector) is a general term for all ownership modes and management patterns which are not wholly state-owned or state-managed under the aegis of the socialist market economy. Private sector forestry has two components: firstly, forestry economic groups established with non-governmental capital, including self-employed households, sole proprietorship, joint ventures, Sino-foreign cooperative businesses and exclusively foreign-owned enterprises; secondly, state-owned and collectively-owned forestry economic groups and mixed share-holding groups with the government having some share (Lei Jiafu 2008).

### *Status quo of forest resources and the forestry industry*

According to the Sixth National Inventory on Forest Resources, by the end of 2006, the forestry land area in China totaled 284.9 million hectares and the actual forested area totaled 174.9 million hectares, including 53.6 million hectares of plantations. The forest cover was 18.21 percent,<sup>2</sup> the total standing stock volume was 13.6 billion m<sup>3</sup> and the forest stock volume was 12.4 billion m<sup>3</sup> (SFA 2006). The collectively-owned forestry land area totaled 169.8 million hectares, accounting for 60 percent of the total forestry land; the area of collectively-owned forest amounted to 99.4 million hectares, accounting for 57.55 percent of the total. Over half of China's forestry land and forest is collectively owned (SFA 2007a; Appendix 1a-d). In 2006, 2.7 million hectares of plantations<sup>3</sup> were established – 1.3 million by private sector groups, accounting for 49.8 percent of the total plantation area. The gross forestry output value was US\$133.1 billion<sup>4</sup> (see Figure 1); the timber yield was 661.1 billion m<sup>3</sup>, the yield of bamboo timber reached 1.3 billion stems, the output of wood-based panels reached 74.2 million m<sup>3</sup>, the

<sup>1</sup> China National Forestry Economics and Development Research Centre, State Forestry Administration, Beijing, PR China. Authors acknowledge Qian Yuru, Zhang Xiaojing, Zhang Kun, Zhang Sheng and Ge Qi for their contribution to this paper through translating, providing references, discussion and other help.

<sup>2</sup> The national forest cover and forest area included that of shrubs specified in the national regulations and increased additionally between inventory periods; the forest cover and forest area of each province (autonomous region, municipality) already included that of the shrubs specified in the national regulations.

<sup>3</sup> According to the new afforestation technological code (GB/515776-2006), forested land area indicators were established in 2007.

<sup>4</sup> The exchange rate used in this paper is US\$1=RMB8.0 (before 25 November 2005).

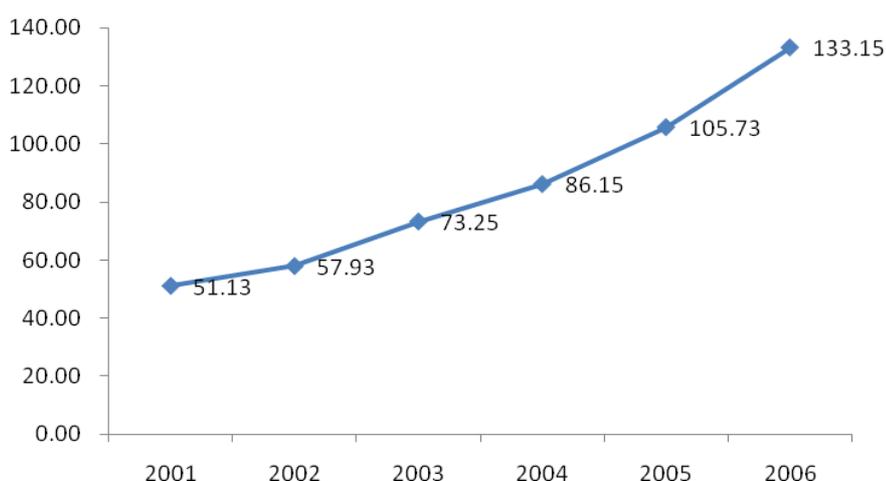
output volume of economic forest products exceeded 100 million tonnes and the forest parks were visited by 213 million tourists, which generated US\$1.4 billion in direct tourism revenue. The number of foreign forestry investment projects increased to 646, mainly in the processing of timber and bamboo and the establishment of plantations; this amounted to US\$385 million and US\$183 million in investment respectively, accounting for 72.71 percent of the total amount of foreign investment related to forestry. The coastal provinces in southeast China took the lead in hosting foreign investment in forestry; the eight provinces and autonomous regions influenced by more than US\$20 million of foreign investment in forestry annually were Fujian, Zhejiang, Hubei, Guangxi, Jiangxi, Jiangsu, Inner Mongolia and Guangdong. The total foreign investment for these provinces accounted for 91.6 percent of the national total (SFA 2007a; Appendix 5).

**Table 1. Forest resources in China – Sixth National Forest Resources Inventory 2006 (data collected during 1999-2003)**

Forestry land area (1 000 ha)	Forest area(1 000 ha)	Forest stock volume (1 000 m <sup>3</sup> )	Forest cover(%)
284 925.60	174 909.20	12 455 845.80	18.21
Total standing stock volume (1 000 m <sup>3</sup> )	Area of natural forest(1 000 ha)	Area of plantations (1 000 ha)	Area of economic forest(1 000 ha)
13 618 100.00	115 762.00	53 257.30	21 390

The value-added percentages of private enterprises among the major economic benefit indicators (2006) were 27.78 percent for timber processing, wood, bamboo, rattan, palm and grass, 27.52 percent for furniture manufacturing and 26.71 percent for paper and paper products – higher or close to the national average of 27.86 percent (China National Statistics Bureau 2007).

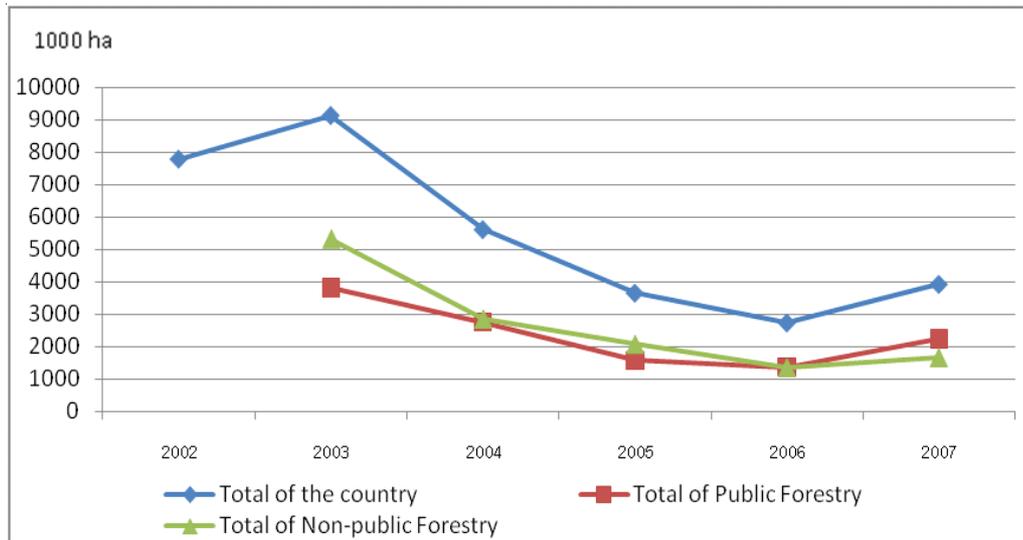
Billion US. \$



**Figure 1. Annual gross output value of the forestry industry in China**

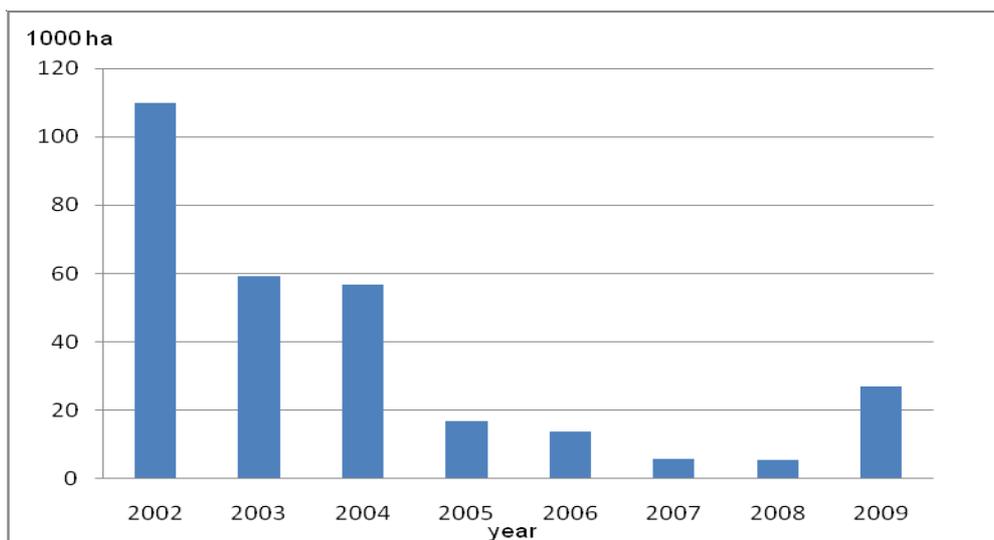
Source: SFA (2003-2007).

According to the statistics for total afforestation areas between 2002 and 2007 and the accomplishment of the Program of Fast-growing and High-yielding Plantation Base (FGHYPB) during 2002 to 2009 subsequently referred to as the Programme, the area of afforestation was on the decrease *per annum* in general (see Figures 2, 3, 4 and Table 2).

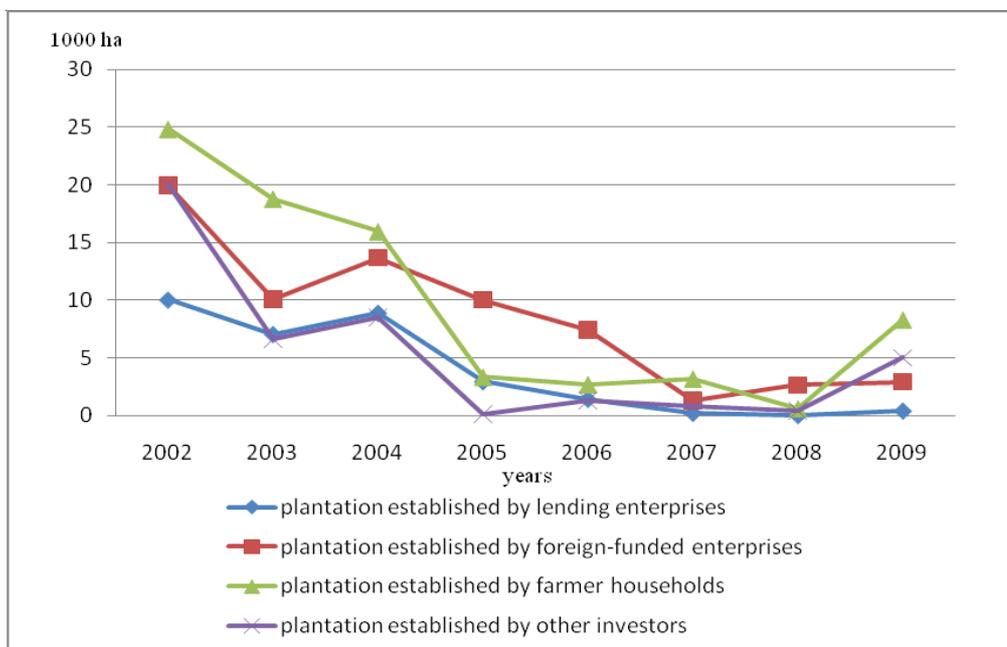


**Figure 2. Estimated area of annual afforestation between 2002 and 2007 in China (note: estimates vary; many sources indicate the actual figures are considerably less -- See FAO 2010)**

Source: SFA (2003-2007).



**Figure 3. Total afforestation established by the Programme of FGHYPB between 2002 and 2009**



**Figure 4. Afforestation established by non-public investors under the Programme of FGHPB between 2002 and 2009**

Source: SFA (2002-2006).

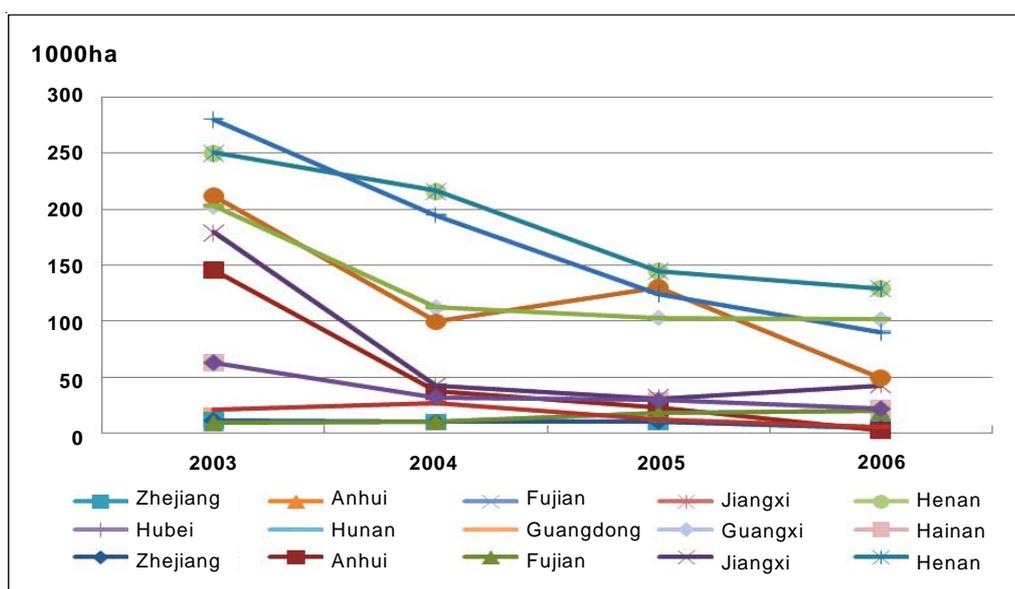
### ***Position and role of private sector forestry***

The private sector dominates the growth of the forestry economy. At present, in terms of industry categorization, the gross output value of plantations, nurseries, floriculture and captive-breeding of wild animals and plants of the primary industry invested in or operated by the private sector accounts for 73.5 percent of the total; wood-based panel manufacturing, timber, bamboo, rattan and palm processing, forest food and beverage production (secondary industry) account for 94.2 percent of the total; timber, bamboo products, wood products (wholesale and retail) and forest tourism (tertiary industry) accounts for 61.8 percent of the total. According to provincial forestry sector statistics, between 2002 and 2003, the total investment of the private sector in forestry accounted for 80 percent of total forestry investment in the plains area, or even 90 percent in some areas (Sun Jian 2008) (Table 3, Figure 5). Almost all flower growers in China are in the private sector; some state-owned forestry enterprises, state-owned forest farms and townships, which used to be engaged in flower growing in the 1980s, have gradually contracted or leased their flower nurseries to the private sector. Between 1990 and 2004, the area of flower growing increased from 40 000 to 636 300 hectares with annual growth of 21.85 percent; the sale of flowers increased from US\$150 million to US\$5.38 billion with annual growth of 29.14 percent (Lei Jiafu 2008).

**Table 2. Plantation establishment in China between 2002 and 2007 (1 000 ha)**

	2002	2003	2004	2005	2006	2007
<b>Total</b>	<b>7 771</b>	<b>9 118.90</b>	<b>5 598.10</b>	<b>3 637.70</b>	<b>2 717.90</b>	<b>3 907.70</b>
Public afforestation		3 801.90	2 745.10	1 558.90	1 363.70	2 241.30
Private afforestation		5 317.00	2 853.00	2 078.80	1 354.30	1 666.50
<i>Private afforestation of the total (%)</i>		58.3	50.96	57.15	48.82	42.62

Source: SFA (2002-2007).



**Figure 5. Plantations established in the collectively-owned forest area of the ten provinces and autonomous regions in southern China**

Source: SFA (2003-2006); Appendixes 1a-d.

***Property right modes of forest resources and forestry-processing enterprises***

Forest property rights in China include forest land ownership, forest land tenure and forest tree ownership. According to the stipulations of the Constitution, the Land Management Law, the Forest Law and the Real Right Law, forest and forest land can only belong to the state or collectives; individual citizens shall not have such ownership, but can hold tenure of forest land according to law. Forest trees can be owned not only by the state and the collective, but also by individual citizens (Table 4).

**Table 3. Structure of property rights related to forest resources and forest product processing enterprises**

<b>Forest land</b>	Ownership, usufruct, rights of disposition, mortgage, gift transfer and leasing are held by the state and collectives.
<b>Forest trees</b>	Ownership, tenure, usufruct, rights of disposition, mortgage, gift transfer and leasing are held by the state, collectives and individuals.
<b>Processing enterprises</b>	Rights of independent management, disposition, mortgage, gift transfer and leasing and usufruct are held by the state, collectives and individuals.

Since the 1990s, forest tenure reform has been implemented in some regions, so that the tenure of collectively-owned forest land and the ownership of forest trees are mainly enjoyed by households based on the principle that the forest land is owned collectively (Chen Xiaoqian and Sun Changjin 2003). The share of household-managed forest land in Hunan, Yunnan, Sichuan, Anhui, Zhejiang and Jiangxi provinces takes up 98, 92.8, 80.2, 73.3, 67 and 54 percent respectively of the total collectively-owned forest land. For enterprises engaged in silviculture, forest product processing and forest services, the investors are mainly individual farmers or forest farmers, forest workers, investors from outside the forestry sector, private enterprises, and Hong Kong S.A.R., Macao, Taiwan, P.O.C. and other foreign-invested enterprises. The capital comprises domestic capital and international capital with direct investment from foreign companies (Figure 6; Appendixes 1a-d).



**Figure 6. Structure of private sector forestry**

Source: Lei Jiafu (2005).

## **Forestry investment development environment for the private sector**

### ***Advantages of investing in forestry***

#### *Legal safeguard*

In China, individual farmers, private enterprises, Hong Kong S.A.R., Taiwan, P.O.C. and Macao-based enterprises and foreign-funded enterprises are entitled by law to utilize and manage forests and timber resources by themselves and obtain benefits from forests and timber resources; there is the precondition that lands are owned by the state or collectives. This is termed private sector forestry. Related laws and regulations, such as the Constitution, Land Management Law and Forest Law stipulate explicitly the status, functions and obligations of private sector individuals and enterprises; this provides a solid legal foundation for forestry investment by the private sector, and guarantees its feasibility. The greatest attraction for the private sector to participate in forestry is timber processing. The Real Right Law of the People's Republic of China passed on 16 March 2007 prescribes strong legal clauses on securitizing private sector investment and private property. Private sector forestry has become a vital component in modern forestry development in China. Its rapid development has brought vigour and power to development of the forest industry. The term of household forest management has been significantly prolonged. The process for promoting modern forestry development is conducive to further assist with and stabilize forestry tenure reform, improve forestry market mechanisms and protect the fundamental benefits of farmers in mountainous areas and citizens in forestry areas. Meanwhile, it also requires the acceleration of forestry 'real right' development, the adjustment of related policies and systems and improvement of forestry administrative levels by law (Zhang Lei and Wu Bohai 2007).

#### *Consistency of national forestry policies*

Generally, the development of private sector forestry in China can be divided into three stages: the rudimentary stage, the expansion stage and the rapid development stage (Miao Guangping and Dai Guancui 2000). In the different development stages, forestry policies have retained general consistency and been improved gradually. These policies encourage and assure forestry development.

The rudimentary stage spanned 1981 to 1992 when the private sector participated in forestry activities. On 8 March 1981, the CPC Central Committee and the State Council issued 'A Resolution on Several Issues Concerning Forests Protection and Forestry Development' (CPC Central Committee and the State Council 1981). The policies targeted stabilizing rights to hills and forests, designating privately-farmed plots of hilly land for forestry production; they were carried out in collective forest areas. Privately-farmed plots of hilly land and hills were allocated to farmers (Chen Peng *et al.* 2006). About 80 percent of forests in collective forest areas were managed by individual rural households, and farmers became the main actors in hilly forest management. Subsequently, development of collective forests entered into a period with multiple management bodies and diversified management forms. From 1984, projects relating to forest rights and land rights, such as 'two types of hills combined to one', 'expand privately farmed plots of hilly land' and 'three types of hills combined to one', also took place in collective forest areas in the southern part of China. These projects mainly distributed the

majority of privately-farmed plots of hilly land, hills and forested hills to individual households, and renamed them as self-managed hills, in order to promote scale management and further motivate the enthusiasm of farmers to participate in forestry. In January 1985, the CPC Central Committee and the State Council issued Ten Policies to Further Stimulate Rural Economy, which cancelled unified timber purchase in collective forest areas, opened up the timber market and boosted the economy in forest areas. Generally, China continued to establish the forestry production system and did not adopt large-scale reform of the forestry economic system. This period also witnessed the adjustment of organization and management of private participation in forestry. Due to the scale effects of hill and forest distribution to individual households, joint management occurred in many areas. In some places several groups were engaged in joint cooperative forest farms.

The period from 1992 to 2001 was the expansion stage when the private sector increased its participation in forestry. The decision on Several Issues Relating to the Development of Socialist Market Economy, issued by the CPC Central Committee and the State Council in 1992, stated that the economy in China was under a transition period from a planned commodity economy to a socialist market economy (Li Yining 2007). The forestry economy was undertaking 'Two Transformations' accordingly. As forestry reform developed gradually and in depth, some provinces began to auction the use rights of 'Four Types of Barren Land' (barren slopes, ridges, hills and foothills), to directly link the economic benefits of using these land types with the vital interests of buyers and to allow farmers long-term and stable ownership. Auctioning of Four Types of Barren Land attracted many farmers, individual entrepreneurs, forestry entrepreneurs, economic groups in other sectors and even foreign companies to invest in forestry. In 1997, China began to formally encourage the development of the private sector, which motivated the further development of private forestry. On April 1998, the National People's Congress approved the Forest Law of the People's Republic of China. The new forest law formally provided legal safeguards for forest land, forests and trees; it was the most powerful driver for private participation in forestry since the Three Determinations in the forestry sector. Each of the aforementioned reforms promoted private participation to a certain degree in forestry activities ranging from afforestation to the exploitation of non-forestry and non-timber resources, and from the management of privately-farmed plots of hilly land to joint forestry and forest land management. The fields of private investment in the forestry sector were expanded gradually with ever-diversifying forms. Besides farmers, other private bodies like individual entrepreneurs, government employees and even foreign entrepreneurs engaged in forestry management activities via the leasing of hills and land for afforestation and purchasing the use rights of Four Types of Barren Land for comprehensive development and management.

At the beginning of the twenty-first century, China initiated the Tenth Five-year Plan, which inaugurated the rapid development stage of private participation in forestry. In June 2003, the CPC Central Committee and the State Council issued the Resolution on Accelerating Forest Development (hereafter referred to as the Resolution). It further identified the legal status of private sector forestry, put into effect policies such as 'those who plants trees will own the trees, those who plant trees together will jointly own the trees', streamlined taxes and fees and promulgated other policies relating to resource utilization, investment and financing. It created an environment for fair competition among various forestry management bodies. After issuing the Resolution, Fujian, Jiangxi, Liaoning and Zhejiang provinces initiated pilot collective forest tenure reform. The reform started by 'clarifying the ownership, activating the management rights, fulfilling the disposal rights, and guaranteeing the benefits rights' and confirmed

farmers as the major managers; this motivated them to participate in afforestation and forest management and furthering forest productivity. The ecology, the economy and society in these areas witnessed significant changes after the reform.

On 24 February 2005, the State Council issued Comments on Encouraging, Supporting, and Guiding the Development of Non-public Economic Bodies like Individual and Private Entrepreneurs (referred to as the 36 Comments for Non-Public Economy by the people), which was regarded as the most comprehensive and systematic policy document concerning the acceleration of private sector development since the reform and liberalization 27 years earlier. Its publication and implementation were a breakthrough in the development of the private sector in China (Chi Fulin 2006).

On 8 June 2008, the CPC Central Committee and the State Council issued Comments on Promoting Collective Forest Tenure Reform All Around (hereafter referred to as the Comments). It was a programmatic document for collective forest tenure reform nationwide, and was a new milestone for rural reform in China. The core of the reform was to distribute the management rights of forest land and the ownership of forests and trees to farmer households via household contracting; it reconfirmed farmers as the major managers, who could contract lands for 70 years and extend the contracts afterwards, with the precondition that the ownership of collective forest lands would remain untouched. In this way, hills have managers and managers understand their rights with specified duties and benefits. The rights to hills and forests were confirmed and general public benefits were assured. Moreover, the Comments also indicated the need to establish systems for:

- Fiscal issues;
- Forest ecological compensation (payments for environmental services);
- Forest tenure/mortgage;
- Forest policy insurance; and
- Evaluation of forest land, forests and forest resources.

These systems would rationalize collective forestry development.

### ***Reform measures by local governments***

In recent years, to accelerate regional economy and sector development, and to deepen the reform of the forest management system, some provincial (region or municipality) governments and their authorities have evolved a number of preferential policies. They concern private sector investment in the region and the sector, addressing issues ranging from property rights fulfillment to investment encouragement, such as collective forest tenure system reform, land supply priority and tax reduction or exemption. Some policies and measures have already been recognized or agreed at the national level and have inspired the rapid development of the private sector to some extent. Some of these developments are described below.

#### ***Collective forest tenure system reform in Fujian Province***

In 2003, Fujian Province introduced collective forest tenure reform (hereafter referred to as tenure reform) which was characterized by equal hill allocation, equal rights and equal benefits. It distributed property rights to households and to individuals, and returned hills,

forests and benefits to public ownership. Thus, the long-term monopolization of public property rights came to an end. After the tenure reform, forest farmers were highly motivated to conduct afforestation, forest management and protection. In 2005, Fujian accomplished the afforestation of 138 000 hectares, of which 70 percent was private sector afforestation; this was a 10 percent increase compared to the previous year. By reducing or exempting taxes and fees, encouraging direct negotiation between production and sale of timber and bamboo and adopting a financial payment transfer system, US\$232 million were returned to the public and the forestry sector.

### *Deepened collective forest tenure reform in Jiangxi Province*

In August 2004, Jiangxi Provincial Government issued Comments on Deepening Forestry Tenure System Reform, targeting commercial forests which did not have disputes on rights and ownership. Through policies such as Two Cancellations, Two Adjustments, and One Standardization, the value of forest land and forests and trees increased generally. In 2006, the average annual leasing price and transfer price of barren hills and Moso bamboo forest increased significantly, and the transfer period increased to 30 years (Appendixes 2 and 3). After tenure reform, forestry bureaus in 90 counties, forestry police offices in 86 counties, timber checking stations in 64 counties and forestry working stations in 62 counties no longer relied on forestry administrative charges for operation and subsistence (see Table 4 for changes in taxes and fees). Through forest tenure reform, the average annual net income per capita of farmers increased by US\$10.56. Nearly 400 000 persons who had left the province for work returned for forestry activities.

**Table 4. Changes in agriculture taxes and fees before and after forestry tenure reform in Jiangxi (US\$)**

Items	Chinese fir (m <sup>3</sup> for log diameter 12 cm)		Pine logs (m <sup>3</sup> for log diameter 12 cm)		Moso bamboo	
	Before	After	Before	After	Before	After
<b>Total</b>	<b>28.86</b>	<b>9.2</b>	<b>25.54</b>	<b>9.09</b>	<b>0.4</b>	<b>0.13</b>
Agriculture special products tax	4.49	0	4.63	0	0.08	0
Forest cultivation charge	11.98	8.96	11.01	8.85	0.16	0.13
Plant quarantine fee	0.25	0.24	0.25	0.24	0.02	0.0025
Administrative fee by forest industrial enterprises	0.65	0	0.62	0	0.02	0
Average charges at county level	5.15	0	3.88	0	0.04	0
Average charges at township level	3.13	0	2.57	0	0.03	0
Average charges at village level	2.38	0	1.77	0	0.02	0
Other fees	0.81	0	0.76	0	0.03	0
<i>% of taxes and fees in timber sales</i>	<i>6.86</i>	<i>1.91</i>	<i>6.10</i>	<i>2.09</i>	<i>6.10</i>	<i>1.29</i>

Source: Liu Can *et al.* (2008).

### *Liaoning Province: Reform in the investment environment*

By the end of June 2007, 3.43 million hectares in Liaoning had been addressed by forest tenure reform, accounting for 65.04 percent of the total target area. Around 2.4 million rural households and 8.5 million farmers participated in the reform. The reform was carried out using the following methods:

***Different allocations:*** Forested mountainous areas in the eastern region were allocated mainly by household contracting, with the aim of equally distributing hills and forests to farmers. Plains areas in the middle region were allocated to contractors via auctions and other contracting approaches. In protection forest areas in the western region, both household contracting and auctions were used: Villages with plentiful forests applied household contracting, whereas villages with few forests implemented auctions and other measures to determine rights and ownership of hills and forests.

***Diversified reform:*** While broadening the policies for commercial forests, Liaoning also included public benefit forests in the tenure reform. Sound development and rational utilization of public benefit forests were encouraged, with the precondition that their characteristics and management modes remain untouched. Thus, contractors could obtain compensation for public benefit forests; developing the forest land economy could provide a certain amount of income; and proper management could also generate income from selective cutting. For commercial timber production by private investment on the lands for forestry use, the forest cultivation charge (originally for afforestation) was reduced by 70 percent; for commercial timber production on non-forestry lands, the forest cultivation charge was exempted.

***Supporting reforms:*** The service system was established and further improved. Cities such as Benxi, Dandong and Fushun set up professional associations for chestnut cultivation, deer breeding, frog breeding, filbert processing, traditional Chinese medicines, among others. Based on forest land management, and linked by funds, new techniques and family relationships, innovative forestry cooperative organizations were established; for example, family cooperative forest farms. Pilot mortgage loans were developed for forest tenure. Cooperating with local forestry authorities, the rural credit cooperative had already granted microcredit mortgage loans of US\$250 000 for farmers' forest tenure. To support the development of forest land economy, the provincial government formulated the forestry economy development plan and distributed US\$5 million annually to support the development of forest land economy via traditional Chinese medicine culture, mushroom culture, frog breeding and wild vegetable cultivation, which had been part of the former scale economy.

### ***Tax privileges for foreign plantation investors in Hainan Province and Guangxi Zhuang Autonomous Region***

To attract foreign investment in establishing plantations in Hainan and Guangxi Zhuang, a number of tax and fee incentives were evolved, as shown in Table 5. Compared with initial rates, the total taxes and fees collected were reduced from 34.5 percent to 14.45 percent.

**Table 5. Preferential taxes for foreign plantation investors in Hainan and Guangxi Zhuang Minority Autonomous Region**

	<b>Main tax items</b>	<b>Initial tax rate</b>	<b>Preferential tax rate</b>	<b>Tax rebate</b>
1	Forest cultivation charge	10%	2.50%	Return 7.5%
2	Fee for maintaining simple regeneration	5%	1.25%	Return 3.7%
3	Fee for forestry protection and construction	US\$0.625/m <sup>3</sup> (2.5%)	US\$0.625/m <sup>3</sup> (2.5%)	
4	Taxes on special agricultural products			
	Production	8%		Reduce the tax for commercial forest in mountainous areas
	Sales	8%	8%	
	Local additional tax	0.8% for each		
5	Forest quarantine fee	0.20%	0.20%	
	<b>Total</b>	<b>34.50%</b>	<b>14.45%</b>	

Sources: Lu Wenming *et al.* (2002); Sun Jian (2008).

***Measures taken to improve the forestry investment environment in Luohe City of Henan Province***

In order to improve development of private sector forestry, new measures such as land exchange, leaseback and tree planting in large areas were taken. Farmers inclined to plant crops instead of trees on land suitable for tree planting and on waterlogged land would exchange vacant areas with villages and teams for tree planting. Farmers unwilling to exchange lands would negotiate with villages to rent such land at a reasonable price and then lease the land to specialized households. The Forest Cultivation Fund (FCF) could be accessed when the farmers were establishing fast-growing and high-yielding species or processing enterprises were establishing their own forest raw material bases; the investors only needed to pay half of the FCF on the condition that they were establishing commercial forests in barren areas. Nanle County stipulated that individual households would get a subsidy of US\$6.25 for planting 0.067 hectares of timber forest and US\$12.5 for every 0.067 hectares of economic forest (Jia Zhibang 2008). These policies and mechanisms provided incentives to motivate people from all walks of life to participate in forestry development. Approximately 533 hectares of low-lying and waterlogged land in Duqu Town in Linying County were transformed into forested areas. A farmer, Jia Guofeng, contracted 53.33 hectares of land and hired 12 villagers to help take care of the trees. Besides the service fee of US\$5 000 collected by the village, his annual income could reach US\$3 750 and the other 12 villagers could earn US\$1 250 annually as a group. The 18 enterprises engaged in timber processing generated 333.33 hectares of fast-growing and high-yielding forest raw material bases, realizing the win-win situation of both the specialized tree-planting households and individual farmers. A local timber association was established which changed the free development mode. Besides publicizing the policy, the association

united all the timber enterprises to help them coordinate the supply price and returns on capital investment.

### *'Non-prohibition or Admittance' strategy in An Lu City of Hubei Province*

Basic mode: Forestry investment by farmers and other individuals, including redundant government employees. In order to diversify farmers' investment, the municipal government adopted the 'Non-prohibition or Admittance' strategy, providing free seedlings for farmers unable to develop forests on a large scale, and utilized non-cropland, yards and adjacent land to plant economic forests. The scattered afforestation area reached 133.33 hectares. Another farmer, Li Jiahua, from E'tou village in Tangdi Town, planted fruit trees on arid land and land in front of and behind his house. The total area was 1.33 hectares, with annual net income of over US\$2 500. With idle barren mountain and hill slopes being the platform, private investors and outside investors were attracted by long-term leasing or buying management rights. Investors enjoyed management rights, benefit rights and the right of use. Fifteen individuals invested in forestry on more than 6.67 hectares of land; 50 relocated redundant officers invested in forestry development, buying the total management rights over 200 hectares of bare lands for afforestation. Forested lands developed by individuals totalled approximately 2 333.33 hectares. The main attractions were:

***Policy incentive:*** Policies provided guarantees for forestry development and clear ownership of hills and tree plantation; people were freed from anxiety in this context and the investors' misgivings on forestry development were dispelled. Also, investors could receive special treatments for, and rewards from, forestry development. For example, people who planted trees with an area of more than 1.33 hectares could receive US\$56.25 for each hectare; those who planted over 500 trees, with every 100 trees equaling 0.067 hectares, would receive a corresponding amount of money.

***Market access:*** Better market access was achieved, manifesting full play to the management rights of the land resources. The auction of the management rights of Four Types of Barren Land was promoted. Land previously dependent on national inputs for afforestation was opened to the market and private investment was allowed. Approximately 6 200 hectares of land suitable for afforestation were auctioned off and poplars, ginkgo and slash pine were planted. At the same time, the afforestation and management rights of the land along the six main roads in the city were put up for auction as well.

***Effective interdepartmental linkage:*** A service contract between the Forestry Department and investors was signed. The Forestry Department was responsible for issuing forest rights' certificates, logging certificates and transportation certificates, as well as guiding selection and cultivation of seedlings, forest fire prevention and pest and disease control. The forestry police and judiciary departments firmly cracked down on those who harassed and interfered with investment and management; the Water Resources Department helped investors to set up infrastructure to combat drought.

***Seven forestry support policies:*** (1) A subsidy policy for new forests and orchards/floriculture. People who created bases for flowers and seedlings, dry and fresh fruit and tea with an area over 33.33 hectares would receive subsidies of US\$37.5, US\$37.5 and US\$75 for each 0.067 hectares respectively. (2) Subsidy for enhancing low-yielding forests. People who enhanced low-yielding fruit orchards and tea gardens with an area over 13.33 hectares would

receive subsidies of US\$25 and US\$37.5 for each 0.067 hectares respectively. (3) Support was provided for the construction of infrastructure including water facilities, electricity and roads to augment large forests and orchards. Forestry investment would be prioritized. (4) Specialized households and pillar enterprises engaged in forest plantation, timber processing and forest tourism could acquire loans at discounted interest. (5) Discounted interest loans would be awarded for forestry science demonstration plots and funds for key areas and technologies in the forestry and fruit industry would be prioritized. (6) Forest land transfer was encouraged for enterprises engaged in forestry industry development and forest tourism. (7) Enterprises that developed fast-growing and high-yielding timber forests sustainably and on a large scale would have their forest and timber-logging plans singled out for preferential treatment.

### *Favourable policies for promoting the investment environment in Hulun Beier City of Inner Mongolia*

Unused lands, including state-owned barren hills, sandy land and deserts, have been advocated for transfer to units and individuals on a legal basis for planting of trees and grasses.

On the condition that investment has been made and greening work carried out completely, land-use rights can be acquired through sale and remain unchanged for 50 years; moreover, the land-leasing fee is reduced. The reduced land-leasing fee would be taken as the investment by the government with regard to ecological development. Land-use rights can be transferred, rented and mortgaged on the basis that the contracted investment capital has been reached and conditions are suitable for ecological development. Taxes for land use over five years are exempted for service industry projects that are in line with state industry policies. If the local government permits, the land management fee levied at the municipal level can be reduced by half and the land-leasing fee returned scale-wise by the financial department at the same level.

Major civil society organizations can engage in the transfer of use rights for forests, trees and forest land via contracts, leases, transfer, auction, negotiation or assignment. People have been encouraged to plant trees in a sustainable manner and on a large scale, and build family forest farms in areas with good environmental condition. Individuals and groups involved in forestry ecological projects (including afforestation on barren hills and other barren land), after meeting afforestation inspection standards, can receive a one-time seedling fee and afforestation subsidy.

The local government allocates money to fund ecological forests for public benefit that have been developed by civil society organizations, especially in key areas. Investors are compensated for their forest resources included in the public benefit forest system, after meeting afforestation inspection standards.

Domestic and foreign investment enterprises whose businesses are in line with the nation's key industry programmes and whose annual income exceeds 70 percent of the total income, are eligible for income tax reduction from 33 percent to 15 percent before 2010. For multipurpose products, logging, wood trimming and processing residues and small fuelwood, value-added tax is rebated.

Plantations established on Three Types of Barren Land (timber forests and economic forests) are exempted from all kinds of taxation for 20 years and seven years respectively. Stakeholders who converted cropland to forests, generated grass cover on slopes exceeding 15°, and converted cropland with severe water loss and soil-erosion problems, after approval by relevant departments, enjoy agricultural tax exemption and exemption from voluntary working days.

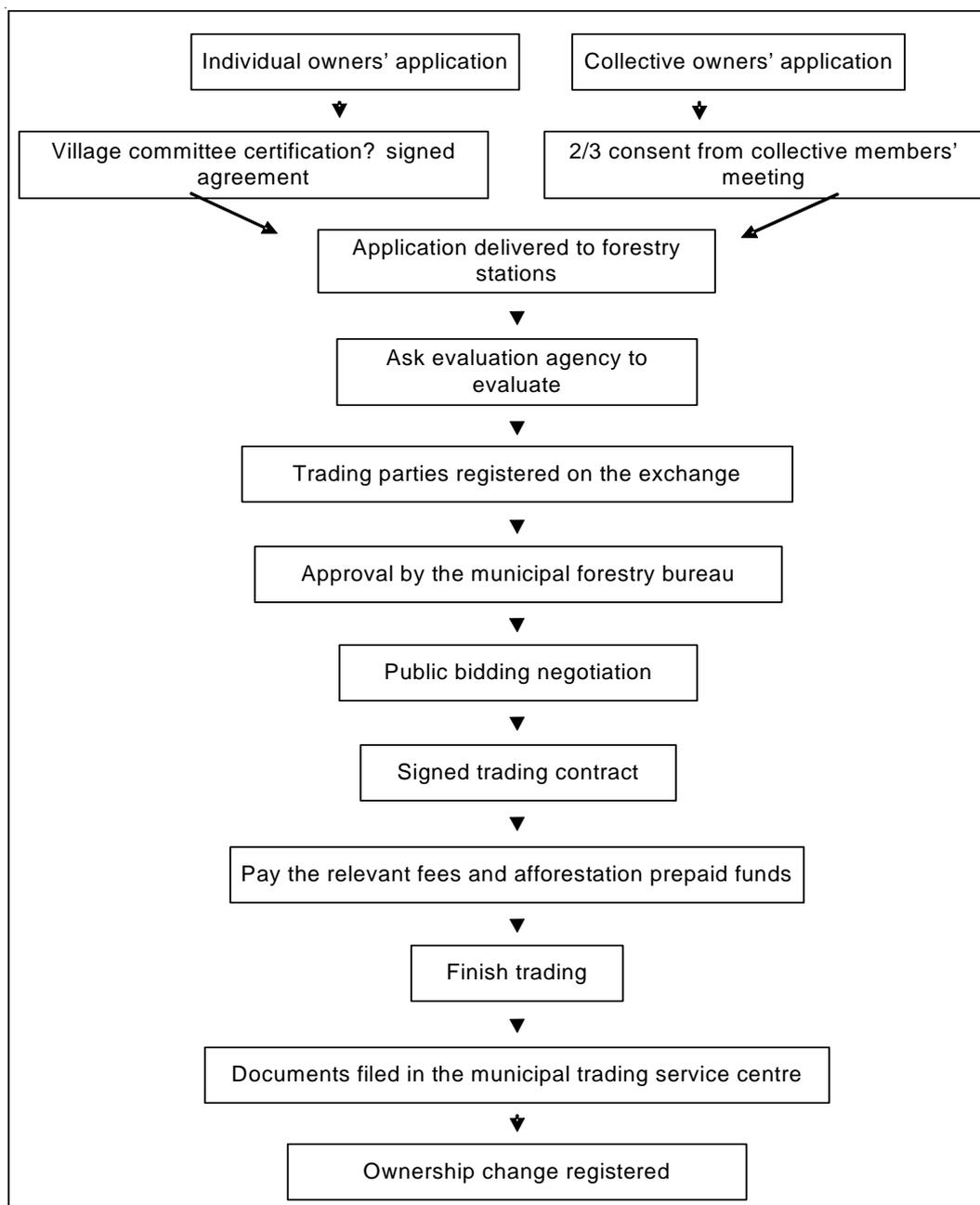
### *Use-right transfer in Zixing City of Hunan Province*

A system for transferring use rights has been implemented through the The Zixing City Assets Evaluation Management Methods on the Transfer of Use Rights of Forests, Trees, and Forest land (Trial Version) – ‘the Methods’. The process for the transfer of use rights is given in Figure 7. Table 6 shows evaluation items and fees related to the transfer of these use rights. The Methods clearly stipulate that forest land users should prepay US\$225 per hectare as an afforestation fee to local forestry stations when applying for logging on forest land that needs clear-cutting before planting. The prepaid fees are deposited in special forestry station accounts. The forest land users receive US\$150 per hectare the same year after their newly planted forests have been inspected by forestry authorities and approved. After two successive years of inspection and qualification, US\$37.5 per hectare is returned to the forest land users each year.

**Table 6. Evaluation items and fees for the transfer of use rights regarding forests, trees and forest land**

<b>Evaluation Items</b>	<b>Service fees(US\$/ha)</b>
Nearly mature, mature and overmature forests	18.75
Young and middle-aged forests	9.375
Land with immature forests	5.625
Barren hills	0.625
Bamboo forests and economic forests	3.75
Shrub forests, sparse and low-yield forests	3.75
Public benefit forests	3.75

Sources: *China agriculture year book* Compilation Committee 2005; *China agriculture year book* 2004).



**Figure 7. Process for the transfer of use rights regarding forests, trees and forest land**

## **Factors restricting private sector investment in forestry**

### ***Before forest tenure system reform***

Before reform of the collective forest tenure system, most forest lands excluded from tenure reform featured unclear, unstable and incomplete use rights and lacked access to free trade. This manifested itself in the following ways:

- Unclear forest ownership – targets for property rights in collective forest transfer were township collectives, village collectives and village groups. However, forest land boundaries and distinctions among forest land, forest and tree property rights were nebulous.
- In some areas, the forest land-use rights were unstable. The use rights period was short and ambiguous, and sometimes forest rights contracts signed with investors were altered at will. This situation gave rise to many regional forest land disputes which made investors doubt the expected returns and affected the normal transfer of such use rights.
- Incomplete forest land-use rights and disposition rights made it hard to realize the investors' profit-earning rights, including logging quotas; the investors' benefits and rights were not given complete consideration.
- Most of the standing timber trading entailed the transfer of forest-land use rights; therefore, the incomplete forest land-use rights system restricted trading activities significantly. Interventions by some township governments and collective economic organizations also confined the transfer of forest land; as a result it remained in the hands of the original managers.
- The standing timber market lacked unified, standardized trading laws and regulations. The trading rules and orders of some established trading markets were not applicable in general and the fundamental role of the market mechanism in the trade of forest products was not brought into play.

### ***Forest resource logging quota and the utilization of commercial forests***

Clause 37 of the Forest Law stipulates that after the legal acquisition of a logging licence, the company or individuals should log timber according to the licence and must hold a transportation certificate issued by forestry authorities when transporting timber from forest areas. This stipulation was mainly aimed at natural forest logging, but in the actual execution, the 'two certificates' also restricted utilization of commercial forest which was reflected as low quota or no quota. At the end of 2003, the State Forestry Administration issued 'Ideas on Perfecting Commercial Forests Logging Management'. The Ideas played an active role in promoting the development of fast-growing and high-yielding forests. It was stipulated that the clear-cutting area of directionally cultivated timber forests for industrial purposes and general timber forests which were established on slopes over 15° should be no more than 5 hectares. But an investigation revealed that this was hard to implement in Fujian Province, where mountainous terrain occupies 80 percent of the land area and most of the slopes exceed 15°. Therefore, the aforesaid stipulation of no more than 5 hectares led to repeated logging applications and plans for the same forests and the logging cost was increased as well. This also contradicted the principle of scale management of fast-growing and high-yielding forests. At the same time, the current logging quota requires making a five-year quota plan in

advance, so some short-term fast-growing and high-yielding forests might miss the period and as a result there would be no quota left for them. Regulations on Forest Logging Operation and Instructions on the Survey, Design and Planning of Forest Resources in Yunnan Province stipulate that the cutting rotation age of *Pinus kesiya* is 41 years. *Pinus kesiya* is mainly used in the paper-making industry and its mature age is only 21 years. This situation also contradicted the stipulation. As a result, the investors' capacity for autonomous management and effective utilization was restricted and the scope for agile decision-making according to market demand was decreased.

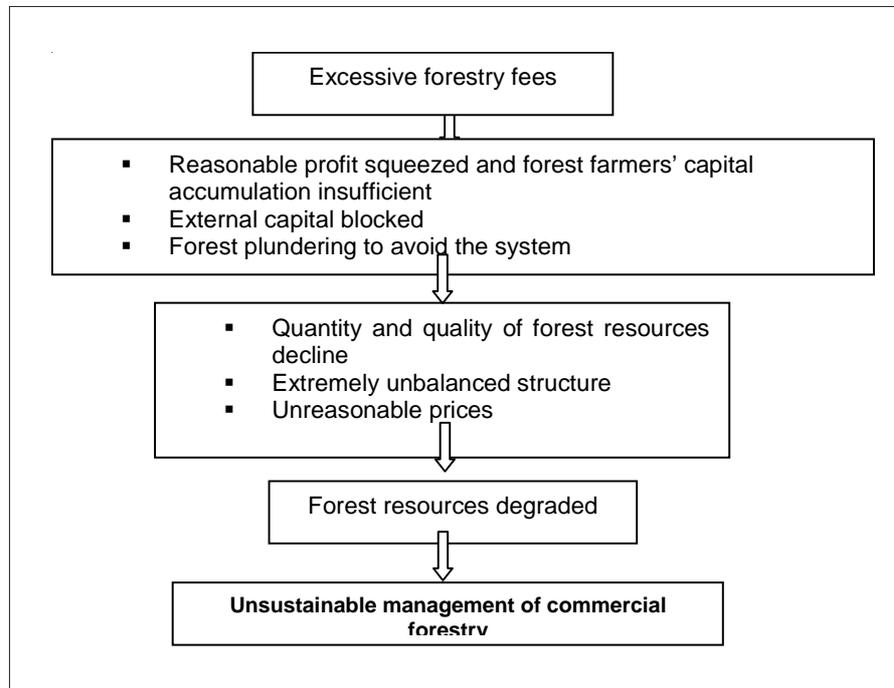
### ***Heavy taxation impedes private sector investment in forestry***

Taxes and fees are very important factors affecting private sector investment in forestry in China. Taxes on special agricultural and forestry products have been imposed on such forestry products as wood, bamboo and seedlings since 1983; the taxes rates range from 5 percent to 10 percent. Taking timber as an example, taxes on special agricultural and forestry products were levied for both production and sales. So taxes on logs had to be paid twice. Since the taxation reform in 1994, tax rates levied for production and sales of special agricultural and forest products were 8.8 percent respectively, accounting for 17.6 percent of the sales revenue (Ma Aiguo 2003).

In 2002, the Ministry of Finance and National Planning Committee issued A Notice on the Items and Units of Administrative Fees Collected by the National, Central Government Departments in 2001. It decreed that the nine items of administrative fees related to forestry were: a market management fee (1 percent of the sales price); a plant quarantine fee; a forest diseases and pest control fee; a fire-prevention fee; a road maintenance fee; a resource compensation fee; a forest regeneration fee in logging areas; a cost of production fee; and a timber sales consultation fee. In some regions, the fees collected by forestry departments exceeded 20 percent of the timber sales price.

These heavy taxes and fees increased forestry management costs, making some forestry management schemes basically profitless and seriously restricted private sector investment in forestry. Compared to agricultural crop farming, forestry's comparative profit decreased further. Therefore, it was inevitable that farmers abandoned forestry production and management when investment yielded no profit and they returned to their former practices. In some locations, excessive fees led to numerous problems including disorganized purchase, black market operations and transportation without licences (Figure 8).

In recent years, both central and local governments have been engaged in reducing taxes and fees to encourage farmers to invest in forestry. On 29 December 2005, the Standing Committee of the National People's Congress decided to annul taxes on special agricultural and forestry products. Approved by the State Council, the Ministry of Finance, National Development and Reform Committee and the State Administration for Industry and Commerce jointly issued a notice, indicating that from 1 September 2008, management fees for self-employed industry, commercial households and private enterprises would be eliminated. This relieved the burden on them and promoted the sound development of private forestry.



**Figure 8. The outcome of excessive forestry fees**

***Incentives and infrastructure for forestry investment in the private sector***

The Forest Law not only protects forest resources, but also creates incentives for developing forestry that encourage afforestation, closing mountains for natural regeneration of forest, expanding the forest coverage area and providing economic support or long-term loans for collective and individual afforestation activities and forest cultivation. Forest product-processing enterprises have been encouraged to develop and use substitutes for timber in order to promote its integrated utilization and conservation. The FCF was established for afforestation purposes and concomitantly a forestry funding system was set up. However, the Regulations on Implementation of Forest Law, issued on 29 January 2001, did not clarify incentives and incentive measures were not adopted. The project for converting cropland areas to forest was officially launched in January 2002 and farmers who conducted the conversion received subsidies and enjoyed tax rebates or exemption; the effects of the project were obvious as farmers became motivated to invest in forestry.

However, as protection of the ecological environment became more important on the national agenda, subsidization of public benefit forests remained lower than warranted and its rationale was not well grounded. Currently, the subsidy for national public benefit forests is US\$15/hectare, but this differs in various provinces (usually around US\$11.25/hectare). From the perspective of the cost of establishing public benefit forests, the current subsidy is insufficient (State Forestry Administration 2002). Local financial departments in provinces including Guangdong, Fujian and Zhejiang also allocate support funding for local (public benefit forest) pilot projects (Zhang Sheng 2004). Adequate infrastructure is in chronically short supply in forest regions and mountain areas where forestry is the main industry and a subsistence livelihood for many people. Problems related to transport, electricity supply and

communications are constraints for forestry development. Most potential investors in the private sector who have considered investment in infrastructure for forestry communities have adopted a wait-and-see attitude owing to the costs involved and their inability or unwillingness to pay for the construction of infrastructure which is supposed to be a state responsibility.

### ***Financing issues for farmers and private enterprises***

Considerable capital is needed for seedling cultivation, economic forests, fast-growing and high-yielding forests, floriculture, forest tourism, forest product processing and wildlife breeding. Financing and loans are difficult to obtain and as a result, for private sector forestry, intensive management, technological development and market competition are restricted to a great extent.

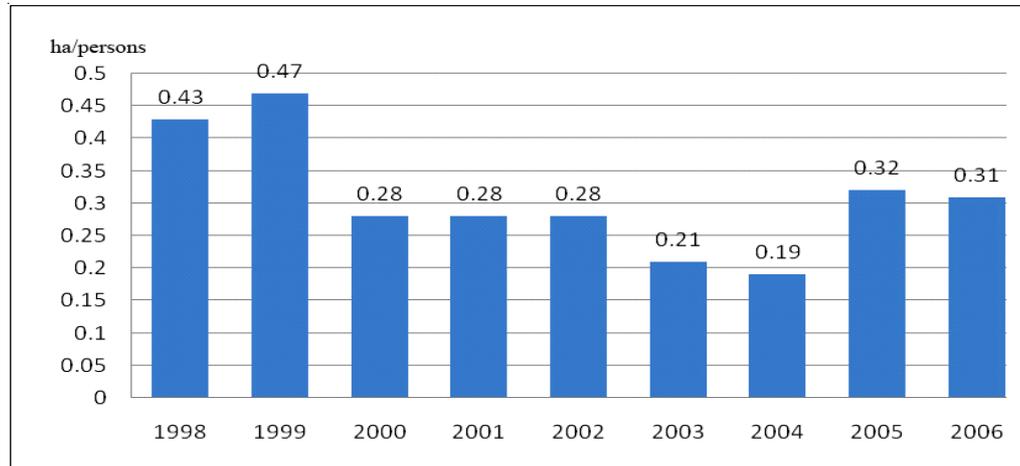
The main reasons for difficulty in obtaining loans are:

- Some commercial banks are reluctant to extend forestry loans because of perceived high risk in forest management, long reimbursement periods, higher management cost and no obvious achievements in the short term. This is especially applicable to small credit schemes. In Yongan City of Fujian Province in 2002, a planter called Zhao acquired use rights of 50 years to a collective's barren hill by auction. The area of the hill was 28.67 hectares and the price was US\$12.5/0.067 hectares. In 2003, he invested US\$37.5 for each 0.067 hectare. The plantation cost him over RMB100 000, and although the trees had been planted, the postplantation management cost was difficult to find. Banks did not extend loans to small forest plantations owned by individual households. Similar situations prevailed in the city. Sixty percent of the farmers were eager for financial support policies, including forests as collateral for loans and governmental discounts to solve their financial problems.
- Commercial banks have very strict standards for loan approval to private sector afforestation programmes. This greatly hinders small plantations in obtaining capital and expanding their business. Moreover, forest assets evaluation, mortgages and insurance are extremely difficult to achieve (this also applies to loans for the development of fast-growing and high-yielding species because they have two logging cycles). An analysis of Qingshan Paper Company in Fujian Province revealed that the company needed US\$75 million to run a 106 700 hectare forest plantation. However the project failed because it was unable to acquire the needed capital.
- Due to the fragmented nature of the timber market, standing timber usually cannot be used as collateral. Even if commercial banks agree, the timber must be insured. However, insurance companies are reluctant to handle forest resource insurance, which further restricts loan acquisition.

### ***Further restrictions in private sector investment in forestry***

#### ***Small forestry investment scale and low operating benefit***

The hilly land managed by farmer households in southern collective forest areas and four plains provinces has experienced inconsistent production (Figure 9; Appendix 4).



**Figure 9. Average land area of each household in southern collective forest areas and four plains provinces**

Source: Liu Can *et al.* (2008).

The low degree of organization is a key constraint in household management of southern collective forests. There are 174 143 private forestry enterprises, but only 25 000 participate in industry associations (Lei Jiafu 2008). Forestry production basically uses the household as the unit. Regarding management scale, in many of these areas the forestry area managed by households is usually very small, the smallest being about 0.07 hectares while the biggest is about 1 hectare, and distribution is scattered. Small-scale management on the one hand excludes labour division and cooperation, and technical and market information resources are difficult to share; on the other hand, this is not conducive to intensive and scale management, especially for timber plantation management. According to a survey of 285 forest farms in Lin'an Municipality, Zhejiang Province, farms with management areas smaller than 200 hectares accounted for 76.9 percent of the total, and the smallest was only 13.3 hectares. Based on the requirements for forest management and management levels in southern forest areas, a management area of between 200 and 266.7 hectares is suitable (Chen Yongfu and Ji Yalan 2003).

### ***Weak capacity to resist natural disasters***

In spring 2008, several southern provinces experienced catastrophic frozen rain and snow falls, which caused some farmers total loss of savings over many years or loans incurred. In Jiangxi Province, 3.567 million hectares were affected (40 percent of the total forest land area), of which 739 000 hectares were Moso bamboo forest (accounting for 90 percent of the total bamboo forest area in Jiangxi), 533 000 hectares were slash-pine forest, 203 000 hectares were oil-tea camellia, 871 000 hectares were Chinese fir forest, 551 000 hectares were Masson's pine forest and 669 000 hectares were other tree species. Six hundred million stems of Moso bamboo and 12.66 million m<sup>3</sup> of forests were damaged, equivalent to 7.88 million m<sup>3</sup> of timber. The direct forestry economic loss was US\$1.409 billion, accounting for 41 percent of the total loss in Jiangxi that amounted to US\$3.4 billion. Some farmers had invested all their financial resources in forest land. It is reckoned that five years (even ten years) after the disaster, some farmers were still unable to profit from forest land

as they needed to keep investing to pay for damaged forest clearing and replanting. Therefore, some Jiangxi farmers abandoned the forest land and looked for work elsewhere (Li Yunkun *et al.* 2008).

### ***Lack of farmers' skills, shortage of skills in private middle and small enterprises and weak competitive strength***

Management concepts and technical levels in households and enterprises vary tremendously. Information channels are not transparent and the competitive strength of middle and small enterprises is weak. Zhang Xiaojing and Xiong Xiaoping (2004) reported that 27 percent of farmers need assistance with new techniques and appropriate information. Different capacities among different management levels will generate a number of negative results, such as waste of forest land resources, increase in timber production cost and decrease in production capacity.

## **Approaches to eliminate factors that restrict private sector investment in forestry**

### ***Comprehensively promoting collective forest tenure reform***

In July 2008 the 'Ideas' referred to earlier stated that it would take five years to accomplish the reform task of clarifying property rights and contracting forest land to individual households. Currently, 19 provinces and autonomous regions have issued documents to promote the reform; 59 million hectares of forest land have been contracted, accounting for 34.5 percent of the collective forest land. Clarifying use rights, releasing management rights, realizing disposal rights and ensuring profit rights are – via household contract management – distributing the contracted management rights of forest land and ownership of forest trees to households of collective economic organizations, which generate production material for households. Fully promoting collective forest tenure reform will affect the external environment of the collective forest tenure system and reduce forestry taxes and fees, which are the main incentives that motivate farmers to participate in forestry management.

Clarifying use rights is still at the core of new collective forest tenure reform, and is the critical difference between current and previous reforms. While clarifying property rights, long-term stability of forest land contracting management should be maintained. The contracting duration of forest land is 70 years; the land can be contracted again after expiration of the duration period, which conforms with the characteristics of long-term rotation of forests and further indicates that China's rural policies will be stable in the long run. Surveying boundaries and distributing certificates are basic requirements for clarifying property rights in collective forest tenure reform and should be based on law.

### ***Forestry policy-making processes need stakeholder participation***

China's forestry policies in different periods accorded with forestry development objectives and the economy system at that time. However, in the context of sustainable forest

development, the policies have disadvantages in modality, stability and motivating functions. Regarding investment, if policy-making is flawed, investors are hard to attract.

During the past ten years, China's forestry policy-making was government-oriented and determined by the nation's development thrust. Stakeholder influence has had an insignificant impact on decision-making and this is reflected by the absence of stakeholder participation in policy-making issues.

During the policy-making process, it should be recognized that government forestry agencies cannot provide all the resources needed for forestry development; stakeholder resources should be integrated as well. Households, community and intermediary agencies should be considered as major actors in forestry policy-making. The national forestry management monopoly should be eliminated or restricted and the private sector's influence in development should be expanded. Industry entrance criteria should be modified. Private forestry should enjoy national policy support and compensation, as well as perks such as tax exemption for households. In other words, the private sector should be involved in the making and implementation of forestry policies.

### ***The need to improve management and operational mechanisms for private sector investment in forestry***

On 27 August 2003, the 4<sup>th</sup> Meeting of the Standing Committee of the Tenth NPC approved the Administrative Licensing Law of the People's Republic of China in common administrative fields; as a result, government power became more restricted. Planning and enforcement of forestry administrative approval adopted sustainable development as the guiding principle with sustainable ecological, economic and social development as primary objectives. Currently, during the transition to a market economy, new systems and regulations for achieving more limited government power have not been established completely. Government power freely extends to various aspects of forestry development; there are still many regulations related to forestry investment (for example, admission, registration, approval, criteria establishment) for which the administrative approval procedure is very complex. Forestry investment activities *vis-à-vis* market behaviour also need approval by forestry administrations at each level; low efficiency and some officials' unorthodox behaviour are obstacles that investors have to confront. Forestry supervision and regulation activities are based on various policy regulations, rules, administrative orders and administrative measures set by governments at various levels that conflict with each other. Therefore, there is an urgent need to streamline and simplify bureaucratic procedures at all levels in order to facilitate and encourage investment in forestry.

### ***Establishing a logging management system that accords with household forestry management***

Currently, China still conducts a strict logging quota with logging in commercial forest plantations requiring logging licences according to current laws and regulations. As households do not have their own logging rights, their investment is affected by forest land renting fees, plantation inputs, forest tending costs and various taxes and fees; thus, they cannot gain timely and proper returns if logging cannot be conducted.

It has been reported that many farmers hope that the logging quota can be reformed as soon as possible; they indicated that although they have forest ownership after the tenure reform, their management rights, disposal rights and profits have been severely affected. As long as forest managers can ensure timely regeneration after logging, fast-growing and high-yielding forests should be allowed to be freely cut. Regeneration and logging of farmland protection forest should, based on relevant regulations, be priority arrangements while meeting logging quotas and logging of commercial plantations should be based on the requirements of forest management and production. Logging should be based on forest management plans, with sustainable management as the objective. Managers should be allowed to make their own forest management plans and identify tending objectives themselves, to confirm the correct time for logging and to choose the best logging practice. Efforts should be made to reform tending and thinning practices and remove limitations on various aspects such as initial age of thinning, interval time and thinning intensity. The thinned timber is only listed in total resource consumption volume as a special item. Timber forest could be extended to two rotation periods (each rotation period set at five to seven years) to facilitate renewal of contracts for further rotation periods.

### ***New financing and tax policy for forestry investment***

#### ***New financing policy for forestry investment***

There is a need to establish a public financial system that supports collective forestry development. Based on the principle that the government invests in the main components and stakeholders share reasonable costs, a long-term system that integrates government financial compensation and stakeholder compensation through reasonable management and utilization should be gradually realized. Thus, subsidy systems could be established for, among others, tree planting, tending, protection and management; forest fire, pest and disease control; superior tree seeds; and biogas development.

Reforming FCF management to gradually decrease FCF collection and regulating usage should be carried out. The administrative operational expenses of government forestry sectors at various levels should be properly listed in annual financial budgets. Forest fire control, forest pest and disease control and infrastructure development of forestry administration and law enforcement systems should be included in basic government development plans at various levels. The development of infrastructure including transportation, water and electricity supply, as well as communications in forest areas should be reported in relevant industry development plans. Investment in infrastructure development in remote mountain areas, sandy areas and areas where minorities reside should be strengthened. Establishing credit guarantees and risk investment funds for private sector investment in forestry should be conducted, as well as reforms of mortgages for use rights and forest insurance.

The forestry investment policy for the private sector should match the forest industry policy, with the prime components being subsidies, tax exemption/reduction and provision of loans with discounted interest. The private sector must be encouraged to provide funds for and participate in various forestry development activities, with appropriate government support.

### *Adjusting tax policy, tax and fee exemption or reduction*

The tax rate should be equal for all stakeholders; unreasonable fees should be abolished in order to create a fair competitive environment for investment in forestry (State Forestry Administration 2002a). In areas where economic forest is not well developed or with low forest cover, there should be a low tax policy for forestry development. For commercial forests, some taxes can be exempted but clear-cutting should have a higher tax rate. For practices beneficial to intensive forest management and/or those that are useful for forest rehabilitation, a low tax rate is better; logging practices that destroy forest vegetation and impede forest regeneration with negative ecological results warrant a high tax rate.

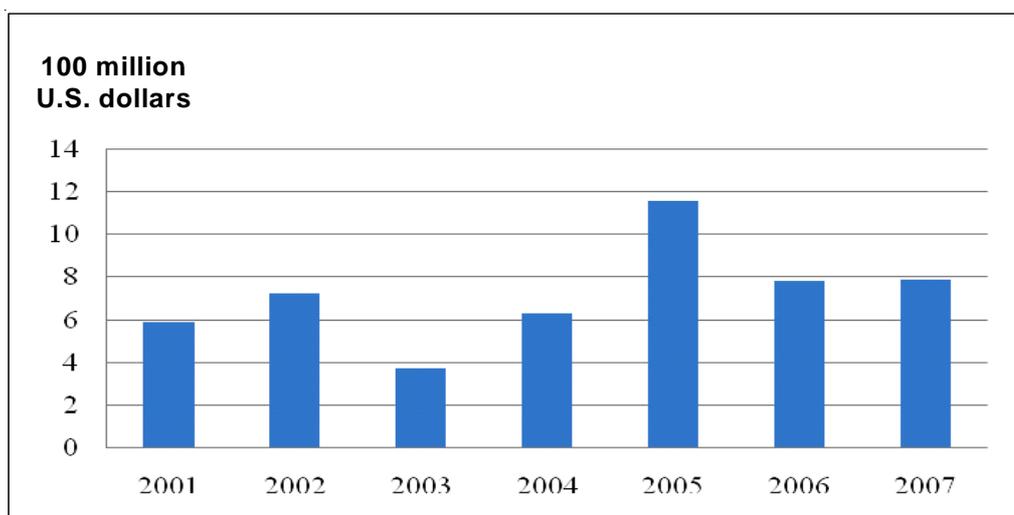
Regarding the Notice on Value Added Tax on Integrated Utilization of Products Made by “Three Kinds of Residuals” and Secondary Small Fuel Wood, issued by the Ministry of Finance and State Administration of Taxation in 2001, the end date should be extended from 2005 to 2020 or deleted. The Notice on the Ideas to Strengthen the Development of Paper Making Industry Material Forest Base issued by the former National Planning Committee (National Development and Reform Committee), Ministry of Finance and State Forestry Administration in 2001, could be extended to other forest production materials. A feasible plan would be:

1. For income from logs and bamboo that households and private enterprises produce and sell themselves, value-added tax can be exempted. Based on the cost calculation (including land leasing and interest) of forest management and production, the managing households and private entrepreneurs pay income tax at a relatively low rate.
2. For private sector commercial forest development, investment enterprises should be treated equally. For the FCF and fees for regeneration that foreign enterprises incur after site planting, after review and approval by forestry administrations, 50-70 percent of the paid fund and fees can be returned to the enterprises for afforestation and forest management. For foreign enterprises with plantation areas over 33 300 hectares and integration of paper and pulp making and other timber processing activities, reimbursement for regeneration can be 85 percent.
3. Based on the precondition that administrative operational expenses for running the forestry sector and the forest resource protection fund have been fully listed in the government’s financial budget, the FCF and regeneration fee can be exempted or the FCF collection proportion can be reduced in steps. Each province should have its own socio-economic development level and set the deadline to return the FCF to forest managers as soon as possible. Currently the fee for maintaining regeneration can be directly calculated as a production cost by the producer. In 2006, Hubei Province changed the collection standard for ‘the fund and fee’ from 20 to 10 percent, and in 2007, the FCF and the fee for regeneration were collected at rates of 6 percent and 4 percent respectively.
4. For income from the initial processing of forest products, the enterprise income tax can be exempted; for tree seedlings for breeding and afforestation on Four Types of Barren Land, all taxes and fees can be exempted.

### **Eliminating negative factors for foreign investment in forestry**

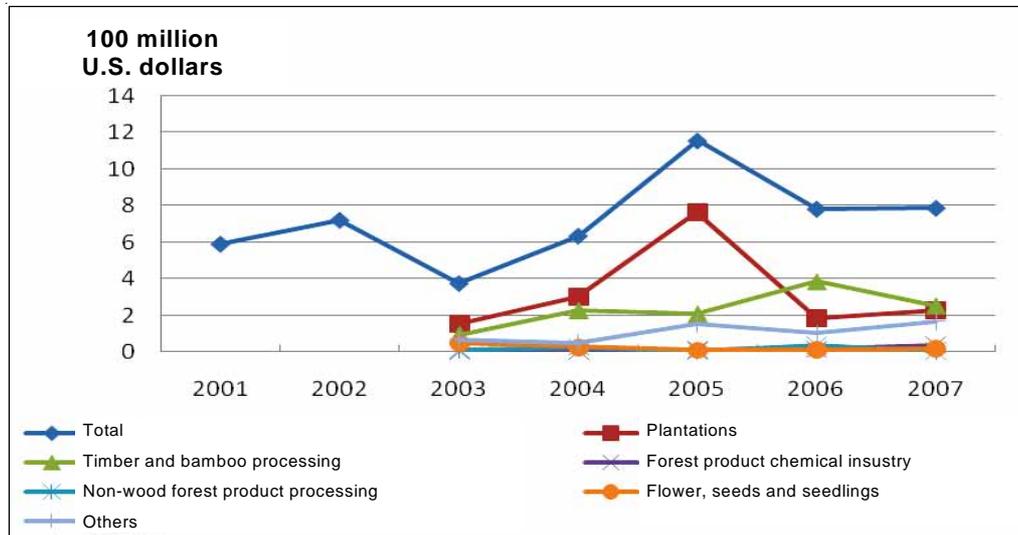
In 2007, there were 523 foreign investment projects in China's forestry sector with capital injection of US\$786 million; this comprised US\$169 million of foreign loans, US\$581 million of foreign company investment and US\$36.53 million of grants, accounting for 21.5, 73.92 and 4.65 respectively of the total amount. Foreign investment concentrates in competitive industries like timber and bamboo processing, fast-growing and high-yielding forest species for afforestation, flowers, seeds and seedlings. International giant paper-making enterprises like Asia Pulp & Paper Co., Ltd and Stora Enso conduct tree planting and afforestation all over the world and have established fast-growing and high-yielding forests for paper making on a large scale. To date, international timber companies have invested over US\$375 million in China's afforestation projects, US\$12.5 million in forest management and have established 66 700 hectares of raw material forest bases.

Negative factors: Infrastructure, including transportation, water supply, electricity supply and communications is underdeveloped. Laws and regulations for encouraging and protecting foreign capital invested in forestry in some areas are incomplete, or cannot be carried out; there is also a gap in protecting foreign company benefits from forestry. The industry policy on foreign investment in forestry is unclear; the Guideline Contents on Foreign Investment Industry issued in 1995 address agriculture, forestry, animal husbandry, fisheries and relevant industries and attach importance to the use of foreign loans. But there is no concrete industry policy. Flexible and effective foreign management institutions are lacking in the forestry sector. Forest product export by processing enterprises is managed by different authorities and institutions, thus, efficiency is not high; management rules for forest land are too complicated; the management area of forest land is widely scattered; and there are always disputes over ownership of forest trees. These are major factors for impeding foreign investment in forestry (see Appendix 5; Figures 10 and 11).



**Figure 10. Foreign capital utilization in forestry in China between 2001 and 2007**

Source: SFA (2001-2007).

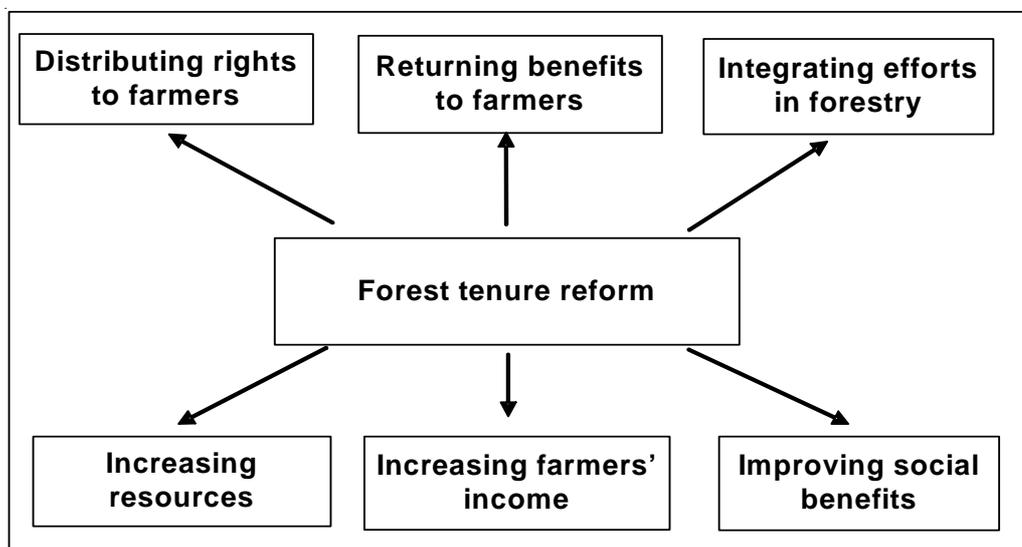


**Figure 11. Foreign investment utilization in China**

Source: SFA (2001-2007).

### Conclusions and recommendations for promoting private sector investment in forestry

China's governments at various levels should further concentrate on coordinating the subsidization of forestry through supplementary measures, such as mechanisms for taxes and fees, forest land transfer, credit and insurance to allow greater profits for forest managers and to promote the sustainable development of private sector commercial forests. A more competitive production platform should be developed as well as more efficient fiscal expenditure. The forest tenure system should better clarify property rights, have strong safeguards and facilitate smooth transfer of ownership (Yao Shunbo 2003). The overall objectives of modern forestry development in China are to innovate management and operational schemes, rehabilitate forests, conduct collective forest tenure reform and enhance the investment environment for private sector forestry development (Figure 12).



**Figure 12. Objectives of China's forest tenure reform**

***Strengthening forestry authorities to assist farmers' households and small and medium enterprises to invest in forestry***

According to Article 3 of Chapter 1 of the Promotion Law on Medium and Small Enterprises of the People's Republic of China implemented since 1 January 2003, the following measures should be taken to encourage private sector investment in forestry:

- Strengthening macrocontrol and guidance; forestry administrations should promote effective policies, proper scientific planning, sound awareness-raising campaigns and strict policy enforcement and supervision.
- General services should be strengthened, especially forest fire control, pest and disease control as well as science and technology extension.
- Integrated administrative reform is needed to combat illegal activities that destroy forest resources and to defend farmers' legal rights and benefits. Farmers' empowerment and participation in decision-making should be facilitated. Logging quotas, logging licences and timber transportation certificates should be monitored to prevent abuse of power for personal gain.
- Public infrastructure development should be addressed.

***Establishing forestry insurance mechanisms supported by the government***

In order to strengthen the private sector's capacity to resist risk in forestry investment and afford better credit lines, new policy-related forest insurance and forestry credit systems should be developed, especially in the context of coping with the effects of natural disasters.

### **Improving forestry services**

The Law of Farmer Specialty Cooperative of the People's Republic of China (implemented since 1 July 2007) addresses the lack of law related to private sector investment in forestry. In the context of improving forestry services, support for forestry cooperative organizations should be strengthened so they can develop independently over time, and in accordance with the 'green box' policy of the World Trade Organization. A service network with multiple levels, forms and economic components should evolve and farmers should be provided with comprehensive supplementary services before, during and after production. Farmers' cooperative organizations should improve their organizational capacity to deal with market fluctuations. Various centres for forestry planning and design, forest asset evaluation and forestry science and technology extension should be set up to provide farmers and other forestry managers with these important services.

### **Trade regulations and management rules for forestry markets**

A mechanism that integrates information dissemination, market trade data, forest tenure right registration, intermediary agency services, law and policy consultation should be created. While comprehensively promoting collective forest tenure reform, supplementary reform should be carried out to provide means for convenient and quick forest tenure right registration, forest asset evaluation and property right trade. Forest right trading needs to be regulated with regard to the different types of transfer. A property right trade centre could provide protection for private forest management rights, assist with registration and notification of forest right changes and follow-up services after transfer.

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**Appendix 1a. Plantation statistics for ten provinces in southern China in 2003 (hectares)**

Province	Subtotal	Plantations established by state-owned economic entities	Plantations established by collectively -owned economic entities	Plantations established by private sector economic entities
Zhejiang	22 114	2 021	8 706	11 396
Anhui	194 508	7 782	40 871	145 855
Fujian	16 581	906	6 444	9 231
Jiangxi	219 745	12 461	27 956	179 328
Henan	320 124	28 369	41 470	250 285
Hubei	315 476	44 462	59 280	211 734
Hunan	409 578	55 882	73 600	280 096
Guangdong	48 020	11 314	15 673	21 033
Guangxi	277 969	43 707	41 626	202 636
Hainan	75 206	8 810	3 841	62 555

Sources: SFA (2004).

**Appendix 1b. Plantation statistics for ten provinces in southern China in 2004 (hectares)**

Province	Subtotal	Plantations established by state-owned economic entities	Plantations established by collectively -owned economic entities	Plantations established by private sector economic entities
Zhejiang	20 948	3 209	7 785	9 954
Anhui	54 364	4 796	12 446	37 122
Fujian	16 306	1 716	4 243	10 347
Jiangxi	58 097	10 178	5 314	42 605
Henan	273 858	28 822	28 979	216 057
Hubei	162 488	36 959	27 182	99 247
Hunan	333 772	24 392	114 750	194 630
Guangdong	39 961	5 724	7 420	26 817
Guangxi	170 704	38 201	20 087	112 416
Hainan	35 393	2 739	816	31 838

Sources: SFA (2005).

**Appendix 1c. Plantation statistics for ten provinces in southern China in 2005 (hectares)**

Province	Subtotal	Plantations established by state-owned economic entities	Plantations established by collectively -owned economic entities	Plantations established by private sector economic entities
Zhejiang	20 341	1 021	8 890	10 430
Anhui	36 095	5 352	7 643	23 100
Fujian	24 218	3 306	3 175	17 737
Jiangxi	47 589	11 819	4 779	30 991
Henan	186 715	22 378	20 005	144 332
Hubei	177 946	35 106	13 184	129 656
Hunan	136 479	12 081	0	124 398
Guangdong	18 337	4 810	1 139	12 388
Guangxi	123 970	10 846	9 812	103 312
Hainan	32 380	1 400	1 871	29 109

Sources: SFA (2006).

**Appendix 1d. Plantation statistics for ten provinces in southern China in 2006 (hectares)**

Province	Subtotal	Plantations established by state-owned economic entities	Plantations established by collectively -owned economic entities	Plantations established by private sector economic entities
Zhejiang	11 368	1 571	5 271	4 526
Anhui	3 402	360	642	2 400
Fujian	23 352	1 134	2 678	19 540
Jiangxi	63 601	16 280	4 497	42 824
Henan	170 612	14 702	27 303	128 607
Hubei	65 913	8 314	8 698	48 901
Hunan	134 529	23 266	21 410	89 853
Guangdong	7 305	1 947	352	5 006
Guangxi	119 280	10 741	6 627	101 912
Hainan	23 617	579	1 260	21 778

Sources: SFA (2007).

## Appendix 2. Forestry tax and fees in Jiangxi Province in 1999

Type	Items	Percentage of taxes and fees collected	Targets from which taxes and fees are collected	Departments that collect taxes and fees
Legal tax revenue collected by local financial department	Special agricultural product tax	15% of sales income	Forest farms and farmers and purchasers	Local Tax Bureau
	Special agricultural product additional tax	1.6% of sales income	Forest farms and farmers and purchasers	Local Tax Bureau
Tax revenue collected by local financial department	Flood prevention and security fee	1.5% of sales income	Forest farms and farmers	County Financial Bureau
	Non-staple food adjustment fund	US\$0.25/m <sup>3</sup>	Forest farms and farmers	County Financial Bureau
	Fund for key programme development	1-5% of sales income	Forest farms and farmers	County Financial Bureau
Fees collected legally by forestry sector, with approval of central or provincial government	FCF	12% of the first selling price will be collected from the operation and management units after purchase, and 15% of the transaction value of direct sales by collective forest farmers will be collected.	Forest farms and farmers	Forestry sector
	Fee for maintaining simple regeneration	8% of the first selling price will be collected from the operation and management units after purchase, and 10% of the transaction value of direct sales by collective forest farmers will be collected.	Forest farms and farmers	Forestry sector
	Forest protection and construction fee	US\$0.625/m <sup>3</sup>	Forest farms and farmers	Forestry sector
	Plant quarantine fee	US\$0.25/m <sup>3</sup>	Forest farms and farmers	Forestry sector
	Forest protection and fire prevention fee	US\$0.25/m <sup>3</sup>	Production units in forest areas and forest farmers	Forestry sector

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	Forest pests and diseases control fee	US\$0.625/m <sup>3</sup> for Chinese fir, US\$0.625/m <sup>3</sup> for pine and other species, US\$0.0625/stem for Moso bamboo	Forest farms and farmers	Forestry sector
	Forest industry enterprise management fee	US\$0.75/m <sup>3</sup> RMB0.00625/stem for Moso bamboo	Individuals, forest farms and farmers, purchasers that apply for timber release	Forestry sector
	Administrative management fee	US\$1.625/m <sup>3</sup>	Forest farms and farmers	Prefectural Forestry Bureau
Fees collected by forest sector	Logging design fee	US\$0.75/m <sup>3</sup>	Forest farms and farmers	County forestry sector
	Cost of making release permits	US\$0.025/m <sup>3</sup> for each release permit	Forest farms and farmers	County forestry sector
	Moso bamboo development fund	US\$0.0125/m <sup>3</sup>	Forest farms and farmers	County forestry sector
	Fee for log scaling	US\$0.25-0.625/m <sup>3</sup>	Forest farms and farmers	County forestry sector
	Profit deduction and reserve made by township government/village committee	5%-10%	Forest farms	Township government/village committee
	Release fee	US\$ 0.25/m <sup>3</sup>	Forest farms and farmers	County forestry sector
	Biogas digester construction fund	US\$ 0.25/m <sup>3</sup>	Forest farms and farmers	County agriculture sector
Fees collected by other departments	Energy development fee	US\$0.125-0.625/m <sup>3</sup>	Forest farms and farmers	County agriculture sector
	Industrial and commercial management fee	RMB0.25-0.625/m <sup>3</sup>	Forest farms and farmers	County Industrial & Commercial Administration Bureau

Source: Sun Jian (2008).

### Appendix 3. Before and after collective forest tenure reform in Jiangxi Province

#### Changes in weighted average transaction price of Chinese fir (*Cunninghamia lanceolata*) forest (US\$/ha)

Item	2004	2005	2006	Increase of percentage in the first half of 2006 compared with that in 2004
Average value	939.41	1 325.66	1 953.71	107.97
Below 5 years	359.08	533.81	767.46	113.73
6-10 years	597.06	828.47	1 164.23	95.73
11-15 years	893.7	1 225.73	1 802.36	101.67
16-20 years	1 207.31	16 863.32	25 764.42	113.4
Over 20 years	1 663.2	3 345.98	3 345.98	101.18

#### Changes in weighted average transaction price of broadleaf forest (US\$/ha)

Item	2004	2005	2006	Increase of percentage in the first half of 2006 compared with that in 2004
Average value	534.54	744.3	1 058.31	97.98
Below 5 years	199.39	316.76	445.63	123.5
6-10 years	326.23	491.94	653.27	100.25
11-15 years	534.3	720.73	994.5	86.14
16-20 years	757.56	1 001.72	1 475.16	94.73
Over 20 years	894.86	1 155.73	1 709.64	91.05

#### Changes in weighted average transaction price of Moso bamboo (*Phyllostachys heterocycla* var. *pubescens*) forest (US\$/ha)

Items	Average price in 2004	Average price in 2005	Average price in 2006	Increase of percentage in the first half of 2006 compared with that in 2004
Annual average leasing price	25.88	48	105.94	309.42
Moso bamboo forest transaction price	213.75	420	911.25	326.32

### Changes in transaction price of barren mountain slopes (US\$/ha)

Items	Average price in 2004	Average price in 2005	Average price in 2006	Increase of percentage in the first half of 2006 compared with annual growth of average price
Annual average leasing price of barren mountain slopes	9.75	25.88	34.5	257.69
Transaction price of barren mountain slopes	253.13	646.88	945	273.33

Source: Liu Can *et al.* (2008).

### Appendix 4. Average mountain and hilly areas operated and managed by farmer households in some provinces of China between 2000 and 2006 (0.06 ha per capita)

Year	2006	2005	2004	2003	2002	2001	2000
The whole nation	0.13	0.32	0.21	0.19	0.28	0.28	0.28
Hebei	0.1	0.09	0.08	0.07	0.18	0.18	0.19
Shandong	0.05	0.04	0.03	0.01	0.03	0.03	0.04
Henan	0.04	0.02	0.01	n.a	0.02	0.02	0.01
Jiangsu	0.01	0.01	0.01	0.01	n.a	0.03	0.03
Zhejiang	0.43	0.42	0.43	0.39	0.44	0.44	0.4
Anhui	0.24	0.32	0.09	0.04	0.19	0.19	0.19
Fujian	1.12	0.76	0.38	0.12	0.47	0.47	0.45
Jiangxi	0.88	0.75	0.64	0.61	0.65	0.65	0.72
Hubei	0.55	0.5	0.31	0.34	0.38	0.38	0.37
Hunan	0.57	0.56	0.33	0.34	0.38	0.38	0.39
Guangdong	0.27	0.37	0.46	0.46	0.4	0.4	0.36
Guangxi	0.63	0.63	0.26	0.43	0.46	0.46	0.51
Hainan	0.78	0.88	0.44	0.16	0.37	0.37	0.32
Guizhou	0.28	0.29	0.19	0.16	0.35	0.35	0.36

Source: Liu Can *et al.* (2008).

**Appendix 5. Investment in forestry by foreign investors 2001-2007  
(US\$1 000)**

Year	Total	Classified in the light of projects					
		Tree planting and afforestation	Processing of timber and bamboo	Forest product chemical industry	Processing of non-wood forest products	Flowers, seeds and seedlings	Others
2001	588 950	n.a	n.a	n.a	n.a	n.a	n.a
2002	720 690	n.a	n.a	n.a	n.a	n.a	n.a
2003	372 340	151 220	93 960	2 390	12 230	46 350	66 190
2004	632 900	300 670	226 450	5 380	27 830	26 800	45 770
2005	1 155 890	766 410	207 240	11 660	6 220	11 770	152 590
2006	781 320	183 410	384 680	621 20	38 150	12 850	100 110
2007	786 180	225 960	252 300	117 240	6 610	18 600	165 470

Source: SFA (2001-2007).



# Investing cash and kind: An exploratory case study of the investment climate in the Indian forest sector

Chetan Agarwal<sup>1</sup>

## Introduction to India's forests and forest sector

India has stable forest cover of around 20 percent of the total geographical area. Reported forest cover increased marginally from around 19.49 to 20.6 percent between 2001 and 2003. The latest available forest assessment (FSI *State of forest report 2005*, released in December 2008, with data from 2003) reported that despite a decline of 0.11 percent in forest and tree cover between 2003 and 2005, 20.60 percent of the area was under forest cover and 2.95 percent under tree cover, covering 76.8 million hectares with an average growing stock of 80.9 m<sup>3</sup>/hectare (Table 1).

**Table 1. Summary of forest and tree cover in India**

	Area of cover (million ha)	% of geographic area	% of geographic area*	Total growing stock (billion m <sup>3</sup> )	Average growing stock (m <sup>3</sup> /ha)
Forest cover	67.71	20.60	21.81	4.6	67.9
Tree cover	9.17	2.8	2.95	1.61	175.6
<b>Total</b>	<b>76.88</b>	<b>23.4</b>	<b>24.76</b>	<b>6.22</b>	<b>80.9</b>

\* Excluding unplanted rocky, high altitude areas.

Of the total geographical area of 328.73 million hectares in the country, forest cover, at 67.71 million hectares, is well under the recorded forest land of 77.82 million hectares. This is partly because some forest lands are not physically suited for forest cover – they may be natural grasslands and pastures, or rocky, or under permanent snow/ice cover. Approximately 183 185 km<sup>2</sup> are above 4 000 metres where tree cover is biophysically not possible. Thus, for example, in hilly areas forest cover increases from 38.85 percent to 52.4 percent after adjusting for the non-plantable forest area (FSI 2008). On the other hand, forests also exist outside recorded forest lands – on *panchayats*,<sup>2</sup> revenue and community tenure lands, and as the *State of forest report* (SFR) assessments cover the entire country, they include this forest outside recorded forest lands as well. Comparing the results of recorded forest area and forest cover of four states/union territories combined for which such disaggregated data are available in the SFR 2005 for the first time, it appears that 63.5 percent of forest cover lies inside the recorded forests and 36.5 percent exists outside.

<sup>1</sup> Winrock International.

<sup>2</sup> Local government bodies

In addition to the importance of forest cover outside recorded forests, it may also be worthwhile to point out a few other facets of the occurrence of forests in India. First the seven northeastern states alone have 25.11 percent of the national forest cover. Second, approximately 188 (of a total of about 500) tribal districts have 60.11 percent of the forest cover.

Degradation of land, water resources and biodiversity is another major challenge facing India. Although India has witnessed an average GDP growth rate of 8 percent for the last several years, satellite data confirm that during 2000 to 2002, dense forest cover had declined by 6.3 percent, indicating degradation. The Forest Survey of India report of 1995 (FSI 2005) estimated that 53 percent of the forest area is affected by fire, 78 percent is overgrazed and 74 percent suffers from inadequate regeneration. This is partly driven by the high population levels and therefore the low per capita levels of forest area, as well as high dependence on grazing and fuelwood collection for local subsistence and sale.

Thus, Indian forests face the paradox of a skewed forest produce situation: While as ecological production systems, forests can produce about 70 percent of biomass as timber, and the rest can be used as fuelwood, the Indian demand for woody biomass is 70 percent for fuelwood and 30 percent for uses in timber form. Much of the fuelwood removals are unrecorded as well (GOI 1999).

Forest ownership records also vary. According to one estimate, 85 percent of recorded forest is with the state, 11 percent with communities and about 4 percent is private forests. Ceilings on agricultural landholdings and private forests and forest plantations also restrict large-scale ownership of private forests (GOI 2006). Another estimate puts 93 percent of forests under Forest Department control, 4 percent with revenue departments, 1.5 percent with corporate bodies and communities and 1.5 percent under private forests (Saigal and Kashyap 2002).

Nevertheless, forests in India probably have the highest absolute level of human dependence in the world, both in terms of the numbers of people, and the volume and diversity of use. Approximately one-third of the population, or nearly 400 million Indian citizens, live in or near forests and harvest forest produce, especially non-wood forest products (NWFPs) for subsistence and supplemental income.

The pressure on forests is reflected in the most recent average growing stock ( $\text{m}^3/\text{hectare}$ ) estimates – forest areas have  $67.9 \text{ m}^3/\text{hectare}$ , while tree cover areas outside forests have growing stock almost threefold higher, at  $175.6 \text{ m}^3/\text{hectare}$ , for a combined average of  $80.9 \text{ m}^3/\text{hectare}$ . This is much lower than Asian and global averages. Forty-one percent of forest cover has already been degraded and dense forests are also losing their crown density. The decrease in growing stock as a result of degradation could be higher than the increase in growing stock as a result of reforestation or afforestation. Conservation of non-degraded forests must be given very high priority and regeneration of degrading forests needs high priority.

At the same time it may be argued that India's forests (and trees on private lands) are among the most heavily regulated in the world.<sup>3</sup> Consider this view from Gujarat:

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<sup>3</sup> In fact, it would be instructive to compare Forest Stewardship Council (FSC) and other certification standards as they might be applicable to India, with the current regulatory burden on trees on private and public lands, and whether FSC certification might not be less burdensome on both communities, industry and government, and more effective.

*The process of administration is cumbersome, time-consuming and impractical in a country the size of India. Therefore, the only way to “administer” is by breaking the law. Or through demanding a price for allowing the law to be broken (Anonymous 1999)*

This combination of (a) high dependence and (b) extensive regulation, has, over the last 150 years, often led to a high level of friction in the interaction between local Forest Department staff and rural citizens, especially in the tribal regions. This has also led to extensive degradation of forests. For example, dense forest cover, after increasing from 57.98 percent to 61.7 percent between the 1997 and 2001 SFRs, had declined to 57.19 percent in the 2005 SFR. This is despite an average rate of planting of 1.5 million hectares (on both public and private lands) since 1990.

Recognizing the degradation of forests and forest cover through the 1980s and the importance of forest environmental services and local needs, a new forest policy was enunciated in 1988. This was a paradigm shift from the earlier policies of 1894 and 1952, which emphasized colonial and national needs respectively for timber. However, the laws for implementing the policy are still being enacted and include the Biodiversity Act of 2002 on the one hand and the Forests Rights Act (2006) on the other. The flagship Indian Forest Act, circa 1927, is over 80 years old and has yet to be seriously amended to include both biodiversity and local community concerns.

Subsequent to the 1988 Forest Policy, the Joint Forest Management (JFM) programme was launched in 1990 – based on a simple guideline issued by the central Ministry of Environment and Forests. According to available records, about 13.8 million families (4.8 million families from Scheduled Tribes) organized in 99 868 JFM committees, are protecting 21.44 million hectares of forests. Many of these forests are degraded. JFM committees now cover approximately one-third of recorded forests.<sup>4</sup> The overall objective is to bring forest in and around most of the 173 000 forest fringe villages under JFM

There is a high percentage of population below the poverty line living in forested areas, varying from 69.02 percent in south Orissa to 44 percent in Chhattisgarh – 37.2 percent being the national average (Saxena 1999 in GOI 2006). A visual interpretation of forest, tribal and poverty maps in the mid-1990s clearly illustrated the prevalence of poverty in forest and tribal areas, particularly in central India (Poffenberger and McGean 1996).

The contribution of formal forest produce was assessed at around Rs.237 980 million in 2001 to 2002 (at current prices),<sup>5</sup> roughly 1.5 percent of the total GDP of the country. This is thought to be an underestimate as large proportions of removals, whether legal or not, are not recorded. The value of environmental services is also excluded from this assessment. The Ministry of Environment and Forests has estimated the annual value of so-called

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<sup>4</sup> To put this in perspective, more than the 15.60 million hectares (4.74 percent of the geographical area) are under protected areas, where participatory protection and management options under ecodevelopment committees have largely stalled.

<sup>5</sup> US\$1.00 = Rs.45 (approximate). This value was obtained from <http://www.mp.nic.in/des/scmp2000/scmpsub.htm#I>

‘underestimated uses of forests – forest grazing, green fodder collection, local use of medicinal plants and food collection’ at approximately US\$27.3 billion (GOI 1999).

Most forest and tree areas are controlled and managed by the state forest departments, either directly for government forests or through restrictions and monopolistic powers on felling, sale and transit of valuable tree and non-timber species. The main significant deregulation has been for short rotation species such as *Eucalyptus* and *Populus*, in areas with limited natural forests – such as Haryana and Uttar Pradesh and other states, and several NWFPs in central Indian states.

Administratively, according to the Indian Forest Act (enacted in 1927), forests are classified mainly as protected forests, and reserved forests. There is also an option of village forests (under Section 28), under which reserved forests may be allocated to communities to manage and protect, but this has never actually been done on any significant scale, presumably because once full government control is achieved in the form of reserved forests, it is hard for the state to convince itself that it should then return forests to communities. In practice there is a variety of forest tenures in each state with varying levels of community stakes, depending on their specific and often unique tenurial history. For example, a study identified over 30 specific forest tenures in Karnataka state alone (Srinidhi and Lele 2001). There are also administratively created categories such as un-demarcated or demarcated reserved forests.

The bulk of forest-based produce is processed in small-scale forest enterprises. This applies to both timber and NWFPs (Saigal and Kashyap 2002). About 75 percent of forest export income comes from NWFPs (MoEF 2008).

The spread of JFM, despite several shortcomings and uncertainties – in terms of tenurial insecurity, inadequate silvicultural development and restricted harvesting and market access – has helped in regenerating forests and meeting local needs (for a comprehensive review see Milne *et al.* [2006]). Where it has worked, JFM has been able to harness the efforts of communities to protect forests and use them as well, with Forest Department support. However, harvesting in JFM forests, for example of bamboo in several states, has always been somewhat contentious.

Simplification of rules governing the harvest, sale and transit of short rotation trees on private lands such as *Eucalyptus* and *Populus* and on NWFPs (on all lands) has also helped, though long rotation tree species such as *Tectona* are still highly regulated, as are high value NWFPs such as *tendu patta* (Saigal and Kashyap 2002; Agarwal 2003). Despite these changes, there is considerable scope for regulatory changes and institutional and market development that can empower and motivate low income producers and collectors. Changes in the legislation and regulations that govern this public-private interaction would reduce the regulatory burden on producers, the implementation burden on the regulating agency, and thereby likely increase the incentives for small-scale private participation in generating forest-based incomes, as well as free up scarce (and expensive and valuable) forest (and revenue) department resources for more productive use.

For the purpose of this study investments are defined as inputs both in cash and kind. Thus, in a JFM programme the Forest Department may be providing cash inputs, while the community may provide in-kind inputs when it protects the selected area – this may be viewed as its ‘sweat equity’. This allows us to include the often undercounted inputs of

communities' closure and protection which are critical elements of the silviculture of forest plantation and regeneration. Secondly, given the preponderance of individual forest workers, self-help groups and other small-scale forest protection and processing entities, the study has included them in the definition of the private sector, along with medium and large units.

The focus of the study is mostly on access to raw material and constraints to value addition faced by communities. A few examples of the experiences of enterprises are also provided.

The study is organized as follows: An overview of the general investment climate in India; review of the specific constraints in a few selected sectors – trees on private lands, JFM, NWFPs and the emerging environmental services sector; and a few specific recommendations for each of these sectors that target regulatory constraints that can be simplified. The study is based on targeted interviews (Appendix 1) and a brief survey of the literature. Interviewees were selected from industry, the government as well as service providers such as consultants and researchers.

## Overall investment climate in India

India has clocked rapid increases in rates of economic growth over the last four years and despite the global economic slowdown, is estimated to record positive economic GDP growth at 5 to 6 percent in 2008-2009 as well. This recent growth is partly attributed to the liberalization in many sectors across the economy. "Telecommunications, airline and IT services are illustrative of what could happen if constraints on the economy were lifted" (Gurría 2007).

At the same time, given the pervasive poverty in the country, the stated growth model is one of inclusive growth. Growth has to carry the larger communities, which are often in the informal sector as well. The recent opposition to a variety of industrial investment projects – from automobiles to mining – across the country suggests that growth models need to be carefully assessed for their impact on local communities before forging ahead. In this context, it may be appropriate to say that:

"...a credible poverty reduction strategy should rest on two pillars: the creation of a good investment climate to propel growth, and the empowerment of poor people to enable them to take part in that growth through enabling their access to health and education, and by fostering mechanisms for their participation in the decisions that shape their lives" (Stern 2002).

Trade reform is a key part of the first pillar of improving the investment climate. Investment and growth can be increased by creating a good investment climate and empowering poor people to take part.<sup>6</sup> Four elements of the investment climate are:

1. Tariff levels.
2. Protection – e.g., anti-dumping.

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<sup>6</sup> In the context of the forest sector, it may be added that people should be allowed to take part on their terms and with their consent.

3. Other investment barriers – reduce transport, customs and port clearance costs and time.
4. Barriers to entry and exit.

There is no direct assessment of the investment climate for the forest sector in India. However, following Stern (ibid) it can be said that as many of the rural poor are dependent on forests, an improvement in the investment climate and their empowerment to participate in decision-making would have positive outcomes for communities and forests as well as any external investors.

To approximate the investment climate that the sector is likely experiencing the study focuses on the following elements.

Investment climate/economic surveys that are available primarily focus on the organized manufacturing sector. The conditions reported here would broadly be applicable to the larger and organized forest sector industries, especially the panel and pulp and paper sector and the organized handicrafts sector. An important aspect that affects forest-based industries is that they are dependent on land-based raw material, and thus affected by all the additional regulations that govern the land and supply of the forest raw material. This aspect of the investment climate – availability of raw material – is dealt with later in the report.

Assessing the investment climate for individual and microlevel enterprises operating in the informal sector, which comprise much of the forest sector. In this context the report relies on: a) analysis from the National Commission for Enterprises in the Unorganized Sector (NCEUIS); and b) data on levels of corruption and impacts on the poor from surveys by Transparency International and other sources.

A few surveys of the general business environment and investment climate are available. For example, a presentation in the Organisation for Economic Co-operation and Development's (OECD) *Economic survey of India 2007* (Gurria 2007) provides a general view focusing on the business environment. Specifically, it highlights that "India's success over the past two decades has relied on a series of reforms in the domestic market which have involved a greater role for the private sector and a reduction of the role of the state in economic affairs." An investment climate assessment by the World Bank and the International Finance Corporation (World Bank and IFC 2004) found significant improvements across different indices between 2000 and 2003. These included number of inspections, time spent by senior management in dealing with regulatory issues, customs clearance days and level of surplus staffing. Table 2 highlights the regulatory aspect. What is noteworthy is that while the number of inspections is higher in both Brazil, and especially the People's Republic of China, the senior management time spent in dealing with them is much higher in India. This last statistic is curious and could be due to a variety of factors, including the complicated (and discretionary) nature of inspections in India, lack of systems and less preparedness to deal with them at the firm level, especially at junior staff levels. The average percent of senior staff time per inspection shoots up for small firms in Mumbai and low technology industries (Table 2).

**Table 2. Objective indicators of the cost of business regulation**

	No. of inspections a year	Senior management time spent dealing with regulations (%)	Average time/ inspection	Days to clear customs	
				Average	Max. experienced
India 2000	11.7	—	—	10.3	20.2
India 2003	7.4	14.2	1.9	7.3	13.4
Brazil	9.6	7.8	0.8	8.4	16.9
China	36	8.1	0.2	9.9	12.5
<i>Small firms in mega cities and low technology industries:</i>					
Mumbai 2000	5.3	-	-	16.5	32.4
Mumbai 2003	4.4	19.6	4.5	13.6	25.5
Sao Paolo	5.1	9.9	1.9	9.5	14.5
Shanghai	27.9	6.1	0.2	5.9	7.4

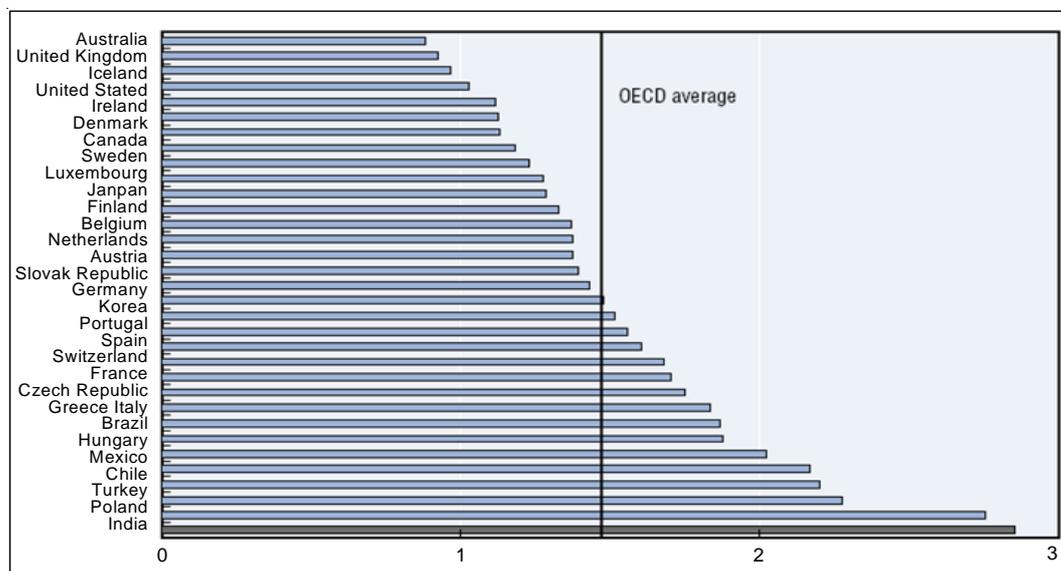
Adapted from World Bank and IFC (2004).

Despite the improvements noted above, a statement from the United States State Department on the 2007 investment climate in India elaborates on the poor transparency of the regulatory system: “The economy is still hobbled by excessive rules and a powerful bureaucracy with broad discretionary powers.” States possess broad regulatory powers and “regulatory decisions governing important issues such as zoning, land-use and environment can vary from one state to another. Opposition from labor unions and political constituencies has slowed reform in such areas as exit policy, bankruptcy, and labor law reform. Despite these shortcomings, central government efforts to establish independent and effective regulators in some sectors, such as telecommunications, securities, and insurance, have shown positive results.”<sup>7</sup>

Similarly, a global study on forest investment opportunities and constraints adapts indicators from the World Development Report (2005), which show that India is still below the global average for most of the indicators for a positive investment climate (Appendix 2) (Canby and Raditz 2006). For example, it takes 89 days and 11 procedures to start a business against a global average of 50 days and 9.9 procedures.

Regarding product market regulations, in this sector also, India is quite over-regulated as compared to OECD countries (Figure 1).

<sup>7</sup> <http://www.state.gov/e/eeb/ifd/2007/80739.htm>



**Figure 1. Product market regulations: an international comparison**

The OECD (2007) survey<sup>8</sup> suggests that long business start-up times likely indicate more widespread problems in government administration, which deter firms' entry into established markets and thus discourage competition and innovation. It suggests that the key step would be to "link reform to reengineering administrative processes from the ground up" as tinkering with existing frameworks will only produce limited results.

Given that most of the forest sector's output is from the small-scale and informal sector, it follows that the overall status of the unorganized sector and informal or unorganized workers should be examined.<sup>9</sup> Informal workers constitute 92 percent of the total workforce in the economy, and they have a high overlap with the 77 percent of the population that has a per capita daily consumption of up to Rs.20 (in 2004-2005). According to the NCEUIS, enterprises may be classified as Own Account Enterprises (OAEs) or establishments. OAEs are individual or household-level efforts, while establishments are those formal or informal enterprises with hired workers.

The survey reported that the main problems faced by individual or households (OAEs) were obtaining credit, followed by marketing and infrastructural constraints. About 30 percent did not report any particular problem, and 64 percent of OAEs thought they were stagnating. Strikingly, the value added per OAE was only in the range of Rs.14 000/year. This amount, when adjusted in per capita terms is well below the daily consumption level of Rs.20 per day. Most forest produce collectors will fall in this category. Thus, it may be construed that

<sup>8</sup> [http://www.oecd.org/document/61/0,3343,en\\_2649\\_34487\\_39463549\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/61/0,3343,en_2649_34487_39463549_1_1_1_1,00.html)

<sup>9</sup> The unorganized sector consists of all unincorporated private enterprises owned by individuals or households engaged in the sale and production of goods and services operated on a proprietary or partnership basis and with less than ten total workers ('informal or unorganized workers'); unorganized workers consist of those working in unorganized enterprises or households, excluding regular workers with social security benefits, and workers in the formal sector without any employment/ social security benefits provided by the employers.

large-scale forest produce collection provides more of a default safety net function rather than a source of high incomes.

Compared to the individual or household enterprises discussed above, enterprises with hired labour had some physical capital and twice the output per worker. These informal enterprises faced issues of capital, competition from larger units and infrastructure constraints, especially power availability.<sup>10</sup>

Issues of access to raw material and regulations are dealt with in subsequent sections.

Another issue is of subsidy and implementation costs. In general, minimum support prices and subsidies on electricity, food and petroleum are mostly reserved for the agriculture sector and do not reach the poorest groups in society because of poor administration and corruption. These programmes in the public sector also have high delivery costs of around 80 percent.

Regarding corruption, while there is some anecdotal evidence, there is limited objective information available in the public domain. The main source found was a survey by Transparency International India (TII) in 2007 on corruption experienced by below poverty line families (BPL); TII reported that the forest departments were ranked six out of 11 government departments *vis-à-vis* the level of corruption; land administration officials and police had the highest levels of corruption. Of the BPL households that interacted with forest departments, 13 percent mentioned paying bribes or using a contact to obtain a service. Of the reasons cited for paying bribes, most BPL households reported permission for picking fuelwood and for gathering saplings, which are the most common forms of interaction (TII 2008).

## Constraints in the forest sector

Forests and trees provide a variety of tangible benefits such as timber and NWFPs, as well as more intangible ones like the provision of environmental services. This section focuses on a subset of the forest sectors: a) the trees, forests and plantations on private lands; and b) forest areas managed by communities – JFM and Community Forest Management (CFM) forest areas. In addition, NWFPs and the provision of forest environmental services (including public and private-owned forest) are examined.

The reason for focusing on trees on privately-owned land is that this is a highly productive industry and is currently responsible for most of the supply of short rotation timber; if deregulated, it can also provide increasing amounts of long rotation timber as well. Table 3 reflects the increasing demand for both short and long rotation timber in the country.

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<sup>10</sup> Presumably their small scale limited their ability to invest in coping mechanisms such as back-up generators.

**Table 3. Summary demand projection of industrial wood from short rotation and long rotation species (in million m<sup>3</sup>)**

Source of wood	2000	2005	2010	2015	2020
Short rotation species	27.87	37.30	50.18	68.76	87.70
Long rotation species	29.85	36.62	44.92	54.40	65.10
<b>Total</b>	<b>57.72</b>	<b>73.92</b>	<b>95.10</b>	<b>123.16</b>	<b>152.80</b>

Source: MoEF (2008).

Currently, most of the short rotation species are sourced from private lands, while long rotation species are sourced mostly from imports and partially from forests and private lands.

The JFM/CFM sector is included as areas under community participation and management cover almost one-third of the forest land of the country, and with the implementation of the Forest Rights Act (2006) this proportion is likely to increase (one estimate says it can double by 2020 [MoEF 2008]). These areas can also be an important source of short rotation timber, mostly poles and small sizes. Both these sectors – if provided with adequate regulatory support and certainty – can motivate small farmers and communities to invest in forestry.

NWFPs are covered as they are important for many stakeholders – starting from the residents of the 172 000-odd forest and forest fringe villages, who depend extensively on NWFPs. Further, about 75 percent of forest exports are NWFPs.

The flow of environmental services from forests underpins the economy and their importance is likely to increase with increasing population growth, scarcity and impacts of climate change. While historically forest management has not focused on environmental services, increasing scarcity has led to renewed interest and active management of them. Increasing interest and use of a variety of old and new instruments for environmental service provision makes creating enabling conditions for investment in environmental services particularly important.

In addition, most of the interactions undertaken for this report suggested that successful enterprises faced shortages of raw materials as well as regulatory constraints on the supply, use and sale of what was available.

### ***Trees, forest and plantation on private lands***

Trees on private lands provide a range of products for their owners including wood for timber, small agricultural implements and NWFPs like fuelwood, leaves for fodder, insects, fruit and seeds. They also serve a public function when they conserve soil, enhance water recharge and stabilize the environment, provide habitats for biodiversity and sequester carbon.

Trees outside forests hold about one quarter of the total growing stock in the country and cover about 12 percent of the total land under forest and tree cover. Discussions with the industry suggested that most short rotation wood supply of *Populus*, *Eucalyptus* and *Acacia* spp is mostly derived from farmers growing trees on their bunds and fields.

In addition, the SFR in 2005 showed that in a study of four states about 36 percent of forest cover was outside government forest lands. This large scale of forest patches outside public forest lands suggests that these forests and their regulatory context need to be carefully assessed to design policy for sustaining them into the future.

This section draws considerably on experiences in Madhya Pradesh (Agarwal 2003) as well as experiences from Himachal Pradesh, and West Bengal. In addition, Saigal *et al.* (2002) was an important source of overview information.

### *Rationale for regulation*

It is hard to ascertain the origin of wood by ownership of land – whether it is owned by a farmer, a corporation or a department. The presence of extensive public forests creates additional pressure to regulate private lands, as there is fear that differential levels of regulation can create incentives to pass off illegally logged wood from public lands as originating from private lands. Forest-poor states like Punjab and Haryana thus find it easier to deregulate – they have little public forest to worry about. Exotic species that are predominantly grown on private lands, like *Eucalyptus* and *Populus*, are also easily deregulated. In Madhya Pradesh, on the other hand, over a third of the geographical area is recorded forest land and a significant proportion of the forests is commercially valuable sal and teak forests. The total growing stock or the volume of timber/wood in Madhya Pradesh is approximately 50 million m<sup>3</sup> with a gross value of Rs.2 500 billion or US\$55.5 billion.

A related issue is the charging of royalty on forest produce originating from private lands. In addition to collecting royalty on specific forest produce originating from public forests, state governments often charge royalty on the produce originating on private lands as well, especially when it is hard to distinguish the origins, for example, *tendu patta* from private lands is also regulated and charged royalty.

A third rationale for regulation of private trees is assumptions and expectations regarding farmer behaviour in the absence of regulation; i.e., that farmers will remove trees on private lands if regulations are relaxed.

Trees on private lands in Madhya Pradesh are governed by several regulations. Permission is required for harvest, commercial use, own use, transit of forest produce as well as conversion of land use. Four key regulations are described briefly below:

- Madhya Pradesh Prohibition or Regulation of the Cutting of Trees, Rules 2002:
  - Specify the institutional structure of permits, location-based constraints on harvesting, harvesting of selected non-timber tree species with local permission.
- Madhya Pradesh Regulation of Felling and Removal of Timber in Villages Adjoining Government Forests, Rules 2002:
  - Establish the institutional structure for permitting harvesting based on use – sale or self-use, as well as conditions for reducing the regulatory burden.
- Madhya Pradesh Transit (Forest Produce) Rules 2000:

- o Define the institutional roles of the Forest Department and *gram panchayats* for regulating the movement of forest produce, especially timber.
- Madhya Pradesh *Lok Vaniki*<sup>11</sup> Rules 2002:
  - o Provide requirements for managing ‘tree clad’ areas on private lands and revenue lands and exclusions from general rules.

Additionally, trade in forest produce is also regulated by the Madhya Pradesh Forest Produce (Regulation of Trade) Rules, while JFM is governed by its own rules.

Combined, these regulations exhibit: a) diverse types of controls; b) multiple points of regulation; and c) considerable regulatory burden on the implementing agencies. Each of these aspects is elaborated below.

The diverse types of controls vary considerably. Controls are based on factors such as:

- Location (distance from the forests).
- Species harvested (is it a quintessential forest species?).
- Use (commercial or domestic).
- Private trees may also face location-based harvesting controls that are driven by environmental or social concerns – conserving trees near waterbodies, in high sloping areas, near public paths, or those fulfilling some other social function.
- The condition of the trees: Dead and dying trees are less strictly regulated than healthy trees; presumably the latter are more likely to be traded commercially. This creates a perverse incentive to hasten the demise of trees to facilitate harvesting – a small cottage industry has ingenious methods in this context such as girdling, putting acid in the roots, etc.

In addition, there are many points of regulation that add to the complexity, including:

- Preharvest (permission at several levels).
- Postharvest (marking of harvested trees).
- Pretransit (approval of a transit permit and charge of royalties and fees if applicable).
- In transit (inspection at check-points).
- Point of sale (if trade in the species is nationalized and there is a monopoly buyer – the Forest Development Corporation for teak wood, etc.).

Further, monopoly control over the supply of wood is enforced, especially for commercially important long rotation species such as teak. These controlled species can only be sold by farmers to the monopoly buyer – the Forest Development Corporation, which charges a handling fee.

These controls create a significant regulatory burden for the local forest and revenue bureaucracy. The implication of these regulations is that objective implementation would

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<sup>11</sup> *Lok Vaniki*, literally means peoples’ forestry. Farmers enrolling forest and plantation areas under the *Lok Vaniki* programme are required to prepare a management plan (with the help of a forester), and can subsequently harvest according to the plan, with low regulatory oversight. In effect, the *Lok Vaniki* programme provides them with an escape route from various other regulations – which were too onerous to modify – so a new option of *Lok Vaniki* was introduced.

require the various regulatory parties involved to undertake the following steps – if they followed the regulations to the letter:

- Ascertain how the applicant will use the wood.
- Whether the tree is dead or dying.
- If dead or dying, was the process assisted or created by human help?
- Whether the slope of the land where each tree is located is above a specified level.
- The species of each tree and whether it is an exempted species.
- Estimate the potential volume.
- Whether the volume is above 2 m<sup>3</sup>, if it is for subsistence use and of non-exempted species.
- Whether the tree confers locational benefits near a path, or waterbody, or has other public benefits.
- Cross-check the harvested wood with the approved amount.
- Hammer mark the wood.
- Approve a transit pass.
- Cross-check the transit pass en route.
- Cross-check the wood if it goes to a sawmill for processing.
- Cross-check wood that comes back to the buyer to confirm it is put for domestic use.
- Buy the wood at the depot, if it is a monopoly item.
- Grade it to determine the potential price.
- Sell the wood.
- Realize payment.
- Subtract costs.
- Send net payment to the seller.
- If the seller is a tribal, credit the amount to a joint account between the tribal and the district collector and monitor the use of the money.

Based on a regulatory review, six farmers were interviewed about their experiences in attempting to harvest and sell trees on private lands;<sup>12</sup> after reviewing the feedback several points may be summarized. First, several farmers had waited many years for permission that was still elusive. Second, they spent relatively large sums of money and expended much time in visiting various government offices. Third, farmers who wanted to avoid these problems typically appointed agents to manage the process for them. However, the agents do not work the system on behalf of the farmers, but for a fixed fee or a proportion of the sale value. The agents prefer to buy standing trees outright at a small fraction of the wholesale price and usually make huge profits. Private trees can play an important insurance role in rural economies, provided they can be harvested at short notice. When regulations are complex, however, farmers in need suffer substantial losses by selling trees to agents. In effect, this situation is a significant regulatory barrier to conducting the business of growing trees, thus reducing the likely returns on investment, and acting as a constraint to farmers investing in growing trees.

In the case of *khair* trees (*Acacia catechu*), a valuable commercial species, in Himachal Pradesh, a faulty interpretation of the forest settlement effectively nationalized the species in Bilaspur District, until a recent reassessment of the tenurial situation revealed the primacy of the farmers' claims over the trees on the land (see Box 1). Thus, the security of

<sup>12</sup> Primary research by the author.

tree tenure is a critical element in providing security to farmers (i.e., that their long-term investment in tending naturally occurring or planted trees on their land will be worthwhile).

**Box 1. Re-interpreting forest settlements: reclaiming tree rights over *khair* in Bilaspur division of Himachal Pradesh**

Bilaspur division in the western Himalayan state of Himachal Pradesh has extensive areas under sloping grasslands, called *kharetars*, that are privately owned. These areas also have considerable naturally regenerated and planted (and subsequently protected) *khair* trees (*Acacia catechu*) – a high value species. During the 1980s, a Forest Department audit team concluded from a reading of the forest settlement that the rights to harvest *khair* trees on these lands were vested with the government, rather than the farmers who owned these lands. Over time this led to the emergence of a contractor regime wherein contractors took the responsibility to fell these trees for the farmer, but paid a small fraction of the market price, as the felling was technically illegal. This led to huge losses for farmers in the district. Over the last year, the forest settlement was re-examined and the tree rights are in the process of being returned to the individual *kharetar* grassland owners.

While tree harvesting will still be managed on a ten-year rotation, as before, farmers can now contract with harvesting contractors to harvest legally, and claim a legitimate and increased stumpage price for their trees (Pushpendra Rana, personal communication). Contractors will also benefit as their business will now be legitimate and they will be less threatened by regulatory action. The Forest Department would benefit by a reduction in illegal trade and suffer less of a regulatory headache. Finally, with the new legitimacy and improved returns, this change in de facto tenure over trees removes insecurity for farmers and is expected to give a fillip to new planting of *khair* as well as protection of regenerating *khair* in the region.

A different kind of regulatory constraint has been reported from West Bengal, where farmers who want to harvest their own planted and/or protected trees are required to replant and provide a safety deposit to the Forest Department (Bannerjee, personal communication 2008). Here, to harvest even short rotation trees like *Eucalyptus* on private lands, the state forest departments requires a safety deposit of about Rs.20/tree (*Eucalyptus*) which will be returned after five to six years, once the replanted trees have established themselves. The ostensible purpose is to ensure that farmers replant and that the planted trees are established. In practice, however, it is simply an additional financial burden on farmers that blocks scarce capital that they may have to borrow. This safety deposit significantly reduces the stumpage value of the trees.

While transit regulations are raised by most parties, another issue that is mostly a concern of the larger pulp and paper firms is of the restrictions on expansion due to land ceiling laws on agricultural lands that also apply to forest plantations. Most still apply the ceiling of approximately 20 hectares. Only rubber, tea and coffee are classified as plantation crops with access to large landholdings, almost all of which were allotted decades or centuries ago, rather than recently.

Given the high population density and low per capita landholding size in the country, and the sensitivities of local communities, increasing the ceiling levels on private landholdings is

unlikely to be a straightforward exercise, particularly in the central Indian states which have high tribal populations with constitutional safeguards against land alienation.<sup>13</sup>

In such a situation, the dominant model is of farm-forestry. Industries such as pulp and paper typically source fibre from thousands of smallholders who plant short rotation tree species on agricultural lands. After experimenting with initial buy-back agreements, as well as bank finance, large paper firms such as ITC Bhadrachalam in coastal Andhra Pradesh have invested considerably in clonal technology research and development. They now sell high quality clonal seedlings to smallholders in the region around their manufacturing plants and buy back the trees at a price that is negotiated jointly with farmers and market officials (Kulkarni 2008). Over time, large investments in developing high productivity clonal varieties of *Eucalyptus* have led to development of fast-growing varieties that provide rapid growth rates of 20-60 m<sup>3</sup>/hectare/year. They are then sold at close to cost and a large market has developed for these varieties. A key intervention and change in regulation has been that the trees are treated as agricultural produce and sold via the local agricultural markets, with minimal regulation. This also provides some semblance of price support, as prices are largely standardized in these markets.

A similar experience is reported with *Populus* clonal varieties in western Uttar Pradesh and Haryana states of north India. Here, in addition to improved productivity of the clonal varieties, what has helped adoption is that *Populus* sheds leaves in winter when the wheat crop most requires sun, thus making it a preferred farm bund agroforestry species. Again, short rotation species are mostly free from harvest and transit regulations in these areas as well (Saigal 2002).

Teak plantation investment firms were very popular in India during the early to mid-1990s. Firms operated in a regulatory vacuum and promised astronomical returns to investors based on high growth rates of teak, high projected prices and low costs. In practice, the growth rates were gross over-projections, costs were hugely inflated and most firms floundered and folded, leaving investors high and dry; thus, the promise of high prices for teak remained moot (Akerkar 1998). Many operations may have been operating as 'ponzi' schemes.<sup>14</sup> In addition, most firms purchased private rural land from farmers, and thus combined land speculation, land alienation and sapling plantation. A government report found huge irregularities and inflation in plantation costs and recommendations were made for their regulation under the Securities and Exchanges Board of India (SEBI). The key lesson here is that the private sector can raise and channel large funds into the forest sector. However, stringent and effective financial regulation, oversight and certification of private sector schemes is required to breathe some life into a revised private sector forest investment model and learn from experience with the much discredited teak plantation forestry companies responsible for the scams of the 1990s.

In recent years, several legitimate private companies have attempted to obtain forest management Forest Stewardship Council (FSC) certification on private and public lands. As highlighted in Box 2, both are a challenge.

<sup>13</sup> The Forest Conservation Act (FCA) also restricts the leasing of government forest lands to private parties.

<sup>14</sup> Fraudulent investment operations where returns were paid to separate investors from their own money or money paid by subsequent investors.

## Box 2. FSC certification in India – constraints on private and public lands

ITC Bhadrachalam, one of the largest pulp and paper firms in India, is known as a relatively ethical and environmentally sensitive company. It has attempted to obtain FSC certification both to burnish its credentials and also to explore export markets. However FSC principles and criteria have not been adapted for India as yet and in their international form do not seem well suited to deal with the many thousand smallholder suppliers who essentially grow trees as a longer duration crop on farmland. While ITC has managed to aggregate producers, meeting FSC requirements remains a hard task. As its export market increasingly asks for certified products, it fears it may not be able to demonstrate sustainability without some changes in the certification guidelines (H.D. Kulkarni, personal communication).

Teddy Exports supplies wooden implements and toys to stores like Bodyshop in the United Kingdom. Its preferred raw material is wood from 12-year rotation *Acacia nilotica* plantations. However, the plantations are managed on a ten-year rotation according to the working plan and despite attempting to obtain FSC certification for over ten years, it has failed. Part of the problem is the plantations are managed by the Forest Department, but harvested by contractors appointed on short-term annual competitive bidding, and bringing both parties together for certification has proven to be a challenge (A. Murphy, personal communication).

Box 2 highlights some of the constraints to independent forest certification for both public and private lands. A mildly successful experience is reported from Madhya Pradesh, where an attempt was made to deregulate for long rotation species and for farmers to get forest management plans in place for those who were willing. *Lok Vaniki*, or Peoples Forestry, is governed by the Madhya Pradesh *Lok Vaniki* Rules 2002, issued under Section 11 of the Madhya Pradesh *Lok Vaniki Adhiniyam* 2001. The rules provide requirements for managing 'tree clad' areas on private lands and revenue lands. A key provision of the rules is that farmers who develop management plans to manage their forests under *Lok Vaniki* are provided a regulatory waiver from the web of pre-existing rules governing harvesting of trees on private lands (elements of which are discussed in the previous pages). *Lok Vaniki* is designed to motivate farmers to think of long-term forest management and not one-time harvest and conversion of land use. Based on discussions and the analysis of the high transaction costs of the previous regulations, it is clear that this benefit is not trivial. It is estimated that 100 000 hectares of private forests (with 20 000 farmers averaging 5 hectares each) could provide as much timber as provided by the Forest Department forests in the state. In Dewas, mean annual increments (MAI) of the private forests can reportedly be increased from 0.46 to 1.5 m<sup>3</sup>/hectare with sound management practices. The key policy attractiveness of the *Lok Vaniki* programme is that it has the potential to double state timber output with little or no investment by the state government, and increase returns to farmers as well as contributing to carbon sequestration and other local environmental benefits. Large-scale implementation would also free up scarce government resources as less regulatory oversight would be required.

However, discussions with stakeholders suggest that the *Lok Vaniki* initiative is fairly sluggish in the state. In fact, approvals under the act were suspended by the Forest Department in 2007 after a few instances of reported malpractices. The fear of illegal harvesting of trees on forest lands is a key concern of the Forest Department, but the Government of Madhya Pradesh, by suspending the programme, sends the wrong message to farmers.

Indeed, it just confirms that the regulatory environment for growing long rotation timber species is highly unstable. Only about 1 366 forests have been brought under management through *Lok Vaniki* (Dixit 2007). In the few districts where several hundred forests have been brought under management, farmers have benefited from harvesting their longstanding trees, predominantly of teak. Informal discussions have also revealed that while the cost of preparation of the management plan and associated permissions range from about Rs.3 000 to Rs.6 000 per plan, this is lower than the costs charged by agents, which were in the range of Rs.400-500 per tree, equivalent to tens of thousands of rupees for many trees.

Based on discussions with farmers, bureaucrats and politicians and as reported by Dixit (2007), the *Lok Vaniki* programme has the potential, with some streamlining, to dramatically enhance the investment climate for small-scale private forestry, leading to an increase in planting, sustainable management and increased supply of timber from forests outside Forest Department forest land. The recent interest of the Government of Madhya Pradesh in reviewing regulatory provisions governing trees on private lands gives rise to the hope that the *Lok Vaniki* programme will obtain renewed support.

### **Joint Forest Management (JFM)**

As discussed in the introduction, JFM (also called Participatory Forest Management – PFM in some states) and Community Forestry Management (CFM)<sup>15</sup> cover almost one-third of public forest land, through about 100 000 Forest Protection Committees (FPCs) and informal committees. Many of these FPCs are actively protecting and regenerating their JFM forests. In addition to general guidelines from the national government, state governments have issued their own guidelines for implementing JFM. Both the terms of engagement with communities and terminology vary across states. For example, many states only undertake JFM on degraded forests, keeping the forest guard as a member secretary; they have not signed MOUs or prepared silviculturally-oriented microplans for communities, demarcated the forest areas in the FPCs, or devolved powers to protect the trees and fine violators. Harvesting and sale permissions still involve high transaction costs and extensive delays.<sup>16</sup>

While they may not be investing cash, they make considerable protection efforts and community members also face opportunity costs in terms of reduced extractions or increased efforts. The importance of local enforcement is highlighted by observers (Pandey 2008). Even if it is assumed that only half the groups have succeeded in protecting and regenerating forests – and value their effort at a bare minimum cost of Rs.5 000/month, this would be worth Rs.3 billion per year (12 months x Rs.5 000/FPC x 50 000 FPC). The value of the forest resource would be many times higher. A conservative estimate of the incremental benefit of regenerating forests by putting them under JFM (at Rs.1 000/hectare/year<sup>17</sup> for just 50 percent of the areas under JFM – 22 million hectares) suggests an annual benefit of Rs.22 billion per year.

<sup>15</sup> In CFM, local primary control mostly rests with the community group, with some oversight and land-use change prevention control with the FD and government. In JFM, most powers rest with the government with some devolution to communities.

<sup>16</sup> Exceptions include: (1) the CFM programme in Andhra Pradesh with a villager as member secretary. Two accounts: one for the village and the other a joint account with the Forest Department; (2) FPCs in good forests and Village Forest Committees (VFCs) for degraded forests, in Madhya Pradesh.

<sup>17</sup> As a point of reference, a Supreme Court-appointed committee estimated forests to be worth in net present value (NPV) terms approximately Rs.500 000 to Rs.900 000 per hectare.

From the point of view of this paper, the primary interest is to look at JFM from the perspective of the various stakeholders and the constraints they face in investing in JFM forests. The regulatory constraints on JFM are manifold (Agarwal and Saigal 1996). Table 4 lists a series of issues identified in the previous JFM guidelines in the state of Orissa (reviewed while developing a forest sector vision for the Orissa forest sector in 2004 to 2005). A detailed analysis of issues, their impact and a proposed solution are provided in Appendix 3. The cumulative impact of these constraints on the operations of FPCs is that they increase the transaction costs for undertaking forestry protection and management and reduce community incentive to invest in forests.

**Table 4. Summary of issues related to joint forest management in Orissa**

<b>Issue</b>	<b>Impact of current situation</b>
Where to take up JFM? (dense forests or only degraded forests?)	Little incentive for communities to conserve good forest areas. Much scope for JFM in tribal-dominated dense forest areas where dependence on forest resources is highest for subsistence and for livelihoods.
Process-versus target-driven approach	Little reporting on meetings, number of MoUs signed, forestry-oriented microplan prepared and implemented.
Legal standing of the local Forest Protection Committee (FPC) ( <i>Van Samrakshan Samiti</i> [VSS] in Orissa)	This leads to the peculiar situation of the VSS being in the hands of one of the partners – the Forest Department (FD). In addition, the burden of providing basic organizational support to the VSS – for conduct of elections, audit of performance and accounts (however rudimentary), management of records, falls, by default, on the FD.
Weak legal backing for forest protection. <sup>18</sup>	Mostly no legislative backing of JFM or CFM. Long-term uncertainty in the VSS as terms can be changed unilaterally by a succeeding executive order. CFM groups want a more flexible legal backing than that provided by JFM. Absence of MOUs reduces the legal backing and tenurial security of the VSS further. Present MOU not legally vetted and therefore its validity in court is questionable.
Structure of the VSS	Forest protection is a local affair and should be managed locally. A <i>Gram Panchayat</i> may encompass several VSS, and the <i>Naib-Sarpanch</i> would have to lead all of them as the <i>ex-officio</i> president, creating an unnecessary burden on this one person. Reduces local ownership of the VSS and slows capacity building. Further, as the numbers of VSS increase, the burden of secretaryship on the forester increases, thus creating a natural limit to the spread JFM in a section.

<sup>18</sup> VSS, formed under government orders issued by the Government of Orissa are currently fairly low in the legal totem pole (constitution, legislation, rules, government orders).

Structure of the executive committee (EC) of the VSS Space for adaptive silviculture aimed at poor collectors and processors	As the forest guard is the convener of the EC, the entire JFM process becomes more FD-driven. Unless funds are seen to be coming into the VSS, there is little incentive to hold meetings. Suboptimal benefits for local users, especially the poor who often go for short-term low value high volume options – e.g., sal leaf, bamboo – rather than long rotation high stumpage options.
Shared vision of the future of the forest lacking.	Reduces feeling of ownership of the community if they have no say in the future of the forest they are expected to nurture.
Benefit sharing	50% share in cash or kind, for the community, but not given for salvage logging. As only salvage logging is being undertaken, the VSS is losing out on its share of produce. All investment is externally funded, none is locally generated.
Role of self-help/user groups Size of area with community groups – restrictions on area, number of villages, etc.	Their concerns may not be addressed by the committee, especially if they collect low value items, e.g., sal leaf. While orders allow VFCs up to 200 hectares, in practice, size is often limited, multivillage VSS are formed, but they are few in number.
Record keeping Protection of non-degraded forest	This is not monitored. No studies are available from the FD. If only degraded forests (typically, with forest crown cover of less than 40%) are put under community management, a philosophical and practical issue arises of whether the Orissa Government wants people to degrade forests before allowing participation.
Management of non-FD recorded forests Recording withdrawals Information sharing	A large area of revenue forest area that is often close to habitation or/and within village boundaries is not being managed. Mostly not recorded, it is hard to assess cumulative benefits. Many VSS have not even seen the JFM guidelines. Makes interaction with the FD more personalized and less institutionalized.
Bank accounts	No provision for bank accounts. Not clear how the VSS keeps money. Suggests that financial devolution was not envisaged at the time of design.
Powers of the VSS	Lack of powers to protect forests. Hinders protection by VSS members. Leaves them open to court cases.
Fines	No local power with the VSS to compound petty offences, collect fines and keep some or all the revenue. Limited incentive to catch offenders, due to increased transaction costs of handing over to the FD, and no benefit to the VSS, even if the FD levies any fines.

Fundamentally the JFM programme is on a weak tenurial and legal footing – it is based on guidelines rather than being implemented specifically through rules or legislation. This has led to a variety of ad hoc situations and excessive discretionary behaviour by the senior partner – the forest departments and their individual staff members, especially when it comes to the harvesting, sale and use of forest produce in JFM areas.

Since January 2008, when the Forest Rights Act (2006) and rules came into enforcement, the areas under JFM as well as other forest areas that have been used by communities can

also be claimed as a community forestry resource (CFR) under the Forest Rights Act (2006) and its rules. This process is underway in several states of the country, but at a rather slow pace. A detailed summary of the tenurial journey for community-managed forests is provided in Box 3.

### **Box 3. The rationale for supporting clear community forest tenure: an incentive for positive forest, livelihood and environmental service outcomes**

India has experimented sporadically with a variety of forms of forest tenure for communities. In the pre-independence periods these included Forest Cooperatives in the Madras Presidency, *Van Panchayats* in the (now) Uttarakhand, Cooperative Forest Societies in Kangra (Himachal Pradesh). Communities also have protected forests, for example, sacred groves nationwide, and have tried to restrict harvesting – such as the Chipko movement. The legal provision of village forests in the Indian Forest Act of 1927 has unfortunately not been used to create lasting local community incentives for protecting forests. Realizing the serious gaps in trying to create strict publicly-owned forests with little local buy-in, and after the indifferent results from Social Forestry Programs in the 1980s, the government initiated JFM in the 1990s. Despite considerable spread its tenurial basis remains weak – in the realm of ‘guidelines’, rather than legislatively backed rules.

At the same time the process of forest reservation followed across the country has been variable in quality. While states like Himachal Pradesh are known to have detailed settlements for agricultural land and forests, in many states, particularly in the central Indian tribal belt, people farming within forest areas were often not identified in the various processes of recurrent land and forest settlements, leading to what has sometimes been mentioned as an ‘historical injustice’. The government process of evicting these individuals farming within forests that was renewed in 2002 to 2004, and the presence of a progressive coalition government in the centre, provided the impetus for the passage of the Forest Rights Act, the primary aim of which is to recognize all legitimate individual and community claims on forest land. The Forest Rights Act has provisions for different kinds of rights:

- Individual rights: The primary aim of the act is to recognize legitimate claims of individuals farming on forest land.
- Community forest rights: Communities can claim rights on forest areas they have traditionally been using and protecting by applying for recognition as a Community Forestry Resource (CFR). In addition to CFRs, communities can have use rights as spelt out in Section 3, and the right to protect and manage forest areas.
- Critical wildlife habitat: The Forest Rights Act provides for inviolate areas which presumably cannot be diverted via the ‘forest clearance’ process.
- Local development rights: Finally, the Forest Rights Act has provisions to simplify small-scale diversions of forest lands for local use – village schools, roads, drinking water schemes.

The Forest Rights Act is likely to have a major impact on the ground in the next few years. Individuals are being encouraged to file applications for regularizing their claims for farming lands. It is not clear yet to what extent claims for CFRs are being filed as well.

Promoting CFRs can be an important complement to individual claims, by allowing settling of claims at the landscape level. By providing stronger tenure to the community as a whole,

the CFR provision allows communities to proactively identify areas that they have traditionally used and protected and keep them as a forest, without necessarily privatizing them. Without such an option, the elements within a community which are in favour of preserving community control – which may have started as self-initiated protection, or under JFM – would have only a reactive role in responding to excessive or any future individual claims.

In this context there is a strong case to re-evaluate the JFM experience and especially implement the CFR provisions of the Forest Rights Act, to provide secure community tenure for forests.

(Prepared by the author)

Bringing public forests under the CFR provisions of the FRA (2006) could address some of the tenurial issues that have constrained community investment in local protection of public forests. They could also provide the added benefit of helping to overcome the key constraint of weak and unsettled community rights and tenure, which has restricted the piloting of independent third party certification (for example the FSC) of public forests in the country over the last decade and may also affect the implementation of Reducing Emissions from Deforestation and Forest Degradation (REDD) activities.

This should be supported by facilitating market access and regulatory reform as well as investment in adaptive silviculture and nested enforcement support to community forests.

### ***Non-wood forest products***

NWFPs are important for both subsistence use and supplemental income through sale for up to 400 million citizens. Approximately 75 percent of forest produce income comes from NWFPs (MoEF 2008). A wide variety is collected for use as fuelwood, fodder, for grazing and other diverse domestic and commercial uses.

A study in Bastar region (now in Chattisgarh State) in eastern India in dry deciduous ‘sal’ forest found that the maximum sustainable yield of timber from 1 hectare of forest was about 10 m<sup>3</sup> of roundwood every 20 years, yielding a net value of Rs.20 000, while non-wood products harvested every year produced a net income of Rs.200 000 over the same period (Tiwari 1993, in Mahapatra *et al.* 1997). Thus, NWFPs provided cash income ten times higher than timber. NWFP incomes also include a higher proportion of labour cost than timber income. A later study from the same forest type in Orissa State estimated the NPV of NWFPs (net of costs) at US\$1 016/hectare in the coastal area and US\$1 348/hectare in the inland areas, both of which were substantially higher than potential timber revenue – US\$268/hectare (Mahapatra and Tewari 2005).

NWFPs were nationalized in the 1960s in most central Indian states, on the stated logic of preventing overexploitation by private contractors. States also developed state bureaucracies for the disposal of the produce, mostly based on monopoly powers. In due course, state

revenues perhaps became more important, especially as timber harvesting declined due to export bans and returns to communities suffered.

The dominant collection and marketing system that developed was that of a State Forest Corporation (or Forest Department) purchasing the gathered produce from the extractors, and then selling it back on the open market through auction to traders or industries after basic sorting or processing. Some products were also leased to forest contractors – who received monopoly rights to collect. However, primary collectors mostly continued to be marginalized. In Madhya Pradesh, for example, a three-tier cooperative structure of collectors has been developed to reduce exploitation of collectors in the form of a Minor Forest Produce Federation.

In general, over time, the regulations and their implementation often evolved to create legal or procedural restrictions for collectors. Accordingly, in the last decade or so, the control of the state over many NWFPs has been deregulated – especially in Orissa, where about 60 to 65 products are deregulated. Bamboo, sal seed and *kendu* leaves, along with *mahua* flowers and tamarind contribute about 80 to 85 percent of total income and government revenue from NWFPs. Official data reflect fluctuating trends in production – due to changes in collection arrangements, changing market policies, low procurement prices, fluctuating market demand as well as changes in availability (S. Patnaik, personal communication).

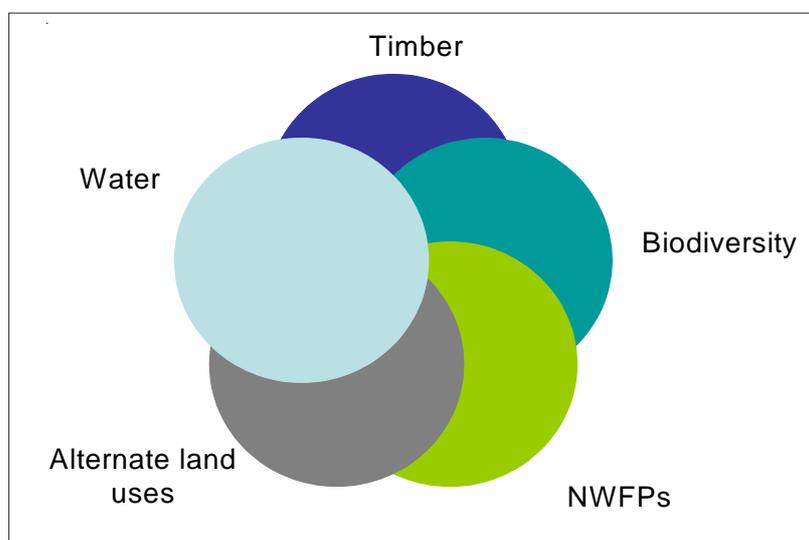
Part of the problem is that the forest management planning (via working plans) and on-the-ground management practices still reflect a timber orientation. Decades of timber-oriented silviculture have also reduced NWFP-oriented species, many being used for self-consumption. Further, prescriptions to improve timber growth can affect NWFP availability (e.g., clearing creepers whose leaves are used) and vice versa (creating clearings for fodder in sal forests reduces tree stems). They need to be revised to reflect the increasing role of communities in forest management as well in NWFP collection. There is a strong need for adopting adaptive management practices that reflect local stakeholder priorities (Rathore and Agarwal 2008). Often forest departmental interest in timber is at variance with community interest in NWFPs as noted in the case of Baiga tribals in northeast Madhya Pradesh, who are resisting timber harvesting by the Forest Department to protect NWFP resources that have regenerated after careful protection (Pallavi 2009).

Another constraint is the lack of research and regulatory constraints on bamboo, which is still treated as a timber, rather than a grass. Lack of harvesting and benefit sharing from bamboo in areas managed by FPCs have led to serious conflicts in states such as Orissa. Access to young green bamboo of one or two years by artisans is constrained as silvicultural guidelines technically suggest harvesting after four years.

A recent review of NWFP governance in Andhra Pradesh, Madhya Pradesh and Orissa focused on bamboo, *kendu* leaf, sal seed, tamarind fruit and *mahua* flowers (Saigal *et al.* 2008). The analysis identified several action points for each product. A common theme across the NWFPs was to reduce the regulatory burden due to transit restrictions, tax and monopolistic procurement policies. At the same time there were suggestions aimed at increasing the benefits to collectors from government interventions in the arena, for example, ensuring that procurement prices reflect minimum wages, profit sharing in nationalized NWFPs and interstate coordination. Finally, a third strand focused on sustainability – assessing sustainable harvest levels and practices (Saigal *et al.* 2008).

### ***Environmental services***

Forests provide a variety of goods and services – some complementary but sometimes conflicting (Figure 2). As noted in the section on NWFPs, timber and NWFP provisioning, adding environmental services to the mix can complicate the scenario further. Further adding the interests of diverse local, regional and broader stakeholders only makes management even more complex. As the rights for different goods and services are spread out among multiple stakeholders, they are reacting largely to their own private needs and incentives. This section explores some of the issues and the constraints they impose on investments by different stakeholders.



**Figure 2. Multiple goods and services of forest and forest land**

A key constraint for local investment in environmental services is that the science is still an emerging area. This is especially true for watershed services and the impact of trees and forests on the hydrological cycle. Further, there is little long-term monitoring and evidence on the impact of forests and forestry practices on runoff and waterflows and groundwater recharge. While there are some studies available globally, studies on the biophysical and social context in India are woefully lacking. Thus, large public investment programmes are carried out without sufficient scientific backstopping so it is hard to convince farmers and communities to both contribute in cash and kind to these programmes or to make investments on their own.

Another concern is of scale – how to match temporal and spatial scales of biophysical processes with those of human decision-making. For example, forest species have different harvesting cycles – from four to 100 year rotations. This has to be matched with the two- to three-year posting cycles for the local forestry bureaucracy. Similarly, tenure types and sizes also vary – and patch-level private ownership, for example, would have to be matched with landscape-level forest dynamics. The latter is very important for most regions of India, with high population densities and small landholdings.

A major issue for selling both forest produce and environmental services is the long gestation between the period of investment and the sale of the produce. For environmental services the effort to modify land-use practices may have to be made first, while the flow of environmental services is typically realized in the future. As this requires managing multiple demands in mixed landscapes, clear and secure tenure rights are an important element for enabling and motivating local investments for the provision of forest environmental services. Once this is in place, it also securitizes external investment in the provisioning of forest environmental services, as there is a credible local stakeholder to engage with.

For government forest areas, officially sanctioned management plans (working plans) are evolving slowly towards managing environmental services, for example, watershed, carbon and biodiversity. It is hoped that an ongoing revision of the working plan code will provide additional environmental service-oriented management options and these will also clearly engage local stakeholders.

Thus, the key elements required are the broad contours of tenure, rights, institutions, local boundaries and who can harvest and sell goods and services. Once they are set, management practices can be put in place. These may be informal rules of thumb, or more formalized silviculture. The primary forest management instrument has been the forest working plan (and more recently the JFM microplan), which is supposed to balance local and non-local needs and interests and the provision of timber, NWFPs and environmental services by forests. Public provision and regulation have been the primary instruments of choice for this purpose. However, a variety of governance mechanisms are available. Appendix 4 provides details on various instruments that can be used to secure environmental services.

## **Conclusions and recommendations**

The partial streamlining of rules governing the harvest, sale and transit of trees on private lands and on NWFPs occurring on all lands has helped promote private sector investment. However, regulatory requirements, especially for long rotation species, still have the (presumably) unintended effect of increasing the duration and complexity of the permit approval process, thus increasing the regulatory burden for farmers and the implementation burden for the designated regulators. Increased transaction and implementation costs dramatically reduce the stumpage value of standing trees, the land value of tree-clad land, the insurance and collateral value of both, and ultimately, returns to owners. In sum, these regulations create a serious disincentive for farmers to nurture existing trees and grow new ones, and, inadvertently, but not surprisingly, create their own supporters – the private agents, financiers, touts – both private and otherwise, who extract rent from the producers for facilitating harvesting.

For government forest areas and especially existing and potential JFM areas it may be safely said that when tenure, boundaries and uses are contested, as is generally the case in India, then management systems tend to yield less than optimal results and additional instruments have to be deployed, and eventually a re-examination of tenure. Criminalization of fuelwood collection, grazing and timber harvesting led to disastrous outcomes for forests with increasing degradation in the 1980s. This led to JFM in the 1990s. The spread of JFM, despite several shortcomings and uncertainties, has helped in regenerating forests and

partially meeting some local needs, but with scope for much improvement. Similarly, flawed forest settlements that omitted many forest dwellers and farmers, especially in the central tribal belts, were followed by ill-conceived eviction drives in 2002 to 2004 and eventually led to the Forest Rights Act of 2006.

Despite these changes, there is considerable scope for regulatory changes and institutional and market development that can empower and motivate low income producers and collectors. Changes in the legislation and regulations that govern this public-private interaction would reduce the regulatory burden on producers, the implementation burden on the regulating agency and thereby likely increase the incentives for small- and large-scale private participation in generating forest-based incomes, as well as free up scarce (and expensive) Forest Department resources for more productive use.

Similarly, improved financial regulation and certification of private sector schemes that raise and channel private funds into the forest sector can breathe life into previously failed attempts such as the much discredited teak plantation forestry companies responsible for the scams of the 1990s.

The potential of private-based forestry to generate wood is significant. For example, trees growing on private land on average have high growing stock and rates of growth and have the potential to supply considerable volumes of short rotation wood, even in forest-intensive states such as Madhya Pradesh, where more than one-third of the land area is under forests.

Just as the poverty and rates of growth vary across states within India, so do the levels of regulation. Consequently, any attempt to overcome regulatory burdens will require a fundamentally new approach that considers local contexts, combined with a review of the underlying rationale behind regulations and an empirical assessment of the impacts.<sup>19</sup>

The recommendations are organized separately for each subtopic.

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<sup>19</sup> Gurria's statement seems quite appropriate here: "The key in this area is to link reform to reengineering administrative processes from the ground up. Working within the existing framework will only produce limited results" (Gurria 2007). Use of technology and support from civil society groups reduces levels of corruption (TII 2008).

## **Trees on private lands**

### **Regulatory**

1. Follow through on deregulation and simplification of felling, transit and sale permission processes for trees on private land for short and long rotation species. Treat short rotation species as agricultural produce, as done in Andhra Pradesh.
2. Invest in forest and private land boundary demarcation, as unclear boundaries, particularly near or adjacent to forest lands, complicate the determination of whether trees are private or not and thus eligible for harvesting.
3. Develop efficient permit systems for high value and highly restricted species that occur on private lands and in public forests, such as teak and sandalwood.
4. Consider credible third party certification that can help get a regulatory waiver, enhance the management of the forests/trees and their productivity and also find market recognition.
5. In urban and rural residential areas develop efficient permission processes with time-bound systems that balance the need for protecting urban trees with the occasional need for pruning and tree removal. The efforts of the Pune Tree Authority system, set up in the city of Pune, which has attempted to provide this balance may be reviewed<sup>20</sup> (Kalpavriksh 2009).
6. Strengthen and streamline *Lok Vaniki* in Madhya Pradesh, and consider credibly managing forests outside government forest lands in other states.
7. Fill the regulatory gap in oversight of private tree plantation firms that raise public funds, to rebuild public confidence and to facilitate tapping of this considerable source of funds.

### **Research**

8. Undertake impact assessments of current regulations.
9. Develop sustainable harvesting practices.
10. Develop options for local forest management plans that balance multiple interests and stakeholders.
11. Assess rates of growth and develop yield tables for different species especially favoured for private lands.
12. Assess research-policy linkages and how policy change happens.

### **Finance**

13. Simplify regulations to promote smooth availability of credit from microfinance institutions, refinancing from the National Bank for Agriculture and Rural Development (NABARD).
14. Develop mortgage options that treat tree assets as collateral and provide loans, rather than requiring their cutting.

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<sup>20</sup> The Pune Tree authority has regulatory powers to maintain and enhance tree cover in Pune and has developed several systems and procedures to discharge its responsibilities. Learning from its experience and how such programmes can change the incentive for urban and peri-urban communities to invest in the plantation and protection of trees, will be instructive.

15. Develop insurance schemes, especially for long rotation tree crops.
16. Explore payment options for carbon sequestration.
17. Incorporate options in the recently passed Compensatory Afforestation Fund Management and Planning Authority (CAMPA) guidelines that provide local financial incentives for forest protection.

### *JFM/CFM*

18. The most important step here will be to implement the CFR provisions of the Forest Rights Act (2006), which provides for clear community tenure for forests used or protected. Conceivably, all JFM areas could become CFRs. This could provide the long-term incentives to communities to invest in their own forests.
19. Invest in developing appropriate silviculture practices and sustainable harvesting techniques that meet the multiple needs of local communities for timber, NWFPs and environmental services.
20. Develop a financing model that is aimed at community needs rather than external needs, and maintains the autonomy of the group. This could be based on government grants and loan funding (e.g., a modified version of the Forest Development Agency funding), environmental service funding, or private sector funding.
21. In addition, the variety of incremental changes that are outlined in detail in Appendix 3 can be adapted to the CFR context.
22. Finally, make a shift from input-oriented to outcome-oriented where local community and government actors benefit from outcomes. For example, in the sal reinvestment fund in Uttar Pradesh, one-third royalty is made available for investment within the local forest division for regeneration and planting of trees, and not deposited in the state exchequer.

### *NWFPs*

23. While many have been deregulated, there is scope for further simplifying transit requirements for those species that remain.
24. In general, make corporations or federations buyers of the last resort by breaking the FDC monopoly purchases of key NWFPs.
25. Invest in silviculture, sustainable harvesting and standards for certification for different NWFPs and uses. As clarity is built on superior techniques, this can help increase yields, reduce uncertainties and also eventually help with certification.

### *Bamboo*

26. Develop silvicultural options for young green bamboo harvesting. A first step towards legal supply of green bamboo for artisans.
27. The Forest Department gives permits to organized artisans (and their suppliers) to harvest green bamboo directly from forests. Artisans secure supplies from JFM areas as well as FPCs or CFRs and are able to sell bamboo.
28. FDCs supply green bamboo to artisans directly where there is demand, to alleviate raw material shortages and reduce transaction costs for artisans.

29. Separate felling series should be earmarked for artisans in the divisions where there are more artisans. Bamboo should be cut specifically to meet their needs instead of meeting their needs from the coupe for commercial bamboo. The same coupe can also meet local community needs.
30. Amend rules to clarify that processed products, especially of bamboo, are exempt from transit requirements.

### *Environmental services*

This is a re-emerging area of interest. As such there is no regulation nationally, while land-use Clean Development Mechanism projects have rarely been cleared.

31. Clarify the issue of forest tenure. Clear tenure is a basic requirement for inviting investment in environmental services on public or private lands. Can carbon payments happen on government lands, say under JFM, when rights are unclear?
32. Clarify ownership of carbon stocks in different types of public and private forests – do they belong to the national government, individuals or local community groups or states?
33. Assess developments in the regulated and voluntary carbon market.
34. Invest in science to better understand how flows of environmental services may be maintained and enhanced – for example identifying changes in water quality, quantity and infiltration zones for securing watershed services. Develop mechanisms for incorporating learning from field experiments and literature into practice and eventually into forest management mechanisms – microplans and working plans.
35. Identify trade-offs in the provision of environmental services and forest products. For example, fuelwood vs carbon, logging vs infiltration.
36. Review options for zoning to enhance the provision of environmental services.
37. Assess options for aggregating investments in environmental services.
38. Review the need for market-based certification or government-based regulation to manage trade-offs and provide credibility and security for both community and external investments.
39. Develop options for conservation of non-degraded forests with high priority, precursors to REDD mechanisms.

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## Appendix 1. Research interviewees

**Sushil Saigal**

Researcher,  
Cambridge University,  
UK

**K.B. Thambi**

Inspector General of Forests  
Ministry of Environment and Forests  
Government of India

**B.M.S. Rathore**

CCF, Madhya Pradesh Forest Department and  
Senior Advisor, Winrock International India.

**H.D. Kulkarni**

General Manager (Plantation), ITC Ltd.  
Paperboards and Specialty Papers Division,  
Sarapaka 507128 Andhra Pradesh, India

**Amanda Murphy MBE**

TEDDY Exports  
Tenkasi Road, Alampatti  
Tirumangalam - 625706  
Madurai Dt. India

**Narayanan**

Indian Pulp and Paper Manufacturers  
Association  
New Delhi

**Ajit Bannerjee**

Independent Researcher  
(Ex-West Bengal Forest Dept and World Bank)  
Calcutta

**Bibekanand Pattnaik**

MASS,  
Mayurbhanj, Orissa

**Sanjoy Pattanayak**

Regional Centre for Development and  
Cooperation (RCDC)

**S.K. Patnaik**

Retired Forester  
Orissa

**Pushpendra Rana**

District Forest Officer, Bilaspur  
Himachal Pradesh Forest Department

**Anjum Masood**

Manager  
Royal Woodcrafts, Saharanpur

**Zulfikar Alam**

Proprietor  
Royal Woodcrafts, Saharanpur

**Pramod Gupta**

Managing Director  
Swiso Certification Pvt Ltd

**M. Dixit**

Retired Forester  
Bhopal, MP

**R.K. Gupta**

Forest Department  
Government of Madhya Pradesh

Appendix 2. Transaction costs of doing business across the world and in India

	Starting a business		Enforcing a contract		Registering property		Resolving insolvency		Investment profile		Intensity of local competition		Transparency of gov't policy making		Regional disparities of business environment	
	Days Jan '04	Proced. Jan '04	Days Jan '04	Proced. Jan '04	Days Jan '04	Proced. Jan '04	Years Jan '04	ICRG 2003	WEF Index 2003/4	WEF Index 2003/4	WEF Index 2003/4	WEF Index 2003/4	WEF Index 2003/4	WEF Index 2003/4		
Bolivia	59	15	591	47	92	7	1.8	9.5	3.8	3	3	3	3			
Brazil	152	17	566	25	42	14	10	7.5	5.2	3.6	2.1	2.1	2.1			
Cambodia	94	11	401	31	56	7	—	—	—	—	—	—	—			
Cameroon	37	12	585	58	93	5	3.2	6.5	4.1	4.4	2.8	2.8	2.8			
Central African Republic	14	10	660	45	69	3	4.8	—	—	—	—	—	—			
Colombia	43	14	363	37	23	7	3	9.25	4.6	4	2.8	2.8	2.8			
Congo	67	8	560	47	103	6	3	8.5	—	—	—	—	—			
Côte D'Ivoire	58	11	525	25	340	7	2.2	6	—	—	—	—	—			
D. Republic of the Congo	155	13	909	51	106	8	5.2	6	—	—	—	—	—			
Ecuador	92	14	388	41	21	12	4.3	6	3.5	2.5	2.9	2.9	2.9			
Ghana	85	12	200	23	382	7	1.9	7	4.3	4.3	3	3	3			
Guatemala	39	15	1459	37	55	5	4	11	4.4	2	2.7	2.7	2.7			
Honduras	62	13	545	36	36	7	3.7	8	3.4	2.9	3.5	3.5	3.5			
India	89	11	425	40	67	6	10	8	5.6	4.1	2.5	2.5	2.5			
Indonesia	151	12	570	34	33	6	6	4.5	4	3.6	3.6	3.6	3.6			
Malaysia	30	9	300	31	143	4	2.3	8.5	5.3	5	3.9	3.9	3.9			
Mexico	58	8	421	37	74	5	1.8	11.5	4.9	3.7	2.5	2.5	2.5			
Nigeria	44	10	730	23	274	21	1.5	3.5	4.7	3.5	2.9	2.9	2.9			
Panama	19	7	355	45	44	7	2	9.5	4.5	2.8	3.4	3.4	3.4			
Papua New Guinea	56	8	295	22	72	4	2.8	8	—	—	—	—	—			
Peru	98	10	441	35	31	5	3.1	7.5	4.6	2.9	2.2	2.2	2.2			
Philippines	50	11	380	25	33	8	5.6	10	5	3.7	2.5	2.5	2.5			
Thailand	33	8	390	26	2	2	2.6	8.5	5.3	4.3	4.1	4.1	4.1			
Togo	53	13	535	37	212	6	3	7.5	—	—	—	—	—			
Venezuela	116	13	445	41	34	8	4	5.5	3.8	2.1	3.3	3.3	3.3			
<b>World</b>	<b>50.8</b>	<b>9.9</b>	<b>388.3</b>	<b>31.2</b>	<b>81.4</b>	<b>6.2</b>	<b>3.2</b>	<b>8.8</b>	<b>4.7</b>	<b>3.9</b>	<b>3.4</b>	<b>3.4</b>	<b>3.4</b>			

Source: Canby and Radtitz (2005), adapted from World Development Report (2005).

### Appendix 3. Suggestions for addressing regulatory and constraints for participatory forest management in Orissa

Issue	Proposed change
Where to take up JFM?	Criteria for selection of areas where intensifying JFM would be most cost effective and rewarding needed.
Process versus target driven approach	FD to institutionally involve NGOs/CBOs in consultative process leading to VSS formation. Develop internal guidelines for VSS formation, facilitation and capacity building with key milestones. Develop a regular communication/feedback system with each VSS.
Legal standing of the VSS	Register VSS, under existing organizational regulations such as the Societies Registration Act, 1860.
Weak legal backing for forest protection <sup>21</sup>	3a. Issue new flexible rules for PFM (that encompass CFM and JFM), under the Orissa Forest Act under the village forest provisions 3b. Current MOUs to be replaced by Agreement Deed (duly vetted by Law Dept. of the state).
Structure of VSS	4a. President elected by general house with 60% quorum, half of which comprises women. 4b. Secretary elected by general house with 60% quorum, half of which comprises women.
VSS/EC	50% of the EC to be women, quorum at least 60%, representation to SC/ST, SHGs, user groups, Total membership odd numbers 11 or 13 or 15, except ward panches, all others elected by the General House (GH). GH meetings on same dates as Palli/Gram Sabha meetings, NGOs/CBOs to mobilize better attendance and monitor it.
Create space for adaptive silviculture that addresses needs of poor collectors and processors	Develop options that can be incorporated in microplans, e.g., NWFPs, medicinal plants.
Shared vision of the future of the forest Benefit sharing	Decision to harvest or not with the VSS. This needs incorporation in the Agreement Deed and PFM rules. 7a. 50% of the govt share should go to VSS account for reinvestment in the forest and other infrastructure. 7b. VSS to have option to sell directly, if their price is better than what the FDC can offer. 7c. Share salvage logging harvests. Undertake regular harvests where feasible and desired.
Role of self help/user groups	Self help/user groups, if any, elect 2 to 3 representatives directly to the VSS EC.
Size Record keeping	Flexibility in size to be clarified in new PFM rules and practiced. All records to be kept at the VSS and written by the secretary in Oriya. VSS be encouraged to pay an honorarium to the secretary for record keeping.

<sup>21</sup> VSS, formed under government orders issued by the Government of Orissa are currently fairly low in the legal totem pole (constitution, legislation, rules, government orders).

*Investing cash and kind: An exploratory case study of the investment climate in the Indian forest sector*

Protection of non-degraded forest	Allow non-degraded /dense forest in VSS especially in tribal-dominated areas.
Management of non-FD recorded forests	Include such areas in a flexible form of PFM, or declare as Village Forests (as in Uttaranchal, where Van Panchayats and FPCs co-exist).
Recording withdrawals	Pilot test idea of issuing passbooks to all users and record benefit sharing accordingly.
Information sharing	Maintain independent register of all VSS and send all PFM-relevant government organizations to them.
Bank account	Two accounts. One for government money that is managed jointly by the president, secretary and forester and another that is operated by the president and secretary for non-government money, e.g., VSS share
Powers of VSS	Basic powers of forest guard to apprehend poachers are devolved to VSS members.
Fines	Allow VSS to compound small infractions. Half the amount should go to the VSS account, the rest to the FD.

Adapted from Orissa Forest Sector Vision Process, undertaken in 2004-2005, with support of the Department for International Development, India.

## Appendix 4. Choice of instruments for securing environmental services

Instrument	Rationale and instances
Local ownership and incentives	Practical – reduce external costs of management and enforcement; Ethical – is the right thing to do; Effective – can improve outcomes and interest local communities in forest protection and management (e.g., community ownership through forest settlements and via options such as Kangra Forest Cooperatives [1940s], Van Panchayats [1930s], JFM [weak attempt starting in 1990s], community rights and CFR options, mostly unimplemented, in the FRA [2006]).
Policy	Reflects current and future priorities. Provides guidance and legitimacy for legislation and programmes.
Institutions	Create new institutions to solve a perceived problem: <ul style="list-style-type: none"> <li>■ Forest Department (FD) in the 1860s to manage forests;</li> <li>■ VF (Village Forests) in 1927: Once the FD takes over community-use areas as PFs, ‘settles’ all rights, and declares them RFs, then it can consider handing them back to communities. Not surprisingly, not implemented;</li> <li>■ FDCs (Forest Development Corporations) in the 1970s: Private logging contractors cannot be trusted and attract external investment in forestry;</li> <li>■ FPCs (Forest Protection Committees) under JFM: Need to provide some incentives to communities to regenerate forests;</li> <li>■ FDAs (Forest Development Agencies): ‘Company union’ that keeps FPCs in line by doling out public investments.</li> </ul>
Zoning	Specify allowable and non-allowable uses, especially to avoid forest land conversion.
Fiscal measures	Create positive incentives through both private and public avenues.
PES & incentive-based mechanisms (IBMs)	Create a relation and resource flow between environmental service providers and beneficiaries. IBMs can be in cash or kind, including tenure. For inputs or outputs, can be local deals, an option for optimizing public investments and targeted fiscal measures. Identifying effective practices and local distribution options is key. Example – proposed REDD mechanisms.
Public investment	Aimed at poverty alleviation, biomass production and environmental service provision: <ul style="list-style-type: none"> <li>■ Watershed programmes;</li> <li>■ National Afforestation Program &amp; Green India – planting programme;</li> <li>■ Tree removal programme – <i>Prosopis juliflora</i> in Delhi;</li> <li>■ National Rural Employment Guarantee Act – open ended, including plantation.</li> </ul>

Regulation	Basis for putting in place most instruments – e.g., ownership, zoning, etc. Generally refers to command and control measures. But can also provide the context for other instruments: Forest Conservation Act (1980) – regulate forest land conversion. Wildlife Protection Act – basis for species and habitat protection. Change property rights – forest land vesting acts, timber felling rules, NWFP nationalization rules, Forest Rights Act. Water quality rules can lead to development of payments for environmental services/IBMs.
Best management practices (BMPs)	Operational guidance to enhance environmental service provision, e.g., logging BMPs that aim to reduce impact of logging, JFM BMPs that optimize local environmental service and biomass benefit.
Appropriate silviculture & management plans	Forestry practices that address environmental services, especially water and biomass needs of local and non-local stakeholders. Need for serious investment in this area.
Social audits and certification	Oversight tools that compare practice with standards can provide a small impetus for change, e.g., FSC forest management certification requires clear rights and tenure.
Environmental movements	Organize, advocate and agitate, e.g., Campaign for Survival and Dignity, Chipko.

Adapted from Agarwal and Lele (2008).

# Private sector financing in Indonesian forestry – removing constraints to investments

Deddy Eriantono<sup>1</sup>

## Introduction

### *Research scope and background*

From 1980 to 2005, the Indonesian wood industry significantly contributed to foreign exchange earnings, the gross domestic product, government revenue and employment (In-house Experts Working Group 2007). Wood product exports during this period fluctuated and reached a peak of US\$6.24 billion in 1997 (or 17.8 percent of the export value of industrial products or 11.7 percent of total exports). Plywood, pulp and paper were the main products that contributed to exports, particularly when plywood achieved its top export price. However, the export value of forest products subsequently fell to US\$5.3 billion in 2001 as a result of the economic crisis (Simangunsong 2004a) and slightly increased in 2005 to US\$5.41 billion (9.7 percent of the export value for industry goods or 6.3 percent of the total value of exports) (In-house Experts Working Group 2007). Prior to the vast wildfires of 2006 there were approximately 1 600 export-oriented companies (sawnwood and wood-working) registered in the Forest Industry Revitalization Board (BRIK). However, the number of companies with active operations had declined to 602 in later 2006; of the 130 plywood and panelwood companies only 68 were active on 6 October 2006 (In-house Experts Working Group 2007). Simangunsong (2004a) noted that the Indonesian forestry sector experienced both rapid growth and structural change between 1980 and 2002, more due to government policies than market forces. Those policies included: The log export ban, first announced in May 1980 and imposed nationwide in 1985; the sawnwood export tax imposed in November 1989; the prohibitive log export tax, enacted in June 1992 as a substitute for the ban on log exports; and reducing the log export tax to 10 percent before December 2000 and then to zero in 2003.

Concerning raw material supply, at present, roundwood produced in Indonesia originates from a number of sources, including natural forests, industrial forest plantations, other legal permit areas and conversion areas. Indonesia's forest area according to FAO's Forest Resource Assessment in 2005 was 88 495 000 hectares (FAO 2006). However, the Indonesian Supreme Audit (2008) reported that in the last 50 years Indonesia has lost 40 percent of its forest area. Factors that contribute to deforestation and degradation in Indonesia are: 1) forests being encroached by agricultural and plantation activities; 2) forest fires; 3) illegal logging; and 4) tree felling without optimal rehabilitation.

Some crucial questions regarding forestry in Indonesia include: What constitutes an enabling environment? What makes forestry attractive to investors? What parameters do investors assess to determine whether to invest in forestry? This study attempts to answer

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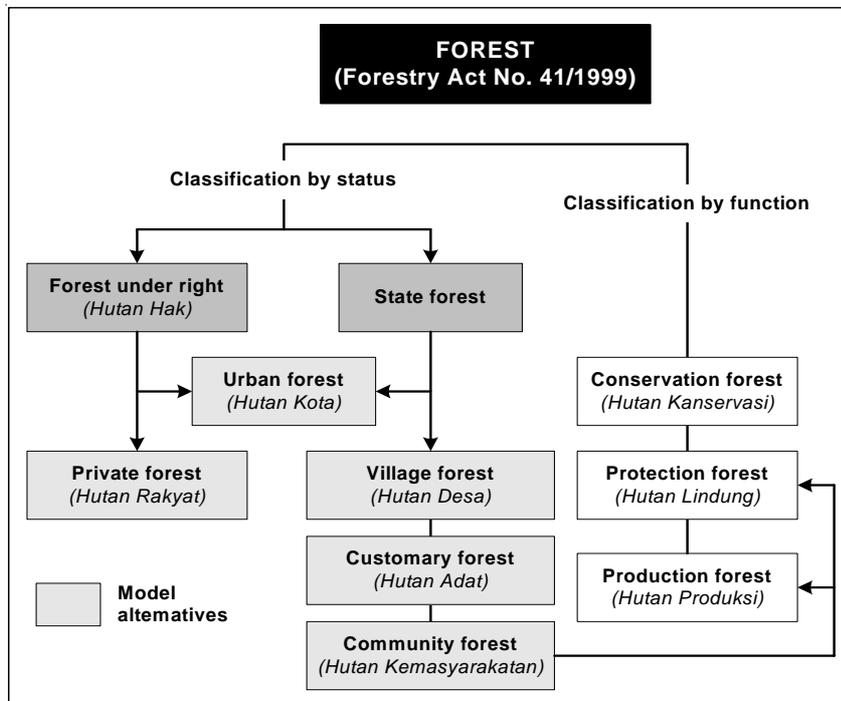
<sup>1</sup> Senior Consultant for the Institute for Environmental and Natural Resources Economic (ELSDA) in 2008.

such questions and identify the main direct constraints perceived by private investors and measures for their removal through reforms.

The main objective of the study is to elaborate on recommendations for creating space for private sector financing in forestry through removing constraints to investments. The study is divided into five sections. The first section addresses the research scope and background and the current condition of the Indonesian forest industry structure. The second section provides an overview of patterns of resource ownership in the forest and forest product processing sectors as well as key players in forest management and wood processing. The third section maps out investment attractiveness and constraints to investment, which are related, among other factors, to policy development, economic climate, the judicial system, infrastructure and regulations for land tenure. Section four maps out analysis of legislative and non-legislative constraints that inhibit procedures and requirements for starting a business, dealing with licences, employing workers, obtaining credit and paying taxes as well as the vision and leadership of the forest industry and forestry agencies. Section five suggests viable means for removing or reducing constraints.

**The forestry sector’s contribution to the national economy**

The Forestry Act 41/1999 models forest management according to status and function. Forest status has five categories: Private forest (under personal/private rights); urban forest (private or state forest); village forest (state-owned); traditional forest (state-owned); and community forest (state-owned) (Simorangkir and Sardjono 2006). Protection and production forests comprise the function aspect (Figure 1).



**Figure 1. The forest management model**

Source: Simorangkir and Sardjono (2006).

In 2007 the state held 124.1 million hectares of forest land (not all currently forested). This included 23.6 million hectares of conservation forest; 31.9 million hectares of protected forest; 36.2 million hectares of production forest; 21.7 million hectares of limited production forest; and 14.05 million hectares of converted forest (BPK 2008). Even though the forestry sector kept increasing its contribution to the national economy during 1997 to 2002, its contribution relative to other sectors decreased (Simangunsong *et al.* 2004). Its peak contribution was 3.9 percent in 1997 declining to 2.3 percent in 2002. Economic indicators for the forest sector's performance between 1980 and 2002 are given in Table 1.

### **Indonesian forestry industry structure**

Setiono and Husein (2005) noted that without financing by banks, forest-based projects that require large capital would not be commercially feasible. The project not only buys equipment and machinery, but also pays the costs of harvesting the timber, processing it and transporting the finished products to the markets. Banks also serve as important players in the trade of products produced by forest-based industries. They provide (among other things) credit for trade, letters of credit to guarantee payment, facilities for discounted trade credit and other short-term financing instruments. Before the financial crisis of 1997, Indonesian local banks provided more than US\$4 billion in loans to Indonesian timber industries. The timber industries also received more than US\$7 billion in short-term loans and long-term financing from international financial institutions. These institutions have also been responsible for US\$12 billion distributed to pulp and paper industries since the 1990s. All of the top ten local banks in Indonesia finance the timber industries. International institutions such as Credit Suisse First Boston, ING Bank N.V. and Credit Lyonnais of Singapore have also financed timber extraction in Indonesia. By 1999 four Dutch banks (ABN-AMRO, ING, Rabobank and MeesPierson) had financed nine private companies holding 740 000 hectares of oil-palm plantations (Wakker 2000; Setiono and Husein 2005).

However, BPK (2008) showed that the number of forest concessions has declined by more than half in the last 15 years. At the beginning of the 1990s, there were nearly 600 forest concessions operating on 61.3 million hectares of natural forest land. In 2007, there were only 323 concessions operating on 28.2 million hectares of land.

In-house Experts Working Group (2007) noted that since 1980, the wood-processing sector has grown rapidly and its structure has evolved dynamically. In the early 1980s, almost all forestry activities were in logging and sawmills. By the early 1980s, the sawnwood processing subsector had started to grow, and relied mainly on natural forest timber. By the mid-1990s, the plywood subsector had replaced sawnwood as the dominant sector. Various taxes and trade restrictions have been used to protect the plywood industrial sector. These policies included a log export ban, a sawnwood export tax and a prohibitive log export tax. After the financial crisis and the International Monetary Fund (IMF) programme beginning in 1998, the government reduced the log export tax to 10 percent before December 2000 and then to zero in 2003. Since then, new export restrictions on logs and roughly sawntimber have been introduced again.

The pulp subsector grew rapidly in the mid-1990s. In 2005, the value of pulp and paper exports exceeded the value of plywood exports for the first time, following a continuing trend of growth and evolution of the structure of the industry. In the late 1990s, pulp mill

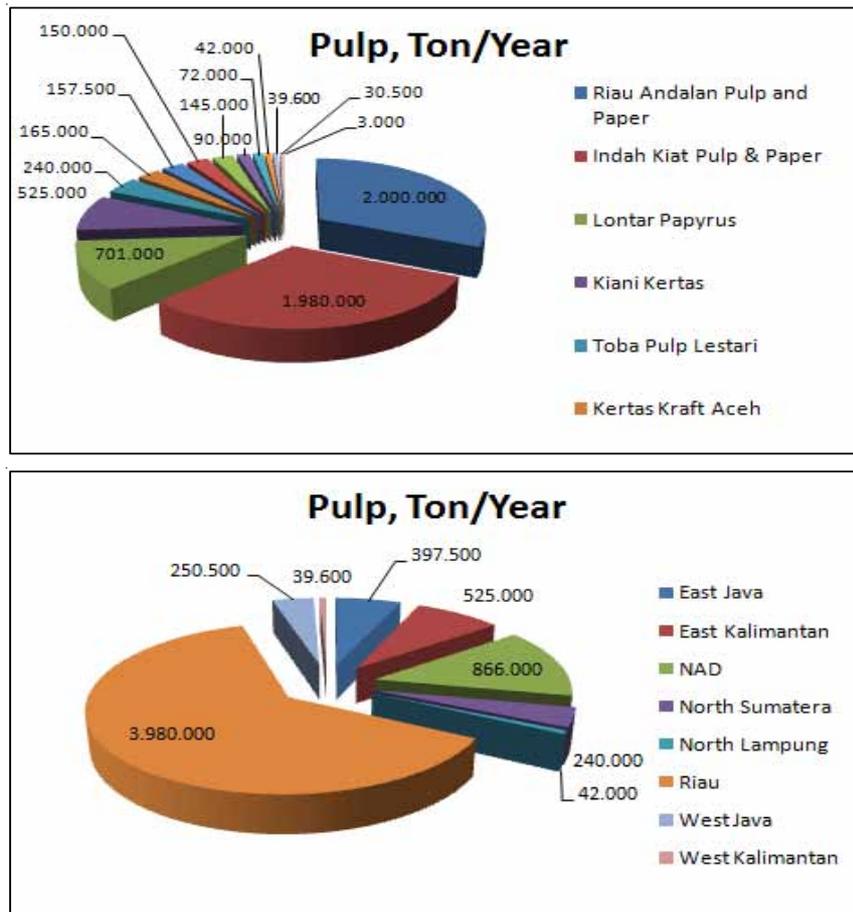
Table 1. Economic indicators for forest sector performance, 1980-2002

DATA TYPE	ITEMS	UNIT	1980	1985	1989	1990	1997	1998	1999	2000	2001	2002
INSTALLED CAPACITY	Sawmill	Million m <sup>3</sup>	5.6	8.8	10.6	10.8	11.6	11.0	11.0	11.0	11.0	11.0
	Plymill	Million m <sup>3</sup>	2.0	6.3	10.1	10.2	9.8	9.4	9.4	9.4	9.4	9.4
	Pulpmill	Million tonnes	0.0	0.0	0.7	1.0	4.3	4.3	4.5	5.2	5.6	6.1
	Papermill	Million tonnes	0.0	0.9	1.5	1.7	7.2	7.5	9.1	9.1	9.9	10.1
PRODUCTION	Sawnwood	Million m <sup>3</sup>	4.8	7.1	10.4	9.1	7.2	7.1	6.6	6.5	6.8	6.5
	Plywood	Million m <sup>3</sup>	1.0	4.6	8.8	8.3	9.6	7.8	7.5	8.2	7.3	7.6
	Pulp	Million tonnes			0.5	0.7	3.1	3.4	3.7	4.1	4.7	5.0
	Paper	Million tonnes		0.5	1.2	1.4	4.8	5.5	6.7	6.8	7.0	7.2
CAPACITY UTILIZATION RATE	Sawmill	%	86%	81%	97%	85%	63%	64%	60%	59%	61%	59%
	Plymill	%	51%	73%	87%	81%	98%	83%	80%	77%	77%	80%
	Pulpmill	%			65%	70%	72%	79%	81%	78%	84%	82%
	Papermill	%		59%	78%	84%	67%	73%	74%	75%	70%	72%
LOG CONSUMPTION	Timber	Million m <sup>3</sup>	11.7	23.5	38.3	34.8	33.7	29.9	28.3	29.4	28.1	28.1
	Pulpwood	Million m <sup>3</sup>	0.0	0.0	2.1	3.1	13.8	15.4	16.6	18.4	21.0	22.4
	Total	Million m <sup>3</sup>	11.7	23.5	40.4	37.9	47.4	45.3	44.9	47.8	49.1	50.5
OFFICIAL LOGS PRODUCTION	Timber	Million m <sup>3</sup>	25.2	14.6	24.4	25.3	29.1	18.5	20.4	10.0	5.6	4.8
	Pulpwood	Million m <sup>3</sup>					0.4	0.5	0.2	3.8	4.5	3.4
	Total	Million m <sup>3</sup>	25.2	14.6	24.4	25.3	29.5	19.0	20.6	13.8	10.1	8.1
EXPORT QUANTITY	Sawnwood	Million tonnes	0.0	1.5	1.8	0.1	0.3	0.2	0.4	0.5	0.5	0.7
	Plywood	Million tonnes	0.0	2.2	4.6	5.0	4.6	4.8	4.1	3.8	3.9	3.6
	Other processed wood	Million tonnes	0.0	0.4	1.4	1.4	1.8	2.6	1.8	1.8	1.8	2.0
	Paper	Million tonnes	0.0	0.0	0.2	0.2	1.8	2.7	3.6	3.4	3.2	3.4
EXPORT VALUE	Sawnwood	Million US\$	0.0	307.2	667.8	110.1	380.0	163.9	295.7	331.2	301.3	371.2
	Plywood	Million US\$	0.0	824.7	2 350.9	2 725.5	3 410.6	2 077.9	2 256.3	1 988.8	1 838.0	1 748.4
	Other processed wood	Million US\$	0.0	52.9	42.1	491.1	1 512.0	2 181.6	1 244.2	1 240.8	1 125.9	1 131.9
	Paper	Million US\$	0.0	20.9	167.5	155.8	938.5	1 425.5	1 965.6	2 291.2	2 034.3	2 097.4
EXPORT VALUE SHARE OF	Total	Million US\$	0.0	1 205.7	3 228.3	3 482.5	6 241.1	5 848.9	5 761.8	5 852.0	5 299.5	5 348.9
	Industrial sector	%		28.4%	29.3%	29.3%	17.8%	16.9%	17.3%	13.9%	14.1%	13.8%
Total export		%		6.5%	14.6%	13.6%	11.7%	12.2%	11.8%	9.4%	9.4%	9.4%

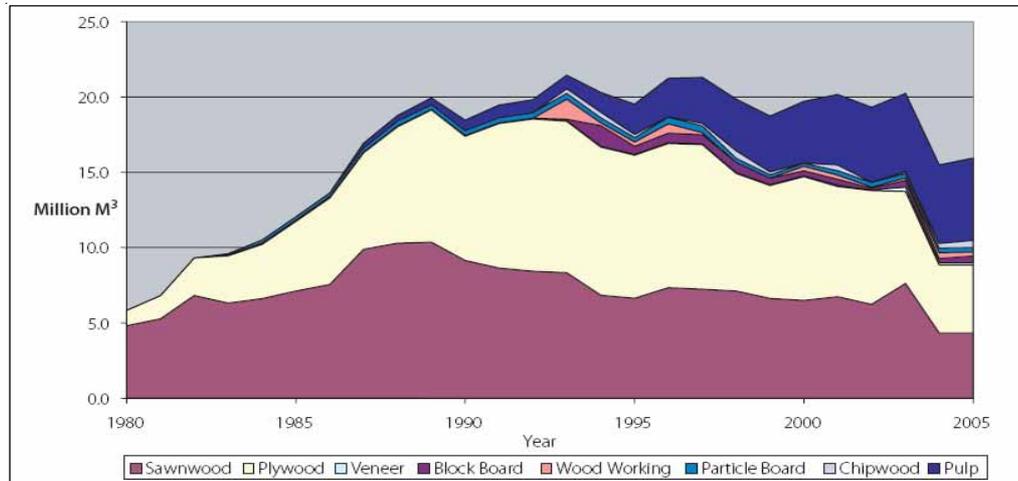
DATA TYPE	ITEMS	UNIT	1980	1985	1989	1990	1997	1998	1999	2000	2001	2002
ADDED VALUE	Forestry	Trillion Rp.					9.8	11.7	13.8	14.9	15.6	16.8
	Processed wood	Trillion Rp.					8.7	10.5	9.4	10.0	10.6	11.2
	Paper	Trillion Rp.					6.0	8.5	9.3	7.1	7.3	8.2
	Total	Trillion Rp.					24.6	30.8	32.5	32.1	33.6	36.2
ADDED VALUE SHARE OF	Industrial sector	%					9.7%	9.3%	7.4%	6.6%	5.9%	5.6%
	Gross Domestic Product	%					3.9%	3.2%	3.0%	2.5%	2.3%	2.3%
REVENUE	IHPH/IHHT	Million US\$	13	1	2	3	2	2	8	4	4	0
	DJR/DR	Million US\$	11	40	160	173	454	190	193	222	220	213
	IHH/PSDH	Million US\$	167	51	102	126	226	69	103	100	87	90
	Total	Million US\$	191	92	264	301	682	261	303	326	311	303
REVENUE SHARE OF	Non-Oil and Gas revenue	%	3.7%	1.3%	2.6%	2.3%	2.4%	2.2%	1.6%	1.3%	1.3%	1.0%
	Total Government Revenue	%	1.0%	0.4%	1.2%	1.1%	1.6%	1.2%	1.0%	0.9%	1.1%	0.8%
EMPLOYMENT	Pulpwood plantation	1 000 Employees			3	6	36	40	43	48	49	53
	Logging Industry	1 000 Employees	77	68	104	96	114	109	99	84	66	82
	Sawnwood Industry	1 000 Employees	23	34	50	44	35	34	32	31	32	31
	Plywood Industry	1 000 Employees	13	60	113	106	124	101	97	106	94	97
	Pulp and Paper Industry	1 000 Employees		18	30	33	80	80	96	97	98	99
	Total	1 000 Employees	113	179	300	285	389	364	367	365	340	362

Source: Simangunsong (2004b).

processing capacity expanded more rapidly than the development of pulpwood plantations. This is one element of the current excessive demand for timber that is not sourced sustainably from plantations. Figure 2 shows that Indonesia's pulp mills in 2007 were concentrated in Sumatra, with the largest being located in Riau. Just six mills account for over 95 percent of pulp production, which represents about half of Indonesia's timber consumption. Timber industry growth between 1980 and 2005 is depicted in Figures 3 and 4.

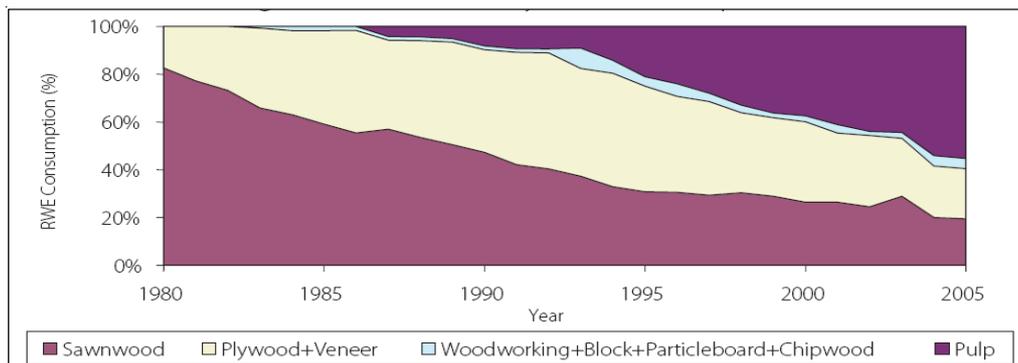


**Figure 2. Indonesian pulp industries, 2007**  
 Source: Indonesian Pulp and Paper Association (2007).



**Figure 3. Indonesian wood products production, 1980-2005**

Source: In-house Experts Working Group (2007).



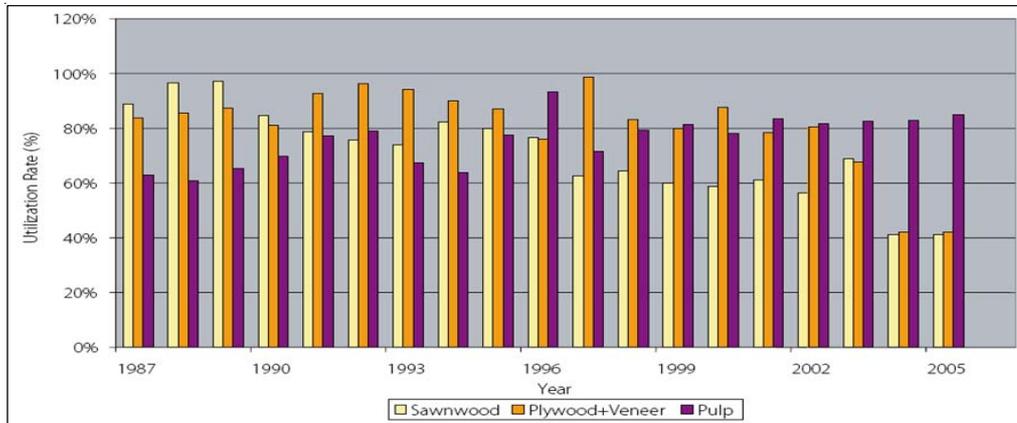
Note: RWE = roundwood equivalent.

**Figure 4. Timber industry wood consumption, 1980-2005**

Source: In-house Experts Working Group (2007).

Log consumption by the timber industry rose sharply from 11.7 million m<sup>3</sup> in 1980 to 24.1 million m<sup>3</sup> in 1985, peaking at 50.5 million m<sup>3</sup> in 2002 (Simangunsong 2004). It then fell drastically to 44.5 million m<sup>3</sup> in 2005 (In-house Experts Working Group 2007).

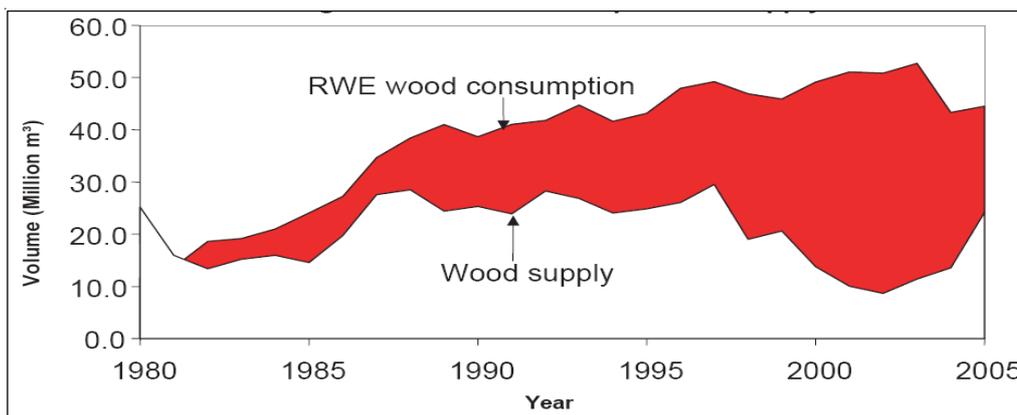
The In-house Experts Working Group (2007) also found that use of sawntimber industry installations increased from 86 percent in 1980 to 97 percent in 1989, falling sharply to 41 percent in 2005. Use of plywood industry installations increased to 99 percent in 1997, falling to 42 percent in 2005. These trends showed an increasing deficit of logs for the sawntimber and plywood industries since 1997, indicating that assets invested in those industries were not utilized properly. Since 1989, use of pulp industry installations increased from 65 percent in 1989 to 85 percent in 2005. Figure 5 shows levels of wood industry installation use between 1987 and 2005 (In-house Experts Working Group 2007).



**Figure 5. Rates of installed capacity in the forest industry, 1987-2005**

Source: In-house Experts Working Group (2007).

In 2005, total roundwood production was about 24 million m<sup>3</sup>, total wood products production was about 16 million m<sup>3</sup> (Figure 3); however, total wood consumption was about 45 m<sup>3</sup> (In-house Experts Working Group, 2007). If the gap between wood consumption by processed wood industries and valid wood production is accounted for by illegal roundwood, then wood-processing industries have consumed a significant volume of illegal wood as shown in Figure 6 (In-house Experts Working Group 2007). In 2002, the volume of roundwood consumed by wood industries was estimated to be 42.2 million m<sup>3</sup> but decreased to 20.3 million m<sup>3</sup> in 2005 (In-house Experts Working Group, 2007). This means that the illegal logging causes significant losses in financial revenue for the government and has a large effect on deforestation and degradations.



Note: RWE = roundwood equivalent.

**Figure 6. Wood consumption vs wood supply, 1980-2005**

Source: In-house Experts Working Group (2007).

## Overview of resource ownership patterns and key players

### *Forest and forest product processing sector ownership*

A study by Brown (1999), argued that although, technically, it is the job of the Forestry Department to grant concessions, it did not do so without first consulting the president. Hence, timber concessions in Indonesia were effectively awarded by the president, in some cases to the president's family, using the Forestry Department to provide legitimacy. Brown further stated that in terms of who controls the timber industry, very little had changed during the 1990s (Brown 1999). During the last decade the situation has remained similar, as the industry is still dominated by the same five private groups: Barito Pacific, Djajanti, Kayu Lapis Indonesia, Alas Kusuma and Bob Hasan. In 1995, these five groups held 30 percent of the country's timber resources between them. By 2006 as reported by Indonesian Forest Concessionaires Association (2008), they still held 24 percent of the country's timber resources, as follows:

Kayu Lapis Indonesia	1 917 050	hectares (7.44 percent)
Djajanti (Budhi Nusa)	1 263 400	hectares (4.90 percent)
Barito Pacific	1 159 437	hectares (4.50 percent)
Bob Hasan	965 410	hectares (3.75 percent)
Alas Kusuma	<u>904 220</u>	<u>hectares (3.51 percent)</u>
<b>Total</b>	<b>6 209 517</b>	<b>hectares (24.10 percent)</b>

### *Key players in forest management and wood processing*

Table 4 lists timber concessions controlled by the Djajanti and Alas Kusuma groups with former first family board members or shareholders. The table also shows the companies's concession holdings as of 2006. Under Indonesia's mid-sized groups, Brown (1999) noted that the groups control vast concession areas of between 0.5 to 1.5 million hectares each.

**Table 4. Timber concessions licensed to Djajanti and Alas Kusuma groups**

<b>Djajanti timber companies</b>	<b>Provinces</b>	<b>Hectares</b>
Budhi Nusa/Djajanti-Agoda Rimba Irian	West Papua	155 000
Budhi Nusa/Djajanti-Antika Optima Inti Unit IV	Papua	110 700
Budhi Nusa/Djajanti-Atlas Tirta Kencanan	Papua	87 500
Budhi Nusa/Djajanti-Budhi Nyata Irja	West Papua	300 000
Budhi Nusa/Djajanti-Karya Delta Permai	Central Kalimantan	79 400
Budhi Nusa/Djajanti-Nusantra Plywood IX	Central Kalimantan	140 000
Budhi Nusa/Djajanti-Sagindo Sari Lestari	West Papua	98 000
Budhi Nusa/Djajanti-Teluk Bintuni Mina Agro Karya	West Papua	239 000
Budhi Nusa/Djajanti-Wana Irian Perkasa	West Papua	53 800
<b>Total</b>		<b>1 263 400</b>

<b>Alas Kusuma timber companies</b>	<b>Provinces</b>	<b>Hectares</b>
Alas Kusuma-Belayan River Timber	East Kalimantan	97 500
Alas Kusuma-Mugitriman Interc. Kaltim	East Kalimantan	200 000
Alas Kusuma-Narkata Rimba	East Kalimantan	68 000
Alas Kusuma-Sari Bumi Kusuma Kalbar	West Kalimantan	66 000
Alas Kusuma-Sari Bumi Kusuma Kalteng	Central Kalimantan	208 300
Alas Kusuma-Suka Jaya Makmur	West Kalimantan	171 300
Alas Kusuma-The Best One Unitimber	Riau	50 620
Alas Kusuma-Wanakayu Batuputih	West Kalimantan	42 500
<b>Total</b>		<b>904 220</b>

Source: Indonesian Forest Concessionaires Association (2008)

Table 5 lists some other private timber concessionaires and ownership/representation characteristics.

**Table 5. Indonesia's private medium-sized timber concession holders: names of owners and details**

Group name	Concession area in 2006(ha)	Names of owners	Details
Korindo	882 050	In Yong Sun	Suharto representation. Three concessions are 30 percent owned by Nusamba.
Kodeco	776 880	Antonius Moedjono Moerdani	Independent
Sumalindo Lestari Jaya	538 581	Winarto Oetomo	Suharto representation ( <i>Suara Pembaruan</i> 1999). Until recently half-owned by Barito Pacific. Now, one-third owned by Astra, which was run by Bob Hasan for a time
Kalamur (Salim group)		Sudono Salim (Liem Sioe Liong), Anthony Salim	Suharto representation; 20 to 25 percent owned by the Suharto family's Hanurata group.
Daya Sakti Surya Dumai	582 100	Widya Rachmat Martias (Pun Kian Hwa); Irawaty (Un Tie)	Suharto representation. Independent. Listed on Jakarta Stock Exchange.
Hanurata	757 670	Main shareholders are Suharto family foundations Harapan Kita and Trikora	Suharto-owned
Mutiara ('Wapoga')	783 050	Piet Yap (food commodities executive, Salim group)	Suharto representation.

Source: Brown (1999); Indonesian Forest Concessionaires Association (2008).

An analysis by USAID/NRM (World Bank 2007a) of precrisis data showed that Indonesia's industrial forestry sector is quite highly concentrated. The Central Statistics Board's (BPS) survey of 600 to 700 large- and medium-sized plymills and sawmills, found that only 8 percent of the largest producers (about 50 mills producing over 100 000 m<sup>3</sup> per year) use over 60 percent of the timber consumed by ply- and sawmills together (and 45 percent of labour). In contrast, the 75 percent of small firms (producing <10 000 m<sup>3</sup>/year) – about 450 mills – use only 8 percent of the timber and 12 percent of the labour.

### *Sawntimber and wood-working industries*

From focus group discussion,<sup>2</sup> Bapak Zulfikar noted that investment needed for sawntimber and wood-working industries in Indonesia was around US\$100 000 to US\$200 000. Almost 90 percent of the membership of the Indonesian Sawn Timber and Woodworking Industry (small

<sup>2</sup> Focus group discussion was held by the ELSDA Institute on 24 September 2008 and was attended by Bapak M. Mansyur (Chairman of Indonesian Pulp & Paper Association), Bapak Zulfikar Adil (Executive Director of the Forest Industry Revitalization Body), Bapak Herry and Bapak Tauchid (Officials of the Ministry of Forestry Office).

and medium business enterprises) did not hold forest concession rights or licences (HPH) for exploitation of natural production forest. In-house Experts Working Group (2007) recorded only 602 registered enterprises remaining, although there had been 1 600 earlier in the decade.

### *Plywood and other wood panel industries*

The Indonesian Wood Panel Association recorded 130 enterprises registered as of 6 October 2006; however, only 68 enterprises were active and producing 6.1 million m<sup>3</sup>/year; only 19 units had constant production (1.54 million m<sup>3</sup>/year).

### *Pulp and paper industries*

From the focus group discussion, Bapak Mansyur noted that investment required for pulp and paper industries with capacity of 1 million tonnes per year was around US\$1.2 to US\$1.5 billion. In-house Experts Working Group (2007) noted from Indonesian Association of Pulp and Paper Industry data (2007) that there were ten pulp and paper integrated manufacturers and three unintegrated manufacturers with total capacity of 6.45 million air-dried tones as of 2005. Eighty-six percent of the capacity is installed in Sumatra and 53 percent of the manufacturers are private company foreign investments (Figure 2).

Hernawan (2002) indicated that the Forestry Directorate General realized that because of this large investment for forestry exploitation, most forest products would be removed by large corporations. In order to prevent small and medium enterprises from collapse, the Directorate General emphasized a forest concession policy in each province to award 70-80 percent of the forest area in each province to large enterprises through concession rights and 20-30 percent to small enterprises through felling rights. However, during the process small corporations in localized areas could not survive and the large corporations started to dominate forest concession areas. The Indonesian Forest Concessionaires Association (APHI) reported that until 1998/1999 it had recorded 436 HPH occupying 53 550 million hectares of natural forest area, but nine of them belonged to large companies with more than 1 million hectares. There are also issues of transparency with HPH provision (no tender). As a result, new forestry businesses have emerged that cause social problems

After 1998, there was a decline in central authority. Democratization and decentralization became extensive. Political and financial authorities were transferred to the district-level governments through legislation in 1999 with implementation in 2000. Concerning forest management there have been efforts by the central government to allow social forestry or community forestry in limited areas. These offer some positive potential and incentives for improvement through local demand for improved governance and service delivery (including environmental services). Decentralization also creates opportunities and demand for resolution of land access and rights issues – both from existing rights holders (private concessionaires) and aspirants for more secure access (communities).

On the other hand decentralization creates competing claims and unclear governmental responsibilities over forest access and land-use rights. However, there is an opportunity to build more effective and transparent institutions to support these kinds of negotiations in a process of forest land rationalization. Moreover, the decentralization process also provided opportunities and direct benefits to rural households, smallholders and forest dwellers.

Some communities have greater access to land and resources. Others are in a better position to negotiate better benefits from companies seeking harvesting permits (Hernawan 2002).

## **Investment attractiveness and investment constraints**

### ***Policy contradictions and inconsistency***

Local regulations are a key tool in providing incentives or disincentives for economic development in a particular region. Some districts have developed strategic, coherent economic governance frameworks, while others have drafted regulations that are unclear and/or highly distortive for business development. KPPOD (2008) reviewed 932 local regulations from the 243 districts in the survey sample. The analysed regulations were restricted to economic matters: those relating to licensing; those relating to the transportation of goods and services; and those relating to labour issues. KPPOD assessed every regulation according to three general metrics: legality; substance; and principle. The survey showed that overall, 85 percent of local regulations have problems according to at least one of the three general metrics. The most problematic metric related to the substance of the regulation, with 78 percent of regulations suffering from at least one of six potential substance problems.<sup>3</sup> Moreover, 35 percent of all regulations had inappropriate, old or incomplete legal references, while 10 percent of regulations had problems with their underlying principles (KPPOD 2008).

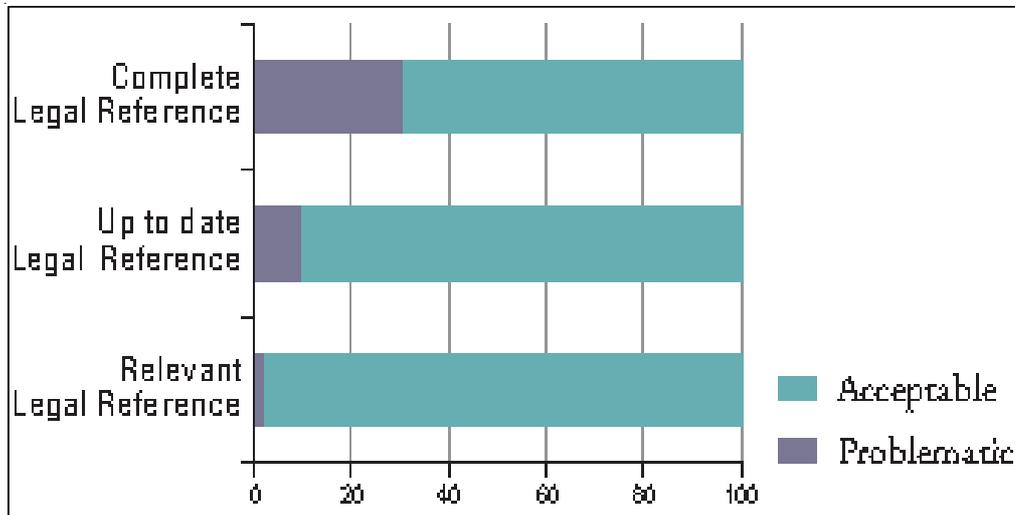
### ***Legality***

Approximately 10 percent of *Perda*<sup>4</sup> are not using up-to date legal references or are using irrelevant legal references (Figure 7). The *Perda* that most often violate the legal relevance criterion are those in the trade sector, including those dealing with Trading Business Licences (SIUP), Company Registration Certificates (TDP), permits to load and unload trade goods and warehouse registration certificates, among others. The *Perda* in the industry sector include those relating to Industrial Business Permits (IUI), Industry Registration Certificates (TDI) and construction service permits. The *Perda* in the agriculture sector that do not have relevant legal references are often those relating to livestock. In addition, some *Perda* relating to building permits, nuisance permits and business location permits also do not have relevant legal references. Figure 7 indicates legal problems with *Perda*.

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<sup>3</sup> Substance: Disconnect between aims and content; clarity of objects; clarity of subjects; clarity of rights and obligations of fee payers and the local government; clarity of time standards, costs, and procedures or rate structure and standards; conformity between the philosophy and the principles of taxation.

<sup>4</sup> *Perda* (*Peraturan Daerah*) or local regulations are formal legal instruments to guide the administration and implementation of aspects of public policy.



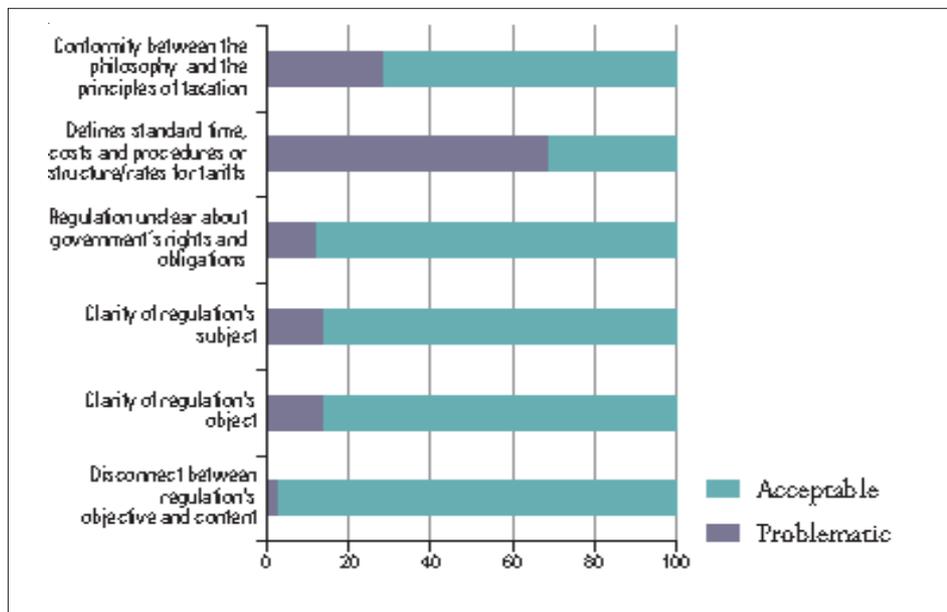
**Figure 7. Legal problems with *Perda***

Source: KPPOD (2008)

**Substance**

The most common problem that occurs in the substance category is that local regulations do not stipulate standard times, costs and procedures or clarify the rate structure and fees.

Figure 8 shows that two-thirds of the *Perda* examined suffered from this problem.

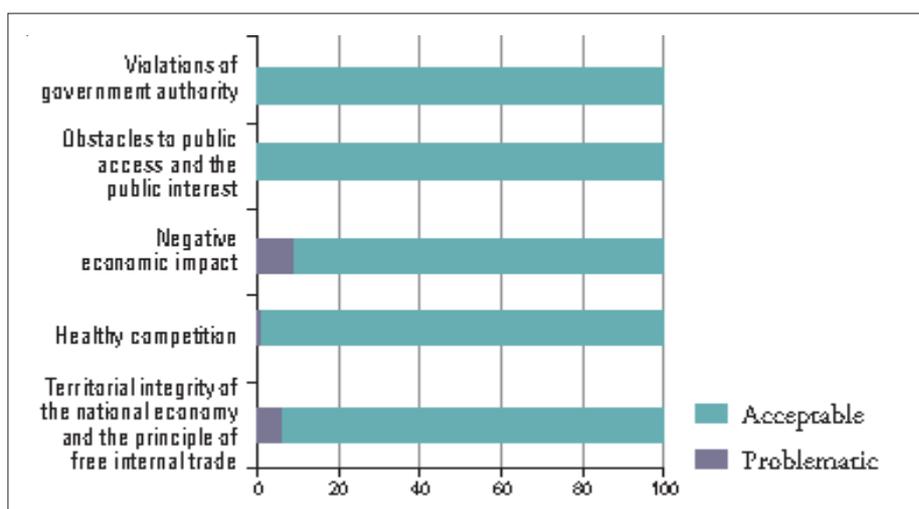


**Figure 8. Problems of substance with *Perda***

Source: KPPOD (2008).

### Principle

According to KPPOD (2008), 9 percent of the *Perdas* examined had negative impacts upon the local economy (Figure 9). This problem was often found in the food crop, fisheries and plantation subsectors of agriculture. Other negative impacts can occur when regions collect user fees for nuisance and building permits from entrepreneurs located within industrial zones.



**Figure 9. Problems of principle with *Perda***

Source: KPPOD (2008).

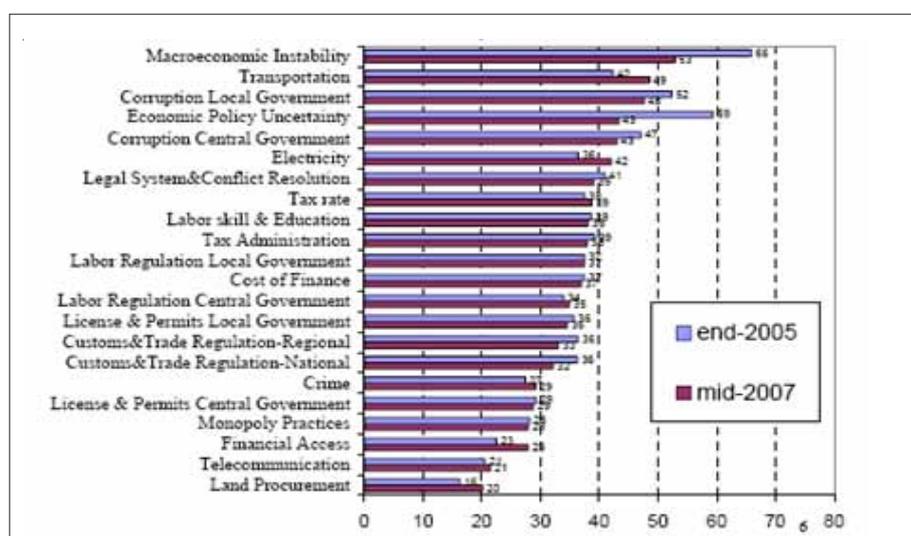
**Link to constraints to investment in the forestry sector:** Pulp and paper industries are characterized by high value long-term investment and barriers to investment are very high. Therefore, pulp and paper investors, particularly foreign investors, are very concerned with government (central and local) policies. Policy contradiction and inconsistency will impact the industry significantly. Poor policies will create social conflicts, bad image relating to the utilization of raw materials from natural forests and an uncondusive investment climate that will lead to unstable raw material supply.

Plywood and wood panel industries are characterized by medium value investment and low cost production. Government policy contradiction and inconsistency will impact the industry through unofficial charges that increase the cost of production. High production costs will make it difficult for the industry to compete in the market.

The sawntimber and wood-working industries are characterized by small investment compared to the plywood industry. However, policy contradiction and inconsistency, among others, have created high unofficial charges and prevalence of illegal sawnwood companies that lead to an unsound competitive market.

### **Economic climate – some improvement**

The government is striving to improve the investment climate as part of its plan to enhance growth, create jobs and reduce poverty. Some actions include drafting a new investment law, reforms in taxation and customs, reforms in licensing procedures and a wide-ranging public debate about potential reforms. The World Bank (2008) observed that although Indonesia has continuing weakness in several key areas, its investment climate continues to improve. A survey of business perceptions conducted by the World Bank in 2005 and 2007 concerning Indonesia’s investment climate showed some improvement in recent years. Figure 10 shows that the biggest improvements have been in macroeconomic stability and economic policy certainty.



**Figure 10. Improvements in Indonesia’s investment climate, 2005 and 2007**

Source: World Bank (2008).

The tax and customs administrations have undertaken initiatives to improve the economic climate. Concerning tax administration, standard operating procedures for a complaint management system have been issued by the Director General of Tax, and a code of ethics for tax officials has been issued through a Minister of Finance decree supported by a Director General of Tax circular letter (SE-33/PJ/2007).

Concerning customs reform, the government is in the process of implementing paperless import clearance for priority lane companies at the main seaport - Jakarta’s Tanjung Priok. Imports by 100 large priority lane companies, who account for 15 percent of import declarations at Tanjung Priok, are subject only to postclearance audits; import duties are paid periodically for multiple shipments rather than for each individual shipment. This allows for fast port and customs clearance. Implementation of Indonesia’s National Single Window

(INSW) for trade has also progressed, with initiation of a pilot project<sup>5</sup> in Tanjung Priok in December 2007. Face-to-face contact between traders and officials is thereby reduced.

### **Exchange rate fluctuations**

Indonesian exchange rate risk remains a major concern for investors because of the volatility in the rupiah (Rp) since 1997. The rupiah has strengthened recently, but could be destabilized should capital that has flowed into short-term bonds quickly turn around and exit Indonesia. The rupiah's strength also depends on future actions by the Indonesian Government, as well as overall political or economic stability. As of June 2003, the rupiah was traded at around US\$1.00/Rp8 100, an increase of over 9 percent since January 2003. In July 2001, the rupiah was traded at US\$1.00/Rp11 440. Previously, the rupiah was very volatile ranging from US\$1.00/Rp2 500 prior to the 1997 Asian financial crisis to a low of US\$1.00/Rp17 000 in January 1998. Since April 2000, Indonesian residents must report all foreign exchange transactions above US\$10 000 or the equivalent. Bank Indonesia introduced regulations prohibiting banks in Indonesia from transferring rupiah to non-residents in January 2001 to control speculative trading of the rupiah. The regulations also limit the quantity of derivative transactions against the rupiah by onshore banks to US\$3 million.

**Link to investment decisions in the forestry sector:** The weak Indonesian exchange rate will impact positively on forest industry exports, particularly for sectors that do not use imported raw material and foreign exchange loans for machine investment. However, a country with a stable exchange rate will attract more foreign and domestic investors.

### **Weak judicial system**

Assegaf (2006) noted that one of the first major steps towards a strong Indonesian judicial system is to prepare blueprints for the reform of the Supreme Court and subordinate courts. This process started in 2001, setting out short-, mid- and long-term strategies for court reform. Four main blueprints were prepared: (1) Blueprint for Supreme Court Reform, which included strategies for the reform of the Supreme Court's organizational structure, human resource management, case management and financial management, as well as strategies for the promotion of transparency, accountability and independence in the Supreme Court; (2) Blueprint for Reform of the Human Resources System in the Subordinate Courts, including the overhaul of the recruitment, transfer and promotion systems, the remuneration system and the judicial evaluation system; (3) Blueprint for Reform of Judicial Education and Training; and (4) Blueprint for the Reform of the Case Management System, including planning, management and recording systems, as well as the budget control and accountability system. Besides the four key blueprints, a number of other blueprints were also prepared by the Supreme Court in collaboration with civil society organizations and professional groups, including blueprints for the Commercial Court, Anti-Corruption Court and the Human Rights Court. Although somewhat delayed, the Supreme Court established a Judicial Reform Committee in 2004.

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<sup>5</sup> The pilot project electronically links five different government agencies involved in import clearance; low risk importers can obtain a single clearance through the INSW rather than needing separate clearances from each agency. Medium and high risk importers will be brought into the INSW pilot in stages during 2008 and additional government agencies will be linked to the single window later in the year. Current plans are to link with five other regional economies in 2009 as part of an ASEAN Single Window.

During the implementation phase many constraints were encountered, including minimal support from some members of the judiciary and court officials. This lack of support was due to a number of factors, including absolute resistance, and the inability of the courts to properly manage change (with respect to leadership and determining priorities, among other issues).

**Link to investment decisions in the forestry sector:** A weak judicial system will impact negatively on the forestry industry, particularly for an industry that invests large amounts of money such as the pulp and paper industry. A country with a strong judicial system assures foreign and domestic investors due to its legal certainty, particularly when the industry faces bad press relating to the use of raw materials from natural forests, widespread illegal logging and social conflicts.

### ***Low on the corruption index***

Corruption has been a much publicized issue in Indonesia, manifesting itself at central government and decentralized levels. For example, the national daily *Suara Pembaruan* has repeatedly reported on mayors and regents who have had to face the Corruption Court (KPK). In June 2008, the Regent of Kendal was charged with embezzling over Rp28 billion in general allocation funds (KPPOD 2008). The Transparency International Corruption Perceptions Index (CPI) 2008 ranks Indonesia at 126 out of 180 countries with a CPI score of 2.6 (10 is highly clean and 0 is highly corrupt).

KPPOD (2008) stated that decentralization not only led to increased power and influence for local mayors and regents, but it also generated abuse of power and access to resources. A report by the World Bank (2007b) stated that to date, 967 local legislators (District or Provincial House of Representatives [DPRD]) and 61 heads of regions had been involved in corruption crimes. In 2006 alone, there were 46 corruption cases implicating 61 provincial governors or district heads. These legislators and heads of regions are currently involved in legal processes as suspects, defendants, or have been convicted of crimes. Mayors and regents often obtain their positions because of the support of political parties and wealthy or powerful individuals. Some heads of regions subsequently abuse their position to repay this support by meddling in public procurement processes and otherwise misdirecting public funds. Moreover, these practices are sometimes committed with the support or collusion of legislators.

Industrial forest crime is also high on the political agenda and encompasses a broad spectrum of violations such as harvesting, processing and transportation violations (World Bank 2007a).

### ***Harvesting crimes***

These crimes can occur in production, conversion, protection and conservation forests. In production forests, harvesting crimes may take several forms and be carried out by multiple actors. Concessionaires may violate rules and regulations stipulated in Indonesia's silvicultural guidelines by logging on excessively steep slopes, in the proximity of waterways, too soon after the first selective cut, or at too high volumes relative to the sustainability plan or outside the allowable cutting area. Illegal logging activities may also create roads in conservation areas or protected forests or use inappropriate operational maps that overlap with conservation areas or protection forests. Often, healthy natural forests are clear-felled,

which is a violation. In conservation and protection forests, all harvesting operations are illegal under the current national forest legislation. Nevertheless, multiple actors have turned to these forest areas to harvest valuable timber species, some of which are no longer found in large quantities in production forests.

### *Processing crimes*

These crimes are often carried out by Indonesia's sawmills, plywood and pulp mills and include: operating above licensed capacity; operating without an official processing licence from the Ministry of Forestry; sourcing illegal timber for processing; and failing to file a detailed report about timber supply to the ministry.

### *Transportation crimes*

These include facilitating illegal timber trade and issuance of official transportation documents (SKSHH/SKSKB) for shipments of illegal timber (these documents can create a false paper trail for illegal timber and make it difficult to distinguish legal from illegal timber) and smuggling of illegal timber and endangered species to international destinations. Illegal logging or timber theft in Indonesia has become more sophisticated and inclusive, now referred to increasingly as 'illegal logging and trade'.

**Link to investment decisions in the forestry sector:** Timber harvesting, processing and transportation crimes deter ethical investors, who are committed to sound business practices, from entering the industry. Moreover, corruption among forest concession holders creates an unstable raw material supply and negative public perceptions about the industry. Consequently, this makes investing in forestry a risky business and unattractive for private investors.

The capacity and integrity of central and regional government officials is crucial. KPPOD (2008) identified the best and the worst ten districts in this context as shown in Tables 6 and 7 respectively. This information is useful for private investors to identify the best districts in which to conduct business.

**Table 6. Best ten districts for capacity and integrity among mayors/ regents**

Province	District	Subindex score
South Sulawesi	Rgcy Soppeng	87.9
South Sulawesi	Rgcy Barru	84.7
South Sumatra	City Prabumulih	83.4
East Java	City Probolinggo	83.4
South Sumatra	Rgcy Musi Banyu Asin	82.2
South Sumatra	Rgcy Musi Rawas	80.7
South Sumatra	City Lubuklinggau	79.9
South Sumatra	City Pagar Alam	79.9
South Sumatra	Rgcy Lahat	79.8
Central Java	Rgcy Purbalingga	78.9

Source: KPPOD (2008).

**Table 7. Worst ten districts for capacity and integrity among mayors/ regents**

Province	District	Subindex score
North Sumatra	Rgcy Nias Selatan	23.9
Central Java	Rgcy Banyumas	27.1
North Sumatra	Rgcy Nias	28.8
DI Yogyakarta	Rgcy Sleman	30.3
Riau	Rgcy Indragiri Hilir	30.8
East Java	Rgcy Sumenep	31.4
West Java	Rgcy Garut	32.2
Riau	Rgcy Pelalawan	33.9
Central Java	Rgcy Semarang	34.3
North Sumatra	Rgcy Serdang bedagai	36.8

Source: KPPOD (2008).

### ***Opening the business field for foreign investment***

The government has made much progress by eliminating a range of restrictions on foreign investment in retail and wholesale operations. Foreign firms are now allowed to invest directly in both wholesale and large-scale retail trade sectors such as shopping centres, malls, supermarkets and department stores, but the law requires them to enter into a cooperative agreement with a small-scale enterprise. However, during implementation, many foreign firms use franchising, licensing and technical service agreements to distribute their goods. Indonesia has also lifted many restrictions on foreign participation in domestic distribution services. Under current regulations, foreign companies manufacturing in Indonesia may distribute their locally produced goods at the wholesale level and may apply for permits to import and distribute other products as well. However, these licensing processes may depend substantially on the decentralization process.

Before Presidential Regulation No. 77, 2007 (List of Closed Business Field and Opened<sup>6</sup> Business Field with Requirement in the Field of Investment), the government still placed investment in natural forests and the logging industry in the list of closed business fields. After 3 July 2007, the government identified several forestry industries as opened business fields such as: (1) exploitation of other forest products (sugar palm, candlenut fruit, tamarind seed, charcoal material, cinnamon etc); (2) exploitation of swallow nests in the natural sawntimber industry (production capacity up to 2 000 m<sup>3</sup>/year); (3) rattan processing (primary industry); (4) semi-finished products made of mangrove wood; (5) other non-wood forest product processing (primary industry, resin, pine, bamboo, essential oils); and (6) gathering and distributing wild plants and animals from natural habitats. Under this regulation foreign investors can address activities in their forestry businesses.

<sup>6</sup> Opened business fields are business fields that can be undertaken as investment activities according to stipulations, namely, business fields reserved for micro, small-scale, medium and cooperative enterprises where partnership, capital ownership, certain locations or special licences are required. These requirements constitute specifications for the establishment of corporate companies in the form of Indonesian statutory bodies by investors (especially for foreign investors before carrying out investment activities in Indonesia).

A foreign investor may be an individual or a corporate entity, and must have a minimum of two managers/shareholders and at least one director and chairperson. There is no minimum or maximum total investment required to establish the business; however, investors in the manufacturing sector are typically expected to have a debt to equity ratio of 3:1 or less, while those in the agriculture or mining sectors may have ratios of 6:1 or greater. Current regulations permit foreign firms to acquire domestic firms in sectors that are open for foreign investment after receiving approval from the Capital Investment Coordinating Board (BKPM). The BKPM also requires a foreign buying firm to reserve a small stake of a local buyer or the original owner. This is intended to manage risk if a foreign buyer takes over a tricky Indonesian firm. The BKPM frequently requires the investor to inject capital, and not just provide management expertise, technology or assume outstanding loans. The approval process to take over a troubled firm may take as long as two months.

According to the BKPM, ten days are needed to process the initial investment approval (IIA) or investment licence, if an applicant has furnished all requested information and documentation. In practice, however, this process can easily be delayed for two to four weeks depending on the availability of officials and complete submission of documents. The IIA will serve as a temporary operating licence for a period up to three years, but it can be extended. A PMA<sup>7</sup> company can start its commercial activities as soon as it obtains an IIA. The IIA allows the parties to form a limited liability company (*Perseroan Terbatas*) by execution through an Indonesian notary of a Deed of Establishment. The Articles of Association of the PMA company are included in the Deed of Establishment and must comply with Law No. 1/1995 on Limited Liability Companies. With the Deed of Establishment executed, the company may obtain a taxpayer registration number from the Directorate General of Taxation of Foreign Companies. This requires about one week. The PMA company must open a special foreign investment account at an approved foreign exchange bank in Indonesia. Should the PMA company's IIA indicate plans to hire expatriates, it will need to file an application for approval of its human resources plan with the BKPM. A PMA company becomes a limited liability company after the Ministry of Justice and Human Rights grants approval. The process takes a maximum of two months after the minister receives the Deed of Establishment, tax identification number and PMA bank account information from the notary who initially prepared the Deed of Establishment. After obtaining approval from the minister, the PMA should submit its Deed of Establishment to the Ministry of Industry and Trade within 30 days. Following registration with the Trade Minister, the Deed of Establishment should be published in the Supplement to the State Gazette (*Tambahan Berita Negara*), a process normally handled by the notary.

**Link to investment decisions in the forestry sector:** In the focus group discussion, Bapak Mansyur mentioned that because the government has treated the forestry industry as an opened business field, currently foreign investors are expressing interest in investing in pulp and paper industries in Indonesia.

### **Poor infrastructure**

KPPOD (2008) noted that Indonesia's poor infrastructure is harming the business climate and limiting the ability of small business owners to access profitable markets and to operate

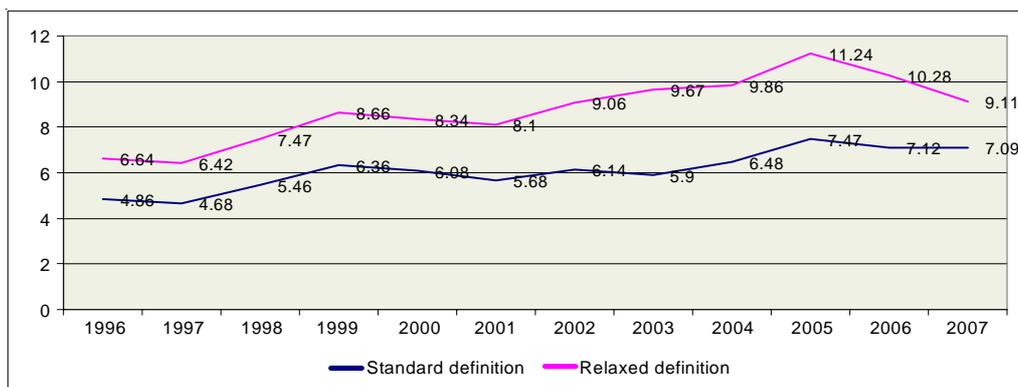
<sup>7</sup> The PMA, Penanaman Modal Asing or an investment with any degree of direct foreign ownership is defined as direct foreign investment.

reliably. Although it is recovering now, Indonesia has suffered from a decade of underinvestment in infrastructure. After the Asian financial crisis, public infrastructure expenditure fell to about 1 percent of the GDP in 2000. By 2007, it had risen to 3.4 percent, which was still below precrisis levels of 5 to 6 percent of the GDP. The poor quality of infrastructure in more isolated areas of Indonesia significantly raises the costs faced by small businesses, transport firms and consumers. Indonesia performs poorly in international rankings of the quality of its transportation infrastructure. A survey conducted by the World Economic Forum ranked Indonesia 91 out of 131 countries in the transportation infrastructure area. Only 58 percent of the total road length in Indonesia is paved, leading to higher maintenance costs for vehicles traveling secondary roads, particularly trucks bearing high loads. By comparison, 98.5 percent of Thai roads and 80.8 percent of Malaysian roads are paved. Issues related to infrastructure development were listed as the greatest constraint to growth by respondent firms.

**Link to investment decisions in the forestry sector:** Adequate infrastructure is very important for plywood, sawntimber and furniture industries. They rely on the government budget to have good transportation infrastructure. Poor infrastructure will burden the industries and increase their cost of production. When the cost of production cannot offer a sufficient profit margin this makes the forestry business a risky business and unattractive for private investors.

### Local labour costs and skills

ILO (2008) noted that between 2001 and 2005, the number of workers unemployed in Indonesia increased dramatically from around 8 million to 11.9 million, pushing the unemployment rate from 8.1 percent to 11.2 percent. The trend began to reverse in 2006 and the unemployment rate stood at 9.1 percent in 2007, as shown in Figure 11.



**Figure 11. Unemployment in Indonesia, 1996-2007**

Source: Based on BPS data (ILO 2008).

Primarily, young people account for 56.5 percent of Indonesia's jobless, whereas they represent 20.5 percent of its labour force. In addition, unemployment is becoming a problem as it is affecting more educated people. In 2002, about 40 percent of the unemployed had some sort of senior secondary or higher educational attainment, and this

share rose to 50.3 percent by 2007. This trend, among others, reflects the attitude of educated young people, most of them coming from wealthier families, to remain unemployed and search and queue for 'good' jobs. The reasons could either be due to slow progress to high-growth paths demanding higher levels of education or due to the irrelevance and mismatch of education and skills attained.

The Department of Manpower and Transmigration (2004) reported that unemployment is partly attributable to training and education systems often offering curricula that are not related to the working domain. To address the problem the department has developed a vast variety of training programmes to increase the work competency of young people who can be used in the labour market. This involves the development of a national professional qualification framework that has been carried out by the Department of Manpower and Transmigration, Department of National Education, other government institutions, the Employers Association and trade unions.

**Link to investment decisions in the forestry sector:** In the focus group discussion, Bapak Mansyur mentioned that Indonesia is relatively strong and has a good opportunity to develop the pulp and paper industry. He indicated that through sustainable forest plantation management and the relatively lower wage rate of human resources, Indonesia can gain international market competition from other foreign countries. Working together with reputable foreign investors, the government considerably enhances the pulp and timber industry. The new pulp and paper industry can provide new jobs to reduce Indonesian unemployment, however improving the skills of workers still needs to be addressed.

### ***Complex rules and regulations for land tenure and usage rights***

The Agrarian Law of 1960, or the UUPA, brought all land registration under the administration of the National Land Agency (BPN), and cancelled all previous Dutch colonial land laws. However, in practice, the 1960 law never streamlined or clarified the system of land administration and regulation. KPPOD (2008) noted that the current legal system is administered by several agencies rather than one: the Ministry of Forestry; the National Land Agency (BPN); the National Development Planning Agency (BAPPENAS); and the Ministry of Home Affairs, as well as local governments. Indonesia's current legal system includes more than 2 000 items of legislation and directives on land use.

Overall, there are three main categories of land rights: Formal rights registered with the BPN; quasi-legal traditional rights of ownership; and holdover rights. Formal legal land rights include five legal classifications: Right of ownership; right of building; right of use; right to cultivate; and right of management. *Hak milik*, or right of ownership, is the only legal category which does not have a fixed period of time. *Hak guna usaha* (HGB), or leasehold, is a right to exploit for a certain period, for example, to hold livestock or for a plantation. *Hak guna bangunan*, building rights, is the right to erect a structure for a certain period. *Hak pakai* is the right to use or extract products from land that is directly controlled by the state or another party. In the second category are unregistered rights, known as *girik*, based on traditional ownership, such as colonial or *adat* laws. The last category, the *garapan* classification, is one of quasi-legal ownership; these rights are holdover rights which allow owners to apply for formal ownership, but the state must first release the rights of the land (KPPOD 2008).

Land registration includes two components: Registration of land that did not previously have a certificate and transfer/upgrading of rights. Obtaining a land registration certificate requires collection and presentation of physical data and juridical data; upgrading of land rights includes registration of the transfer and encumbrance of rights, and registration of other changes to land registration (KPPOD 2008).

The administrative costs of land certification act as a deterrent, particularly for the poor. Government regulation PP 46 (since 2002) includes a formula for determining the cost of land certification, but in practice the registration process is unpredictable and costs vary by agency and can become very high. As an example, the land certification process in outer Jakarta is estimated to cost at least US\$1 000. Many firms and individuals choose to pay a notary to complete the process more quickly. This leads to a bias towards formal ownership by larger, wealthier firms, rather than small- and medium-sized enterprises (SMEs).

The World Bank estimates that only 17 million (21 percent) of Indonesia's 80 million land parcels are formally registered. This affects the investment climate because it leaves a large percentage of businesses without legal protection and subject to eviction. They are unable to use land as an asset for loan collateral in order to invest in their businesses.

KPPOD (2008) indicated the amount of time needed to obtain a land certificate was four weeks or less for 39 percent of firms. Thus, obtaining a land certificate does not appear to be particularly onerous for most firms, although a small number of firms do take much longer to obtain certification, so that the mean time for land certification is around 12 weeks. But a few districts have much longer processes for obtaining a land certificate. In 12 of the 243 districts surveyed, the average time to obtain a certificate was more than six months. Interestingly, these include some important districts: The cities of Bogor (27); Surabaya (36); and worst of all Cimahi, where the average time spent by firms obtaining the land certificate was 42 weeks. It takes much longer to process a land certificate on Java/Bali than other islands. It typically takes twice as long to obtain a land certificate in regencies/cities in Java and Bali than elsewhere (with the exception of Riau and Gorontalo which also have longer periods). Tables 8 and 9 show the ten best and ten worst districts for land certification.

**Table 8. Best ten districts for land certification**

Province	District	Weeks to obtain a land certificate
NTT	Rgcy Timor Tengah Utara	4
South Sulawesi	Rgcy Pinrang	4
Riau	Rgcy Pelalawan	5
NTT	Rgcy Timor Tengah Selatan	5
North Sumatra	City Tanjung Balai	5
NTB	Rgcy Lombok Tengah	5
NTT	Rgcy Alor	5
Riau	Rgcy Rokan Hilir	5
North Sumatra	Rgcy Mandailing Natal	5
North Sulawesi	Rgcy Kepulauan Sangihe	5

Source: KPPOD (2008).

**Table 9. Worst ten districts for land certification**

Province	District	Weeks to obtain a land certificate
East Java	Rgcy Sumenep	27
West Java	City Bogor	27
Central Java	Rgcy Kudus	28
East Java	Rgcy Sidoarjo	30
Central Java	Rgcy Demak	31
East Java	Rgcy Sampang	32
DI Yogyakarta	Rgcy Kulon Progo	32
East Java	City Surabaya	36
Bali	Rgcy Bangli	39
West Java	City Cimahi	42

Source: KPPOD (2008).

Concerning forest cover and forest management, Contreras and Fay (2005) noted that conflict between local people – who claim land and resource rights over forest resources and forestry industries – and officials has been increasing over the past 15 years. The main problems are the uncertain ‘rules of the game’ as laid out by the Ministry of Forestry. The ministry claims jurisdiction over most of Indonesia, but is unable to manage such a large area and to provide the tenure and management security needed by both the local people and the forest industry. Contreras and Fay (2005) mentioned that before the Forestry Law banned mining in protected forests in 1999, 150 mining companies held contracts overlapping with forests extending over 11 million hectares, including 8.7 million hectares of protected forests and 2.8 million hectares of conservation forests. Many of these areas are home to rural communities who see their traditional rights threatened by these activities. Again, it also carries a number of negative consequences as timber concessions are awarded in non-transparent ways to a small number of powerful and well-connected individuals or corporations. Forests are also used as a vehicle for political patronage. All of the factors continue to be instrumental in concentrating the growing economic and political power in a few hands.

Contreras and Fay (2005) concluded that the legal framework for forest zones is complicated by a number of related laws that indirectly have an impact on how different layers of government and communities manage forest resources and the clarification of rights. For example, there are over 2 000 items of legislation, regulations and norms concerning land. Many more laws<sup>8</sup> from other sectors indirectly have an impact on the management of forest resources. There is also a plethora of ministerial decisions, ministerial circulars and government regulations governing land use and tenure. New legislation related to the Indonesian decentralization process created further ambiguity on the rights to control forest resources. For example, a presidential decision states that land tenure matters are under the authority of the central government while the regional governance Law 22 of 1999 gives autonomy to districts to make decisions concerning land matters, including the settlement of conflicts (Contreras and Fay 2005). Similarly,

<sup>8</sup> Namely the Agrarian Law of 1960 and Forestry Law of 1999.

Government Regulation 25 on the Powers of the Central Government and the Provinces as Autonomous Regions issued in 2000 also conflicts with Law 22 because it sets up the provinces rather than districts as autonomous regions. Regulation 25 gives the Ministry of Forestry the main authority to stipulate boundaries, functions and zoning of forest lands. Yet, regional governments do not always respect this authority, partly because a ministerial decree does not have the legal status to modify local decisions (Elfian and Dewi 2002; Contreras and Fay 2005).

Contreras and Fay (2005) also explored regulatory inconsistencies between the Regional Autonomy Law and the Forest Law. The Regional Autonomy Law 22/1999 assigns authority over natural resource management decisions to regional governments. Government Regulation 34/2002 on the Management, Exploitation and Use of Forest Areas provides operational guidance for the implementation of the Forest Law. This regulation gives authority for deciding on timber concession contracts to the central government, a right that regional districts considered as being part of their authority.

Another serious legal inconsistency, which eventually required a Constitutional Court decision, was related to the conflict between the Forestry Law, which explicitly banned open pit mining in forest areas, and the Government Regulation in Lieu of Law No. 1/2004 (*Peraturan Pemerintah Pengganti Undang-undang, Perpu*). Under Indonesia's Constitution, the President has the power to issue temporary emergency regulations, *Perpu*, which must then be approved by parliament. Once passed, the *Perpu* has the same legal status as a law issued by parliament. The *Perpu* went against the spirit of the Forest Law by allowing mining operations in protected areas that had been approved by the government before the issuance of the Forest Law. The *Perpu* was followed by a Presidential Decree (*Keputusan Presiden, Keppres*) No. 41/2004, which allowed mining operations by 12 companies in 13 concessions in several protected forests in Indonesia.

In other cases, laws are simply not followed. The Spatial Planning Law 24/1992 stipulated that the government, with the participation of local communities, should undertake spatial planning. In practice, this has rarely happened. The problem with this particular law and its regulations is that they do not include penalties in case of non-compliance. For example, if conversion to other uses takes place in an area where this is not permitted under the spatial plan, there is no way for authorities to undertake enforcement because they cannot impose any sanctions on violators. Furthermore, the law appears to contradict other legal bodies on decentralization, particularly the Law on Regional Governance. The forestry law is very centralistic in its approach, while the decentralization law puts emphasis on bottom-up planning (Elfian and Dewi 2002; Contreras and Fay 2005). In short, the present land and natural resource laws and rules are: 1) overlapping; 2) contradictory and confusing; 3) simply non-existent; or 4) when extant are rarely enforced. These features of the legal framework explain, at least in part, the gap between what the laws says and what really happens in practice.

**Link to investment decisions in the forestry sector:** Land tenure and usage rights are very important for the timber industry, particularly for pulp and paper and logging. Investors are very concerned about simple, clear and effective rules and regulations on land tenure and usage rights. Complex and conflicting rules and regulations will cause the industry to be regarded as a risky venture, unattractive and constrain private investment in the industry.

### **Good incentives**

Incentives such as the availability of fiscal incentives to attract foreign investors, no limitation on the value of investment, the possibility for foreign investors to fully own their investments in almost all sectors and a simplified investment approval process, can be very important to boost Indonesian economic growth. IGES (2006) noted that all investment activities in Indonesia are regulated by: 1) Foreign Investment Government Regulation 1967 (PMA); and 2) Domestic Investment Government Regulation 1968 (PMDN). In order to attract foreign direct investment (FDI), Indonesia over the past decade has created a series of incentives and addressed deregulation. The following incentives have been introduced:

- June 1994: Government Regulation No. 20. The obligation to transfer 50 percent of the total shares in the business to the Indonesian side was abolished. The ownership of 100 percent of shares by FDI was approved. The minimum investment amount has been abolished, as long as the amount invested is sufficient for the business activity.
- January 1996: The FDI limit on export trading was increased to 100 percent.
- July 1998: The retail sales market was opened to FDI.
- March 1998: General import trading was opened to FDI.
- June 1999: The establishment of a holding company became available to FDI.
- July 2000: The list of types of business not available to FDI (the negative list) was revised.
- February 2007: Collective Regulation of the Ministry of Finance and Forestry No. 06.1/PMK.01/2007 No. SKB.2/Menhut-II/2007 about Reforestation Fund Management in Account of Forest Development.

### ***Incentive policies in the forestry sector***

Specific government incentives in the forestry sector are mainly aimed at the Industrial Forest Plantation Program (*Hutan Tanaman Industri*, HTI) in the form of reduction of investment loan interest rates, and at forest and land rehabilitation programmes in the form of access to credit and financial support for infrastructure development. The reduction of investment loan interest in HTI development, especially in the use of the *Reboisasi* Fund (Dana DR), can result in interest rates being reduced to 0 percent. According to the decrees jointly issued by the Minister of Forestry and the Minister of Finance (*SK Bersama Menteri Kehutanan dan Menteri Keuangan*), No. 496/Kpts-II/1994 and No. 533/KMK.017/1994, the government's share in the development of industrial forest plantations from the Reforestation Fund is limited to a maximum of 65 percent of the total cost of HTI development with an interest rate of 0 percent. The share of an HTI company should be at least 35 percent of the total development cost at a normal commercial interest rate (for example, in 1994 the interest rate was 12 percent). According to Government Regulation (*Peraturan Pemerintah*) No. 35/2002 concerning the Reforestation Fund, the incentives for forest and land rehabilitation are in the form of access to credit, support with/donation of seedlings and support in the development of infrastructure through DR financing.

A recent regulation concerning Reforestation Fund management was issued by the Ministry of Finance and Forestry in February 2007. The Reforestation Fund is for forest and land rehabilitation through loan schemes and the fund will be rolled over to legal business entities (state-/regionally-owned companies and private companies), cooperatives and forest farmer

groups. However research found that money from the Reforestation Fund had yet to be spent on needy parties at the time this paper was being written. Bapak Deny Kustiawan<sup>9</sup> explained that currently his office is still circulating programmes among stakeholders due to delay of local government approval of HTR licences.

### ***Negative public perception about forestry and forest utilization***

Locals who see outsiders arrive to harvest timber on their community lands often try to resist, but usually find themselves engaged in an unequal fight (Jarvie *et al.* 2003). This situation reflects the governance characteristics of the contemporary Indonesian polity. Local community complaints about forestry and forest utilization commonly arise from (among others):

- Loss of forest that served as an economic resource supplying rattan, fruit and sacred honey trees.
- Contamination of rivers and reduced flows due to logging waste, which also reduces fish stocks.
- Community development approaches not based on needs.
- Communication restricted to company representatives and community elites, without involvement of the broader set of community stakeholders.
- Decreased community land.

**Link to investment decisions in the forestry sector:** Positive public perception of forestry and forest utilization is very important to invite domestic and foreign investors to invest in the forest industry. Negative public perception will decrease national ‘investment climate indicators’,<sup>10</sup> forest industry factors<sup>11</sup> and company factors<sup>12</sup> that prevent investors and lenders from participating in the forest industry.

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<sup>9</sup> The author interviewed Bapak Deny, head of Badan Layanan Umum Pusat Pembiayaan Pembangunan Hutan (Public Service Agency, Center of Forest Financing and Developing) on 26 November 2008.

<sup>10</sup> Broad economic, legal, regulatory, political and social factors that could affect an investment. International investors may consult several of the many investment climate indicator analyses published by international organizations, specialized research organizations, or industry publications (Euromoney’s *Country credit ratings*, the Economist Intelligence Unit’s *Country risk service* and the World Bank’s detailed *Investment climate surveys*).

<sup>11</sup> To measure the commercial viability and behaviour of an industry, supply and demand conditions, level of industry maturity and growth, the level of competition, technology change and other factors that could affect sales and margins for a business in the industry.

<sup>12</sup> To assess the asset quality, competitive strategy, products, growth prospects, production, marketing, management, operating, financial performance and funding capabilities of an investment prospect.

## **Analysis of legislative and non-legislative constraints**

### ***Complex procedures and requirements for starting a business***

There are basically three types of companies that may lawfully engage in business in Indonesia: (1) state-owned companies; (2) private companies (foreign or domestic); and (3) cooperatives. Patlis (2002) stated that in order to comply with basic Indonesian laws, parties should consider:

*Central government laws, such as: business, corporate and commercial laws; forestry laws; environmental laws; financial management laws; labour laws; agrarian, adat and spatial planning laws; also regional autonomy laws.*

Relating to corporate formation is Act No. 40/2007 (to replace Act No.1/1995) on Limited Liability Companies. It establishes the requirements for the establishment of a corporation, registration and articles of association, capital and shares, annual reports, use of profits, mergers, dissolutions and investigations. Other statutes related to specific issues in business are Act No. 1/1967 (foreign investment) and Act No. 8/1995 (publicly held companies traded on the stock exchange).

Concerning land access and security of tenure, Indonesia requires clear land-planning procedures; ownership rights should be imposed and well documented. Due to poor documentation of ownership rights, this has led to informal ownership, particularly by the poor, but also by middle-class residents and business owners. Informal landownership often held by smaller, informal businesses makes these firms more vulnerable and at risk of dissolution.

Patlis (2002) indicated that the legal framework governing the forest estate is characterized by a dichotomous treatment in both dissemination and implementation of laws. On the one hand, the forest estate is governed, at the central level, by an overwhelming number of statutes, regulations and decrees at presidential, ministerial and director-general levels. He noted that 916 individual laws govern the forest estate. On the other hand, the vast majority of stakeholders – including civil servants – can only perform the basic system of the primary statutes or regulations, and will have only unclear knowledge of the diverse lower laws that exist. This dichotomous treatment of laws circulated and laws implemented is one of the major issues to be examined in attempting to define the legality of logging operations in the forestry sector. Conflicts of interest among stakeholders occur frequently in the field. Consequently, the ability to manage costs and benefits at all times is absolutely essential. Without tenurial certainty and clarity over access to forest resources, investments in the forestry sector will probably struggle to succeed. The point is how government, communities and business practitioners can be organized within a clear tenurial system with rules, obligations and bundles of rights for stakeholders to utilize land and forest resources transparently, sustainably and equitably.

**Link to investment decisions in the forestry sector:** Investors are very concerned about simple, efficient and effective procedures and requirements to start a business. Complex and conflicting procedures and requirements can create conflict among stakeholders and deter private investment in the industry. The government needs to take further action to address this problem to safeguard operations.

### **Costly, lengthy and complicated licences**

KPPOD (2008) concluded that business licensing in Indonesia is costly, lengthy and complicated. They found that the Regency of Trenggalek in East Java requires the longest time to issue a business registration certificate (TDP) at approximately 108 days. Karimun in Kepulauan Riau takes 57 days. At the same time, the regencies of Gorontalo, Luwu Utara and Pinrang were able to process business licences quickly, within approximately two days. An interesting point to note here is that districts in Riau were among the most and the least efficient in processing licences. Table 10 shows the actual time required to obtain a TDP.

**Table 10. Time required to obtain a Business Registration Certificate (TDP)**

Province	Slowest districts	Time (days)	Province	Fastest districts	Time (days)
East Java	Rgcy Trenggalek	108	Gorontalo	Rgcy Gorontalo	2
Kepulauan Riau	Rgcy Karimun	57	South Sulawesi	Rgcy Luwu Utara	2
Riau	Rgcy Rokan Hilir	42	South Sulawesi	Rgcy Pinrang	2
East Java	Rgcy Sampang	41	South Sulawesi	Rgcy Luwu	3
East Java	Rgcy Malang	37	Riau	Rgcy Siak	3
Bali	Rgcy Badung	36	South Sulawesi	Rgcy Luwu Timur	4
East Kalimantan	Rgcy Penajam Paser Utara	35	Kepulauan Riau	Rgcy Lingga	4
North Sumatra	Rgcy Simalungun	31	North Sumatra	Rgcy Mandailing Natal	4
West Java	Rgcy Indramayu	31	Gorontalo	Rgcy Bone Bolango	4
East Java	City Surabaya	30	NTT	Rgcy Ngada	4

Source: KPPOD (2008).

KPPOD (2008) also found that the top five least expensive locations to get a business registration were all in Java, ranging from US\$7.00 to US\$139.00. The most expensive provinces, according to firms surveyed, were South Sumatra and NTB ranging from US\$342.00 to US\$642.00. This is interesting because there seems to be no correlation between time and cost; the fastest licensing services were all found outside of Java, primarily in Sulawesi. No assumptions can be made that the most remote locations are the most inefficient from the above results. Some of the most expensive locations, such as the cities of Surabaya and Denpasar, are far from being remote. Interestingly, more of the most expensive locations are cities, while most of the least expensive are regencies. Table 11 shows the costs of obtaining a business licence.

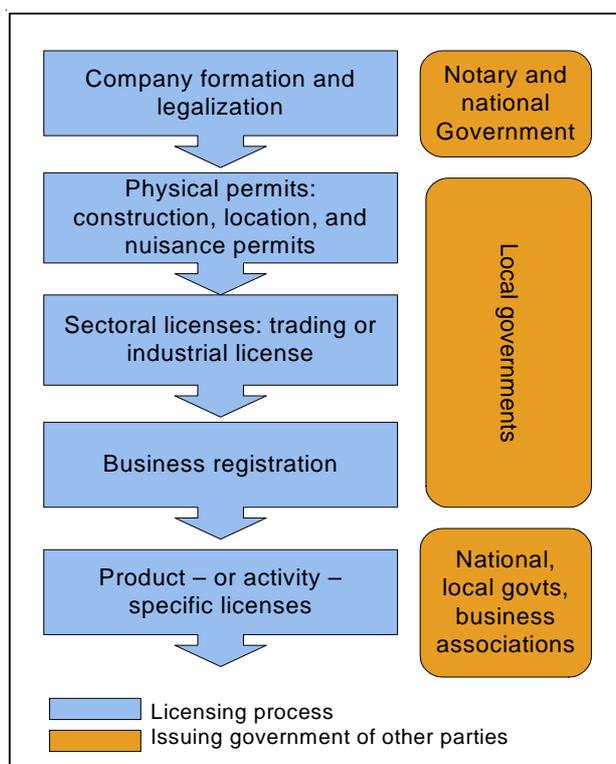
**Table 11. Costs of obtaining a business licence in Indonesia**

Province	Most expensive districts	Cost ('000 Rp)	Province	Least expensive districts	Cost ('000 Rp)
South Sumatra	Rgcy Ogan Komerling Ulu	5 620	Central Java	Rgcy Klaten	60
NTB	City Mataram	4 697	East Java	Rgcy Pasuruan	75
Kepulauan Riau	Rgcy Natuna	3 074	East Java	Rgcy Pacitan	85
East Java	City Surabaya	2 714	Central Java	Rgcy Kudus	90
West Java	City Depok	2 345	DI Yogyakarta	Rgcy Kulon Progo	94
North Sulawesi	City Bitung	1 496	Central Java	Rgcy Pati	98
Bali	City Denpasar	1 445	East Java	Rgcy Madiun	100
Bali	Rgcy Badung	1 273	East Java	City Blitar	101
East Java	Rgcy Malang	1 250	East Java	Rgcy Magetan	110
West Java	Rgcy Bogor	1 214	Central Java	Rgcy Temanggung	118

Source: KPPOD (2008).

Indonesia has many business licences and a complex system for administration and enforcement. At the Ministry of Trade alone, there are as many as 122 types of business permits. According to the World Bank's 2008 *Doing business* report, to start a new business in Jakarta, a business person has to go through 12 procedures, taking 105 working days. Asia Foundation (2007) identified the complexity of the business licensing structure in Indonesia. It stated that the complexity arises from two issues. First, the multiplicity of

these different types of licences, administered by various levels of governments and even business associations, has caused over-regulation of the private sector. Second, despite the many regulations governing the private sector, the exact functions of business licences, i.e., social protection, market control and information gathering, have not been clearly defined by the government. The current business licensing system is depicted in Figure 12.

**Figure 12. Current business licensing process**

Source: Asia Foundation (2007).

This is a generalization of the licensing process, starting from the establishment of a firm. The main difference for Indonesia, relative to other countries, is that the business registration is undertaken only *after* the company is operational, not before. Therefore, business registration follows other licences, instead of preceding them. This kind of arrangement stems from the principle that business registration should capture information of businesses in *actual* operation, instead of firms or companies still in the *planning* stage.

After a company finishes with formation requirements, there are *physical location permits* that should be obtained. These include the business location permit, the construction permit and the nuisance permit.<sup>13</sup> These three permits are generally required by most businesses, large and small. However, for large businesses with sizeable land requirements, such as those operating in mining, forestry, real estate and plantation, these physical permits are preceded by a permission in principle, or principle permit, and location permit (different from the business location permit). The principle permit amounts to a land concession, even covering areas not yet owned by the applicant, and the large business location permit relates to land usage and transfers. Both permits are granted at the discretion of local and/or national authorities (Asia Foundation 2007).

### *Sectoral licences*

Businesses are also required to have licences in order to operate in the major sectors, such as trade, industry, and tourism. These sectoral licences are officially considered as ‘technical’ licences. However, they are not to be confused with activity-specific or product-specific licences (Asia Foundation 2007).

### *Business registration*

For most firms, this can be done at the local government office. However, for limited liability companies, this step is composed of numerous procedures, which include obtaining a registration certificate and publishing an announcement in the legal gazette, which is done through the Ministry of Justice. There are different principle permits (*Izin Prinsip*) for different sectors, not only limited to land concessions.

### *Product-specific and activity-specific licences*

In addition, companies are also required to have various *product-specific* and *activity-specific* licences. Some of these may even involve the approval of local business associations. Examples of these licences include permits to operate industrial or transportation equipment, permits to produce commodities and other permits to transport them, export licences and permits to operate specific tourism activities (such as water-tourism permits). These licences may be issued not only by the national government, but also by provincial and district/city governments (Asia Foundation 2007).

Under forest laws there is a range of documents that must be submitted by timber companies. Brown (2002) summarized the licences that should be dealt with as follows:

<sup>13</sup> The nuisance permit is used to assess the disturbance caused by business activities, such as traffic or noise. Usually approval by neighbours is required.

*Pre-logging:* Until now, three types of logging permits are allowed in Indonesia: IUPHHK, nationally-granted licences to selectively harvest timber from natural forests and timber plantation; IPK, nationally-granted licences to clear fell timber, supposedly from degraded natural forests, and for the purpose of establishing industrial timber or estate crop plantations; IPPK, HPHH, IPKTM, HPHKM, HPH *kecil* and other types of district-granted licences, supposedly for clear-felling degraded forests.

*Logging:* IUPHHKs are required to produce a cruising (tree inventory) report (*Laporan Hasil Cruising* or LHC), which are supposed to map the location of each tree of commercial value in each year's annual cutting block. All types of logging activities are required to produce a production report (*Laporan Hasil Produksi* or LHP). These reports list the total number of logs removed from a given annual cutting block, and each of these logs is to be assigned a serial number.

*Transportation to mill:* The *Surat Keterangan Sahnya Kayu Bulat* or SKSKB (previously the SKSHH) is the name of the document that accompanies each shipment of logs from a forest site to a mill. All SKSKBs are issued in continuously numbered blocks by the Ministry of Forestry in Jakarta, based on individual requests from each *Dinas Kehutanan Propinsi*.

*Manufacturing:* A number of additional documents and/or permits are filled out once logs reach timber mills. These documents keep careful track of the number of logs, volume of logs, and in some cases, even the actual species coming into the mill, but not always the point of origin of the logs. The documents include: *Laporan Penggunaan Harian Kayu Bulat* (daily); *Buku Registrasi Penerimaan Kayu Bulat* (daily); *Laporan Mutasi Kayu* (monthly); *Laporan Keuangan* resulting from an audit of a public accountant (yearly).

*Export:* When processed forest products actually leave a harbour, customs officials issue an export declaration called the *Pemberitahuan Ekspor Barang* (PEB), one for each full shipment. However, the PEB does not necessarily accompany a given shipment onto the high seas. The only document that is available for buyers in the importing nation is the ship's manifest.

**Link to investment decisions in the forestry sector:** The major regulatory problem with the Indonesian licensing system is that different types of business permits have overlapping functions. Each business licence supposedly serves a different function. In actual practice some of them are redundant. For example, both the trading permit and the business registration collect similar kinds of information. However, the actual implementation of business licences suffers from a lack of government capacity and resources, preventing governments from providing the social protection, market control, or information collection that business licences are supposed to afford. Investors are very concerned about simple licences. Complex licences can hold back commercial activities, decelerate the growth of small firms, discourage the establishment of new businesses and deter entrepreneurs from formalizing their businesses.

### ***Risky credit***

Experience shows that companies are not always responsive to legislation or softer policies. Moreover, financial institutions are exposing themselves to various types of risk when they are involved in financing criminal or destructive activities. 'Know your customer' policies in the banking system do not work appropriately.

Due to a weak financial regulatory environment Indonesia's largest forestry companies have benefited from obtaining low cost financing, exceeding legal lending limits and other banking products, diverting central bank liquidity credits and also profiting through financial mark-up schemes. They have strong connections and it is difficult to identify who owns what in the timber industry, as fronts, interconnected boards, multinationals, off-shore interests and so forth make the whole business far less accountable to any single agency.

**Link to investment decisions in the forestry sector:** In-house Experts Working Group (2007) recorded nearly 1 000 sawntimber and wood-working enterprises as no longer active and only 602 enterprises operating in 2006. The government should take further action to help businesses recover by supporting government banks in developing government loans. The industry is facing many problems such as lack of mediation with banks, low product quality, high product prices and low industry efficiency resulting from obsolete machinery. These problems also make it difficult to obtain credit.

### **High unofficial charges**

KPPOD (2008) reported the percentage of firms making payments to different groups (Table 12). The table shows that nearly one-third (31 percent) of large businesses make payments to the police, compared to only 11 percent of small businesses. Concerning districts that make payments to the police KPPOD also reported ten districts with the highest share of firms making payments to the police (Table 13).

**Table 12. Percentage of firms making payments to different groups**

	Small %	Medium %	Large %	Production %	Trade %	Service %	Average %
Police	11	16	31	15	18	12	17
Military	4	7	17	7	7	5	8
Local government	5	5	9	6	6	4	6
Social organization	11	13	21	14	14	10	14
The 'underworld'	5	5	7	5	7	4	6

Source: KPPOD (2008).

**Table 13. The ten districts with the highest share of firms making payments to the police**

Province	District	% of firms that make payments to the police
East Kalimantan	Rgcy Malinau	49
Riau	Rgcy Rokan Hilir	44
North Sumatra	Rgcy Labuhan Batu	42
North Sumatra	City Tanjung Balai	40
East Kalimantan	Rgcy Kutai Timur	40
West Java	City Bekasi	38
North Sumatra	Rgcy Langkat	38
Central Java	City Semarang	36
West Java	Rgcy Indramayu	35
East Java	Rgcy Jombang	35

Source: KPPOD (2008).

Applegate (2002) identified two kinds of taxation taking place in Indonesian wood industries namely formal taxes and informal taxes. Formal tax payment is the major revenue-earning component of the timber harvesting operation for the government. There are five main taxes: A forest concession fee (IIUPH); forest resource royalty (PSDH); the Reforestation Fund (DR); a building tax (PBB); and a road tax (the latter is payable to some of the provincial and district governments). Under good governmental financial management, timber revenues should be part of the formal government budget (APBN) and should be transparently managed and accountable. The central government can calculate the amount of timber revenue received every year, but it has difficulties in producing associated information. This can be a source of corruption and misuse of funds. For example, instead of using the DR for reforestation, funds were used to finance many things including development of Indonesia's airspace industry.

Based on his analysis of forest sector activities, Applegate (2002) conservatively estimated 13 activities involving the collection of informal taxes which result in an increase in the cost of log production of over 20 percent. Unofficial charges (taxes) appear to be levied on almost all transactions requiring approval, either at the central level, or at the province or district level. There are also 'security' services that are required to ensure logs arrive at the processing plants. Some of the informal taxes are based on the area of the concession, some on the volume of logs on trucks or volume removed from a concession and some on lump sum payment *per annum*. Some taxes have a fixed price, but many are dependent on the ability of the concessionaire to pay; i.e., they are dependent on the current price of the logs or the availability of timber. The following 'transaction costs' may be incurred by a timber-harvesting company or concession holder as part of the cost associated with its timber-harvesting operations:

- Signatures from officials for different levels of work plans and licences.
- Approval and evaluation of work plans.
- Log measurements at log ponds.
- Signed log transportation permit, *Surat Keterangan Sahnya Hasil Hutan (SKSHH)*.
- Transportation and security of logs in transit.
- Inspections of operations.
- Donations to provincial activities.
- Overall security.
- Village donations requested by NGOs and communities.

Applegate (2002) also speculated that as the resource becomes smaller, many individuals who impose taxes are likely to become more desperate in maintaining control over their ‘business’, which leads to an increase in violent clashes between interest groups. The research conservatively estimated costs to the concession holder associated with unofficial charges to be US\$16.94/m<sup>3</sup>.

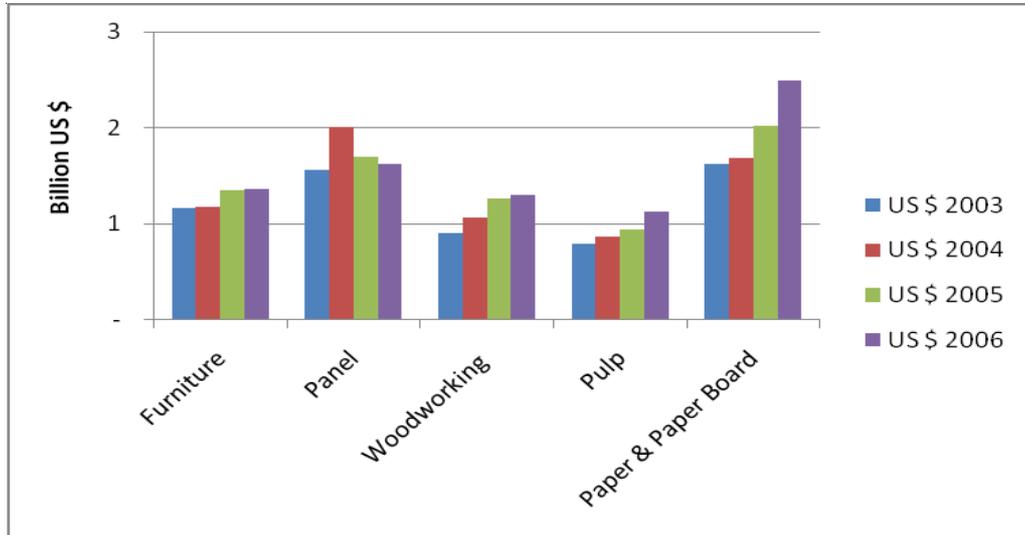
**Link to investment decisions in the forestry sector:** Unofficial charges – on almost all transactions including forest concession rights approval, either at the central level, or at the province or district level – have burdened timber companies and discouraged ethical business investors from entering the industry. Unofficial charges have allowed forest concession holders to continue unsound and sometimes illegal activities that also result in an increase in deforestation. The government should immediately address the problem in order to prevent industry collapse, especially through strengthened law enforcement. If this is not done investment in forestry will continue to be a risky venture and unattractive.

#### **Market challenges and threats to trading**

World Bank (2007a) identified China, Japan and the Republic of Korea as consuming over half of Indonesia’s plywood, pulp and sawnwood exports. Figures 13 and 14 show the development of the export of forest industry products during 2003-2006 in terms of prices and volume respectively (BRIK 2008; Indonesian Pulp and Paper Association 2007).

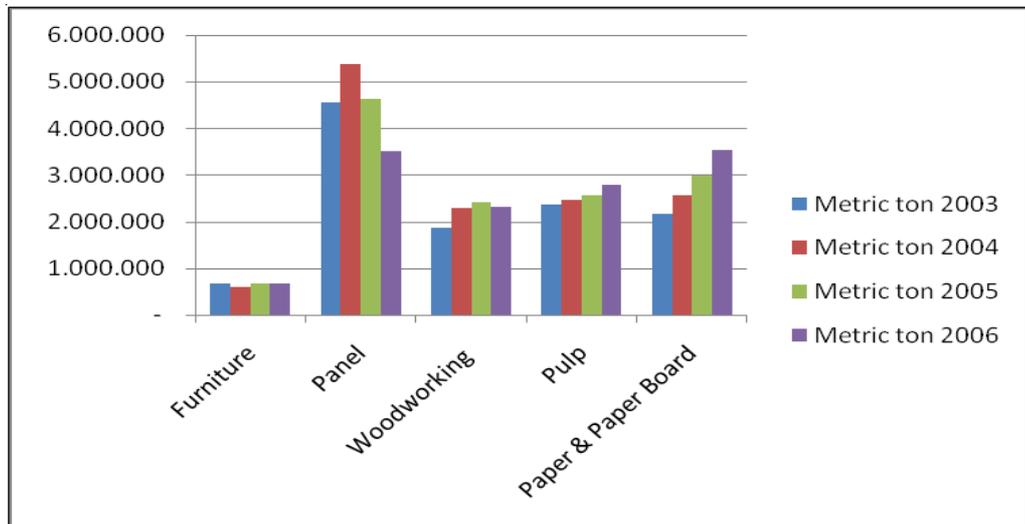
In-house Experts Working Group (2007) observed that Indonesia faces market challenges and threats from other countries. The sawnwood and wood-working industries are facing problems such as low quality of products compared to those from other countries (China, Malaysia, Brazil and other Latin American countries); preferences for certificated products; high prices of Indonesian products compared to those of competitors such as China; and low industry efficiency resulting from antiquated machinery. The plywood and panelwood industries are confronted by preferences for certificated products and low industry efficiency because of antiquated machinery. The furniture and handicrafts industries are facing similar problems.

**Link to investment decisions in the forestry sector:** The government should take immediate steps to address these problems to prevent industry collapse. If this is not done investment in forestry will continue to be a risky venture and unattractive.



**Figure 13. Export value of forest industry products, 2003-2006**

Sources: BRIK (2008); Indonesian Pulp and Paper Association (2007).



**Figure 14. Export of forest industry products, 2003-2006**

Sources: BRIK (2008); Indonesian Pulp and Paper Association (2007).

***A gap between vision and its implementation***

In future, wood-processing industries are expected to be sturdy, efficient and competitive; they should develop and use legal and sustainable supplies of raw materials. The Ministry of Forestry’s vision is a “high quality and competitive Indonesian timber industry supported by sustainable and growing sources of raw materials” (In-house Experts Working Group. 2007).

In order to operationalize the vision, the ministry has developed missions with the following mission statements: (1) increase the availability of raw materials for utilization, especially from forest plantations and other legitimate and sustainable sources of timber; (2) restructure and revitalize timber mills making them efficient, competitive and supportive to wood-working industries; (3) develop environmentally-friendly high value-added products that can compete in the international market; and (4) produce certificated wood-working industry products.

The Long Term Development Plan (2006-2025) will prioritize and plan for addressing current issues in the forestry sector, in particular targeting poverty eradication, sustainable forest management and decentralization. The Ministry of Forestry's vision is creating sustainable forest management that improves people's welfare, especially for those who rely on forest resources. In its Medium Term Strategy, the Ministry of Forestry has adopted the aim of "creating sustainable forest management that helps to improve the people's welfare, especially for those who rely on forest resources". The short-term approach will be to sustain the dialogue and public participation processes that helped to create the vision.

In general, some problems to be addressed are:

- the level of welfare is still low for people living in close proximity to forests;
- lack of support from stakeholders for forest development;
- many people still tend to undervalue forests;
- the large gap between industrial timber demand and sustainable supply;
- the Sustainable Forest Resource Management System has not been optimal in fulfilling economic, social and environmental objectives;
- laws to support sustainable forest management are incomplete and law enforcement in the forestry sector is still weak.

There is still a gap between principles and performance. Law enforcement and governance are not performing well enough to see principles being implemented. Many have argued that forest management in practice is not people-centred. In short, Indonesia's management and governance framework is not delivering on its own objectives.

## **Means of removing or reducing constraints**

Currently, Indonesian timber companies, particularly plywood, panelwood, sawntimber and wood-working enterprises, are severely threatened. The industry is not only facing adverse publicity due to social and environmental problems caused by the industry performance, but also economic difficulties. Many businesses have collapsed.

Constraints number costly, lengthy and complex licences, regulations and procedures; high unofficial charges; poor infrastructure; and low industry efficiency because of obsolete machinery. These factors generate difficulty in competition with countries like China, Malaysia, Brazil and other Latin American countries due to low product quality and high product prices. There are also issues of mediation with banks (In-house Experts Working Group 2007). Plywood, panelwood and pulp and paper industries also face lack of raw materials or negative public image due to exploitation of natural forests.

## Recommendations

1. Promote good business practices and a positive image: *To overcome the negative perception that the forestry industry has with respect to its effect on social and environmental values, the author proposes developing a standard and guidelines for green investment in forestry. Principles, criteria and indicators needed to achieve sustainable forest management should be developed (Simangunsong et al. 2004). The proposal could be called the Indonesian Sustainable Business Opportunity (SBO). Four suggested principles are:*

- a) *Conservation and protection of forest function*
  - Companies should not finance any activity that damages or degrades high conservation value forests.
  - Companies do not carry out operations in proposed or legally designated protected areas.
  - All hazardous wastes must be disposed of properly to prevent the contamination of soil, groundwater and surface water.
  - Companies avoid all uncontrolled and illegal use of forest fires for clearing.
- b) *Legality of designated concessionaires*
  - Designated concessionaire areas for plantation are free from conflict with local communities and indigenous people.
- c) *Legality of activity and labour rights*
  - Companies are not involved in, collude with or purchase timber from illegal logging operations.
  - Companies ensure that good working and labour policies and practices are implemented, monitored and regularly evaluated in accordance with local, state or national labour laws.
- d) *Transparency and accountability*
  - Companies increase financial transparency and accountability to improve forest management by increasing public scrutiny and allowing better law enforcement.

Assessment should be made not only of investors, but also of forest product producers and traders in order to foster sustainable business opportunities. There is also a need to develop an assessment tool for classification of parties (investors, producers and traders). This would require collaboration between government institutions, businesses and civil society organizations who are interested in sound forestry business practices.

Parties could be classified into three levels: 1) Awareness level: parties who have commitment to a sustainable environment, friendly social approaches and future orientation; 2) Fighter level: parties who fight back to realize their commitment; 3) Champion level: parties who have succeeded in meeting international standards.

In order to demonstrate commitment to the SBO, proof should be presented such as a written policy or statement; information on natural resource, energy and chemical consumption, including data for GIS analysis; and audited financial statements for the last three years. Other items could be an independent assessment/audit on the effect the business

has on environmental pollution and deforestation. Achieving an international certification standard would be a significant indicator of commitment to the SBO.

Promoting parties interested in Indonesian SBO could be done in collaboration with Nur Bani TV (NBTV) Parties agreeable to being NBTV community members would receive support from NBTV according to membership category. Currently NBTV is developing its connection with Hong Kong S.A.R. and some European countries.

*2. Boosting credit:* Support policies in favour of competition and reinforce competitive behaviour at the microlevel through: 1) information-sharing requirements; regulations should ensure that a standard credit line is available between banks (and, preferably, non-banking SME lenders), with access to this credit based on a signed request from the borrower; 2) making commercial banks more transparent, such as providing a more accurate picture of their current microfinance activities.

*3. Infrastructure:* Improving infrastructure such as roads and communications to rural areas is an important step in encouraging investment. Improving district roads could be done through: 1) reforming the mechanisms that channel central funds to local governments; 2) improving greater use of public-private partnerships. Provincial governments could also work with the state electricity enterprise to set up general output-based service schemes to provide electricity to unserved villages. They should also ensure that the licensing interconnection regime favours rural access. This will require the introduction of regulations allowing asymmetric interconnections between rural and urban operators and the establishment of an open, technology-neutral licensing regime.

*4. Education:* Improving the quality of secondary and tertiary level science and technology skills will increase the skill base and will support technology/innovation capacity building in enterprises. This could be done by separating the provision and funding of such training in order to make it more demand driven. The government should conduct training based on demand. Demand may come from the private sector or other business development services. For example, the government could help to bear the costs of identifying the types of training and capacity building which are needed in a local area and disseminate this information widely.

*5. Marketing and competition:* The government should remove restrictive marketing arrangements embodied in the export cartel and create incentives to promote investment in industry retooling for efficiency and value added for longer run activity. This would require access to capital, marketing assistance and technology advice. To accomplish forest industry restructuring for more efficient and legal economic development, improved enabling conditions would also include reform of the financial sector to address bankruptcy and improve due diligence in the review of projects and investments. There is also a need for greater coordination between financial sector policies and forest management policies to avoid confusion and contradictory incentives. In addition, the government should consider empowering the Business Competition Supervisory Commission (KPPU) to explore anti-competitive practices by state-owned enterprises and local governments, and provide the KPPU with the necessary human resources, operating budget and office facilities for this expanded mandate.

6. *Enhance the quality and capacity of local leadership:* In order to improve the quality of local leadership, the government should provide incentives for good performance. The government could link some intergovernment transfers to local government performance in a variety of areas of service delivery in order to provide an incentive for improved performance. In addition, the government should create a national training programme for local government leaders. This would involve introducing a nationwide curriculum for government leaders (Gubernur, Bupati, Walikota, Ketua DPRD and DPRD members) that includes technical training (management, communication, diplomacy, anti-corruption strategies) and specific case studies on best practice locations. It would also be necessary to monitor and evaluate the effectiveness of existing training programmes.

7. *Improve the efficiency of local tax practices:* In order to create a more efficient tax service and greater certainty for taxpayers, the government should professionalize the tax service. National and local governments need to work together to professionalize the tax collection service. The introduction of proper facilities and training can motivate local staff, whilst strict sanctions for corruption can change mindsets about acceptable professional behaviour. Also, the government should eliminate tax 'negotiation' by publicizing a shift towards a non-negotiated tax assessment accompanied by random, strict tax audits with strong penalties attached. A mechanism for appealing assessments to a tax court would be an essential part of this reform.

8. *Reduce the cost and time associated with obtaining business licences:* To develop One Stop Shops, but setting targets and aligning the incentives to the staff who achieve those targets, and also continuously monitoring the performance. Similarly, publicizing fixed low rates for obtaining business licences and putting in place systems to allow any interested party to easily access official information (e.g., through posters, booklets, Web sites, etc.) are valuable components of an overall strategy for improving the services offered to local businesses.

9. *Ensure that regional legislation is consistent with national legislation:* Three measures that might help the government are:

- Improving the resources devoted nationally to reviewing *Perdas* to ensure that all *Perdas* which are submitted are reviewed in a timely fashion.
- Applying legislated sanctions for the persistent application of inconsistent *Perdas*.
- Providing an easy mechanism for the submission of new *Perdas* and incentives for timely submission (and penalties for non-submission).

Such measures would ensure much higher compliance with the regulatory review of *Perdas* and improved adherence to the law when *Perdas* are deemed inconsistent with national legislation.

10. *Encourage greater involvement of civil society organizations, including the private sector, in local economic policy-making:* There are ways of encouraging greater civil society participation in local economic policy-making in order to pursue policies that actually reflect the wishes of the population, and to discourage corruption and expose inefficiency to put pressure on local administrations to improve performance. These include:

- Extending ‘integrity pacts’. Such efforts are essential, particularly in public procurement, in order to break the ‘iron triangle’ of corruption between local executives, civil servants and private contractors.
- Breaking the debt trap of civil servants. In many administrations civil servants have to pay substantial sums for their positions. To do so they often borrow money, providing a strong incentive for them to use their public position to recover their investment. Complete transparency in recruitment procedures and penalties for those caught making and receiving such payments can help to eliminate this practice and ensure that public servants devote their energies to serving the public.

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# Creating space for private sector financing in forestry – removing constraints to investment: A New Zealand case study

Mary Clarke<sup>1</sup>

## Introduction

New Zealand's forestry and wood-processing sectors are of considerable benefit to the country's economy, environment and society:

- Economy: Forestry is New Zealand's third latest export earner and is a major regional employer.
- Environment: New Zealand's forests provide for cleaner rivers, reduce erosion, sequester carbon and are a haven for wildlife.
- Society: Forests are an important recreational land use in New Zealand.

The future triple bottom line contribution of forestry and wood processing to New Zealand, and whether this will be sustained over the longer term, depends on how opportunities are embraced and challenges overcome.

The New Zealand Ministry of Agriculture and Forestry (MAF) has articulated its vision for the sectors' future. It has two points of focus: first that the sectors are innovative and profitable; second that they take full advantage of the increasing demand for wood and environmental services from sustainably managed forests (MAF 2008a).

If current trends extend into the future, New Zealand will fail to realize this vision: the rate of new planting and replanting has declined; the available wood resource is not being fully utilized (likewise the non-wood properties of the planted estate); and there has been no significant increase in productivity over the last decade.

To turn this vision into a future reality requires investment – investment in new planting, replanting, the wood and non-wood properties of the planted forests, new and existing wood-processing facilities and in people, processes and technologies. This paper is narrowly focused on creating space for investment in forest growing and wood processing.

In contrast to many countries of Asia and the Pacific, the majority of New Zealand's planted forests are owned by the private, not the public, sector. Any future investment in forest growing, management and processing will be determined by private interests. The role of the government in this future is to create the enabling environment that facilitates private initiative.

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<sup>1</sup> Private Consultant.

However, there is limited understanding of what makes private sector investment in forestry and wood processing attractive. It is not immediately clear what constitutes an ‘enabling environment’. Nor is it clear what parameters investors assess to determine whether to put their money into forestry and/or wood processing.

This is one of a series of case studies that has been commissioned by the Bagong Pagasa Foundation. Here an attempt is made to answer such questions as they relate to New Zealand forestry and wood processing.

Specifically, the following sections of this paper provide an overview of patterns of resource ownership in the forest and wood-processing sectors, and the key players in the same; identify the broad constraints that are holding back private sector investments, including legislative and non-legislative constraints; and suggest viable means of removing or reducing these constraints.

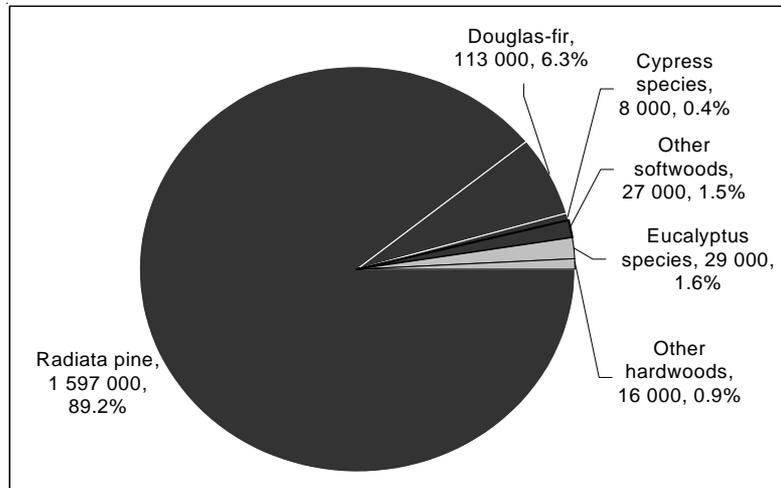
The approach taken in this study is to explore the demand-side influences, supply-side considerations and legislative constraints that impact investment decisions and legislative constraints. On the demand side these include fluctuations in the exchange rate; the slump in housing demand in domestic and several key export markets; the need to address New Zealand’s stagnating and, in some cases, shrinking share of forest product export markets; and market access issues, notably non-tariff trade measures (NTTMs). On the supply side, relevant considerations include the availability and cost of selected inputs – labour, shipping and energy – alternative uses of the land and the investment dollar, the comparative advantage of New Zealand forestry and wood processing. Legislative constraints include the recently passed emissions trading legislation and the Resource Management Act, both of which are targeted for review by the recently-elected New Zealand Government.

Insights into these influences and considerations have been informed by a review of recent and relevant literature, and by the opinions of key commentators on the New Zealand forestry and wood-processing sectors.

## **Forestry and wood-processing overview**

Before broaching the more analytical sections of this paper it is useful to have as a backdrop an appreciation of forestry and wood processing in New Zealand.

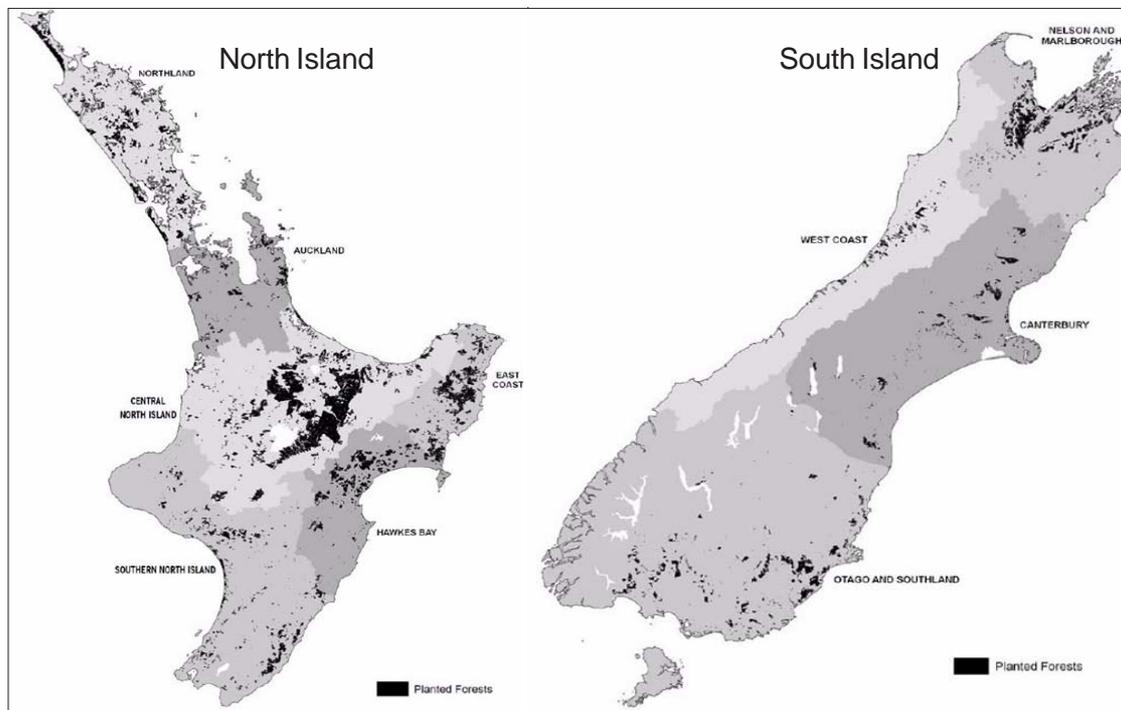
Planted forests cover 1.8 million hectares, or 7 percent of New Zealand. One species – *Radiata* pine – dominates, accounting for 1.6 million hectares, or 89 percent, of the total planted forest estate (MAF 2008c) (Figure 1).



**Figure 1. Planted forest species (hectares, share of total planted estate)**

Source: MAF (2008c).

Seventy percent of the planted forests are in the North Island, leaving 30 percent in the South Island. Planted forests are most concentrated in the Central North Island (CNI) wood supply region, which accounts for close to one-third (30 percent) of the total estate (Figure 2).



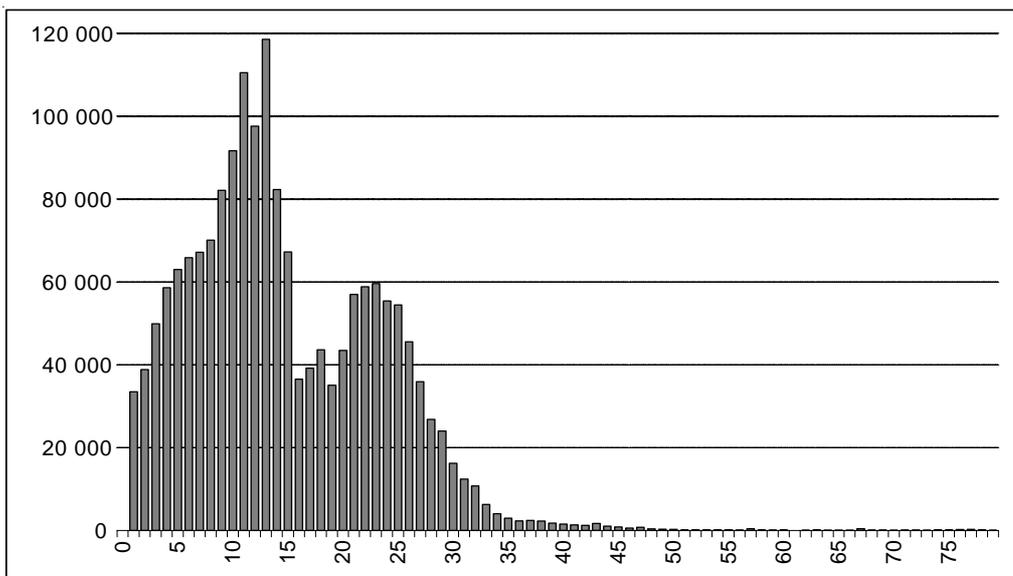
**Figure 2. Distribution of planted forests**

Source: MAF (2008c).

Figure 3 illustrates the age-class distribution of the planted forests. Very little of the forest area is planted in trees older than 32 years, reflecting the economic rotation age of *Radiata* pine, which is typically harvested at between 26 and 32 years. The areas of forest planted from the late 1970s to the mid-1980s are now approaching harvest age.

The prominent peak in the age-class distribution is for trees between nine and 15 years, reflecting the new planting boom that occurred between 1992 and 1998. Harvesting of these areas will begin from around 2020. The tailing off in new planting in more recent years is a cause for concern to some forestry commentators and is a theme picked up again in later sections of this paper.

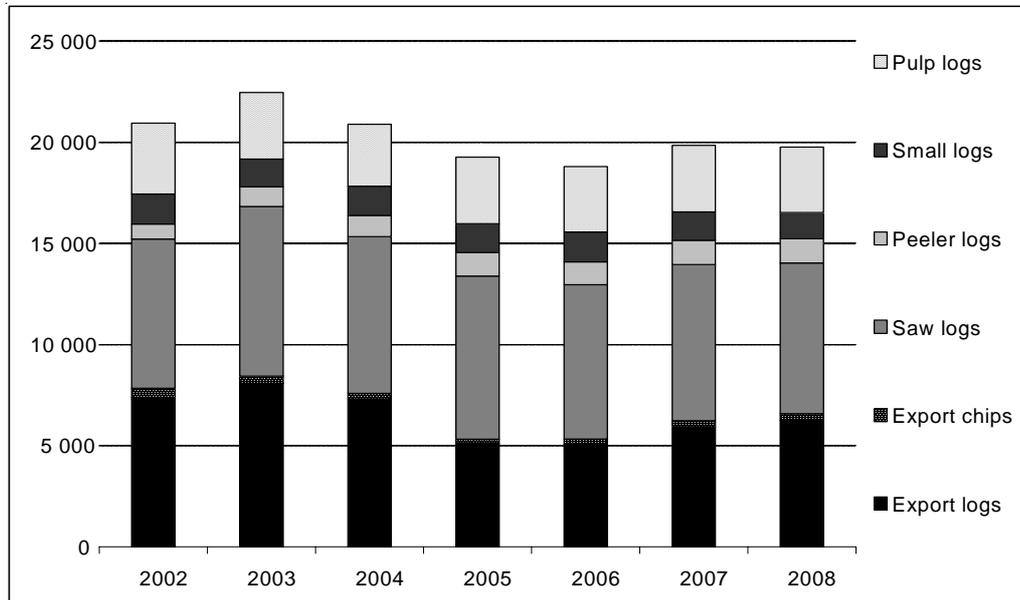
How this translates into future supplies of wood is examined later where investment opportunity is discussed. There it is learned that wood availability is picked to peak in the early 2020s at more than 60 million m<sup>3</sup>. It then levels off to a sustained availability from the forests of larger owners of around 20 million m<sup>3</sup>, plus another 2 to 7 million m<sup>3</sup> being contributed from the harvest of small forests.



**Figure 3. Age-class distribution (hectares)**

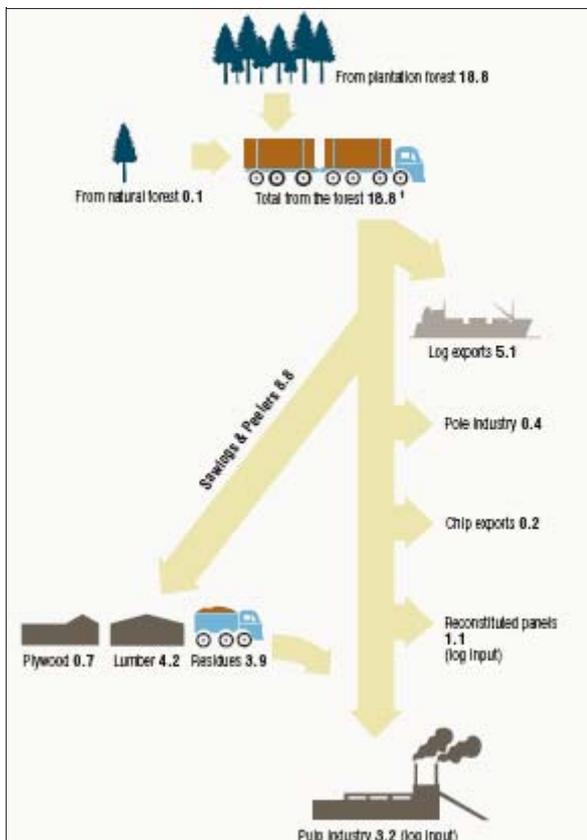
Source: MAF (2008c).

The 19 million m<sup>3</sup> of wood harvested in 2008 are less than harvest levels four and five years ago (Figure 4), as growers have decided to lengthen their rotations to provide for better quality and more desirable products in future (Horgan 2007).



**Figure 4. Roundwood removals (1 000 m<sup>3</sup>)**

Source: MAF (2007a).



Of the wood harvested, approximately one-third was exported as logs, one-third went to sawmills and plywood mills, and the final third went to the pulp, paper and reconstituted panel industries (Figure 5).

The extent to which the logs are converted into forest products, consumed domestically as either a final or intermediary product, varies by product. For example, a greater proportion of chemical pulp and fibreboard is consumed offshore than onshore, whereas the reverse is true for plywood. Table 1 details the split for selected forest products.

**Figure 5. Wood flow in the New Zealand forest industry, 2006**

Source: NZFOA (2008a).

**Table 1. Production and export of selected forest products, year ending March 2008, provisional figures**

	Production	Exports	Export share	Implied domestic consumption
Logs ('000 m <sup>3</sup> )	19 754	6 261	31.7%	13 493
Sawntimber ('000 m <sup>3</sup> )	4 433	1 773	40.0%	2 660
Pulp				
- mechanical (air-dry tonnes)	726 511	243 102	33.5%	483 409
- chemical (air-dry tonnes)	802 397	623 129	77.7%	179 268
Paper				
- newsprint (tonnes)	285 626	na	na	na
- other paper & paperboard (tonnes)	589 079	na	na	na
Panels				
- Fibreboard (tonnes)	767 288	578 962	75.5%	188 326
- Veneer	700 948	na	na	na
- Plywood (m <sup>3</sup> )	417 516	77 940	18.7%	339 576
- Particle board (m <sup>3</sup> )	242 291	118 281	48.8%	124 010

Source: MAF (2008e).

How the future supply will be distributed is heavily dependent on private sector investment. If investment is minimal, an increasing share will be exported as logs.

## **Patterns of resource ownership in the forestry and wood-processing sectors**

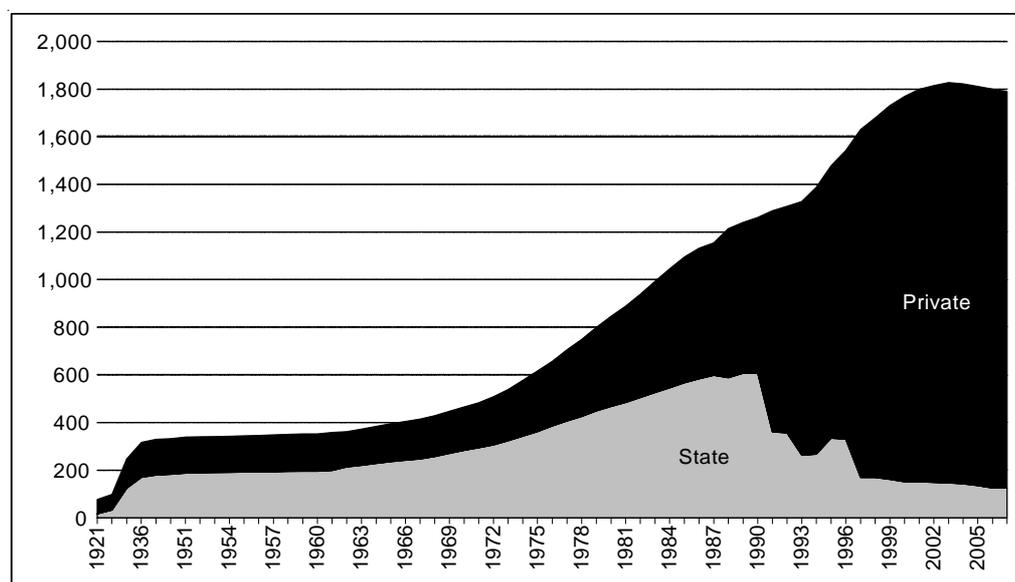
### ***Patterns of forest ownership***

Three distinct periods and patterns of forest ownership become apparent when one reflects on the history of planted forestry:

- State sector dominance.
- Rise of corporate and international players.
- Divestment of forest ownership to Timber Industry Management Organizations (TIMOs).

### ***State sector dominance***

Forestry before the late 1980s was characterized by direct involvement and dominance by the public sector. While in the Introduction, New Zealand is depicted as atypical with the private sector owning the majority of planted forests, this has not always been the case. From 1919 to April 1987, as in many other countries, the New Zealand Government's forestry operations were conducted by a single agency, the New Zealand Forest Service. Throughout much of this period the Forest Service was New Zealand's dominant planted forest owner. It also played research, policy and regulatory (e.g., biosecurity) roles. The Forest Service's proportionate ownership of planted forests peaked in the mid-1960s, when it owned almost 60 percent of the national estate (Figure 6).



**Figure 6. State vs private planted forest ownership (1 000 hectares, years ending 31 March)**

Source: MAF (2008c).

In 1987, the government announced its intention to privatize public assets including its forests. Government businesses were to be sold with the primary aim of reducing public debt. Secondary reasons were to avoid the potential for future calls for cash from business interests; to minimize the government's risk exposure in the business sector of the economy; and to enable ministers to concentrate on matters of economic and social policy.

In 1989, prior to the rounds of forest sales, which commenced in the 1990s (see below), the government owned over half (52 percent) of the then 1.2 million hectare planted forest estate. Three New Zealand based corporates – Elders Resources, Fletcher Challenge Ltd (FCL) and Carter Holt Harvey (CHH) – together accounted for 30 percent. Small private forest owners represented a mere 18 percent. Figure 7 illustrates the ownership shares.

### *Rise of corporate and international players*

The sale of the government's forestry assets progressed in a number of stages throughout the 1990s:

- In 1990, 73 000 hectares were sold through a sealed tender process to Asian interest Ernslaw One, and existing incumbent Fletcher Forests. An additional 174 000 hectares were sold later in the same year to Asian interests Juken Nissho and Wenita Forestry, and existing incumbent CHH, following negotiations which proceeded the tender process.
- Two years later, in 1992, a further 97 000 hectares of planted forests scattered throughout the country were sold to an American company, ITT Rayonier. A criterion

under which bids were assessed was the likelihood of the bidder undertaking additional downstream investment.

- The largest concentration of planted forests in the country, 188 000 hectares located in the Bay of Plenty in the North Island, plus processing plants in various locations, a nursery and a seed orchard were sold to a Central North Island Forest Partnership (CNIF), between Fletcher Challenge Forests and CITIC, a Chinese government-owned company.

(For further details on the privatization of the government's forestry assets see Brown and Valentine [1994], Clarke [1999] and Brown and Ortiz [2001].)

As a consequence of these sales and private sector transactions, by the end of the 1990s the pattern of ownership of New Zealand's planted forests was in stark contrast to what it was at the close of the previous decade. The government's stake of the now 1.5 million hectares of planted forests had shrunk to a mere 7 percent.

These comprised forests managed under Crown leases, forests in the West Coast that were subject to an environmental/commercial accord and a handful of other forests that had not been sold through the sales rounds.

In addition to taking a less direct role in forestry, the government altered its institutional arrangements, impacting its indirect influence on forestry and wood processing. Its research functions were assumed by a Crown Research Institute, enabling them to be more closely linked to sector needs. The Department of Conservation took over management of New Zealand's native forests. And the Ministry of Forestry (and latterly MAF) became responsible for the provision of policy advice and regulatory services.

As government ownership of forests decreased, private sector ownership increased. Two of the major New Zealand forest product companies – FCL and CHH – had expanded their stake in the sector, and between them accounted for more than 35 percent of the planted forests. Overseas players, from Asian countries and the United States, had entered the market. And the share of planted forests owned by smaller private sector players had increased to 27 percent, up from 18 percent in 1989.

### *Divestment of forestry assets to Timber Investment Management Organizations (TIMOs)*

Since the early 2000s forest product companies, notably ITT Rayonier, CHH, Fletcher Forests (now Tenon) and Weyerhaeuser, have divested their interests in forest operations or disaggregated their business units to separate forest operations from processing businesses. A number of factors are cited as having motivated this divestment including (FIDA, personal communication, 2006):

- Poor shareholder returns, in part due to the forests being undervalued.
- Reducing company debt arising from past acquisitions.
- In the case of the United States, changing tax entity structures to improve tax efficiency.
- More competitive log markets due to the expansion of wood availability and more diversified forest ownership.

- A change in the operational philosophy that in order to secure wood supply for processing it is necessary to own the forests (picked up again in the discussion below where the link between forest growing and wood-processing investment is discussed.)

The forestry assets of forest product companies have been acquired by international investors and institutional funds – TIMOs. TIMOs have emerged as major players in the ownership and distribution of forestry assets. By 2008, TIMOs, including Matariki Forestry Group (Matariki), Hancock Natural Resource Group (Hancock), GMO Renewable Resources (GMO) and Global Forest Partners (Global), owned around 40 percent of New Zealand’s 1.8 million hectares of plantation forests.

New Zealand’s trend towards TIMOs dates back to 2003, when the receiver to CNIFP sold the forests and related forestry assets to the Kaingaroa Timberlands Partnership. The partnership’s forestry assets are managed by GMO, a specialist forestry investment subsidiary of Boston-based Grantham Mayo Van Otterloo and Co., LLC. It manages a total New Zealand portfolio of 240 000 hectares of forests in the Bay of Plenty, Wairarapa, Hawkes Bay and the East Coast.

TIMOs Hancock and Matariki entered the New Zealand forestry scene a couple of years later. Matariki is owned by a consortium of international interests – Rayonier, AMP Capital and Deutsche Bank’s REEF Infrastructure. In 2005, Matariki purchased 94 300 hectares of forest from CHH. Matariki also purchased Rayonier’s existing forestry assets, being approximately 48 000 hectares of planted forest and 30 000 hectares of freehold land. These transactions saw the consortium become the third largest planted forest owner, by area, in New Zealand.

Hancock became the largest forest owner when, in 2006, it purchased forests from CHH. This acquisition was in addition to smaller purchases of planted forests made a year earlier. Hancock is a United States-based TIMO. It develops and manages globally diversified forestry portfolios for public and corporate pension funds, high net worth individuals and foundations and endowments.

In 2007, Global acquired Weyerhaeuser’s interest in its Nelson forestry assets. Global is an investment advisor specializing in the structuring and management of forestry investment. Headquartered in New Hampshire, it manages timber funds and separate accounts on behalf of institutional clients and qualified investors.

This trend towards TIMO ownership mimics the changing face of forestry in other countries, notably the United States. Drivers underpinning this trend include (FIDA, personal communication; Neilson 2008):

- The historically strong risk-adjusted returns of forestry investments.
- Investment diversification.
- A low correlation with other asset classes.
- Inflation protection.

A further trend evident throughout this period is the continued growth in the share of the planted forest estate by small-scale private sector interests, namely farm foresters, Maori incorporations and investment groups.

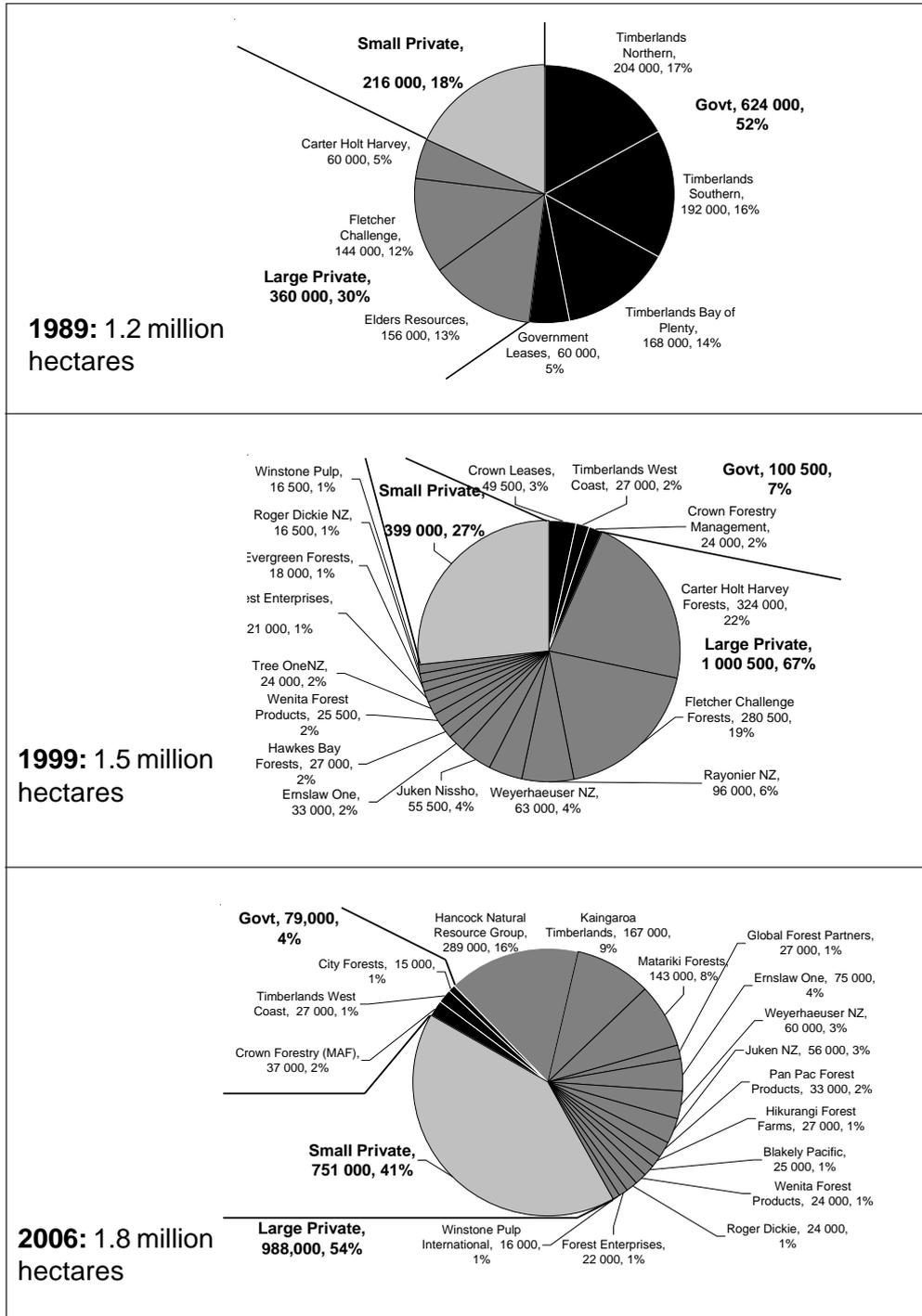


Figure 7. Forest ownership

Sources: Clarke (1999); NZFOA (2008a).

Figure 8 suggests the significance of these forest growers. In each wood supply region, without exception, the numbers of small-scale forest growers (who own less than 100 hectares each) outnumber the larger forest growers. This is particularly evident in the Nelson/Marlborough and Southern North Island (SNI) regions.

Despite their individually smallholdings, collectively the planted forest area owned by these small-scale growers ranks second only to the owners of large areas of planted forests (over 1 000 hectares). Their behaviours have a significant impact on new planting trends (which is discussed next) and, consequently, forecasts of future wood supply (which is discussed later where investment opportunity is explored).

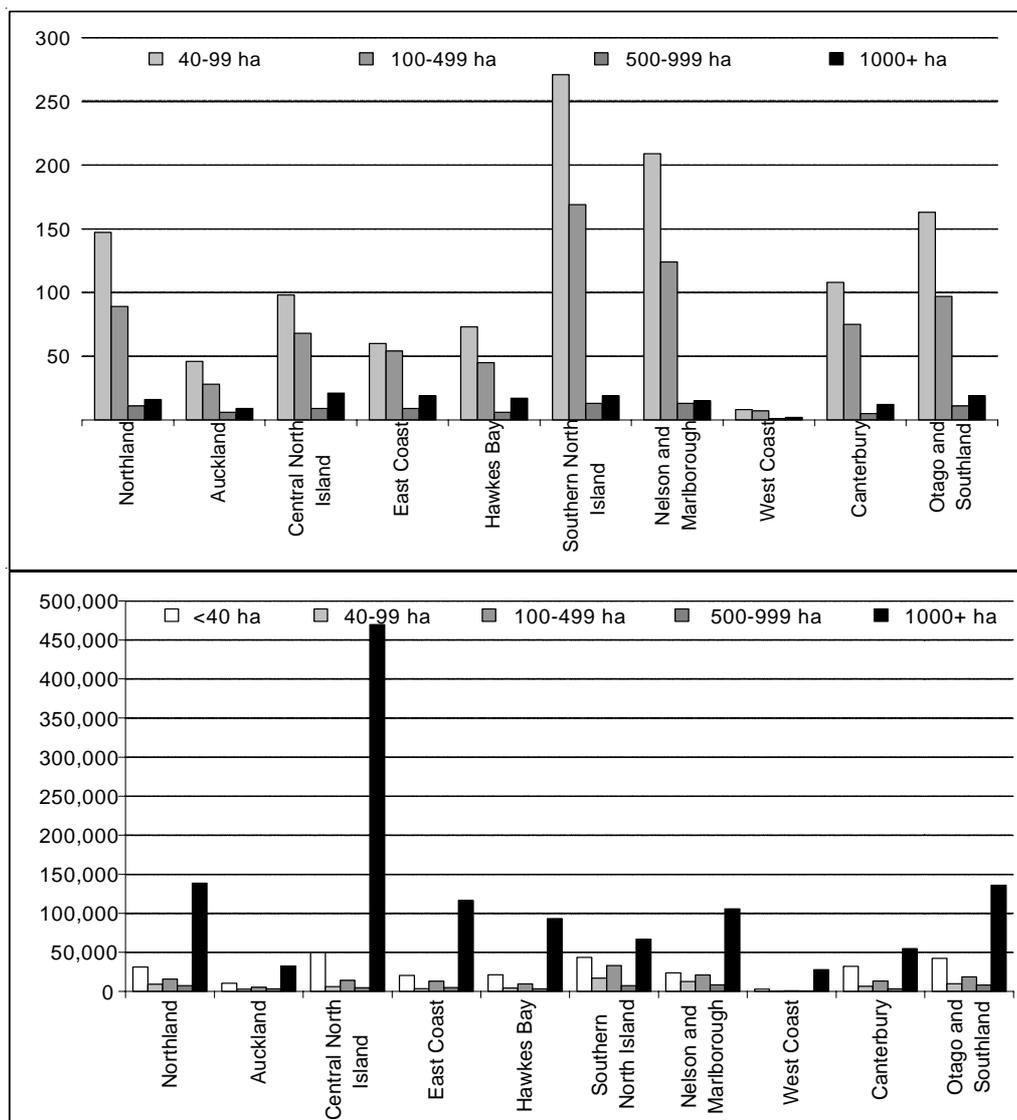


Figure 8. Location, size and number of forest owners

Source: MAF (2008c).

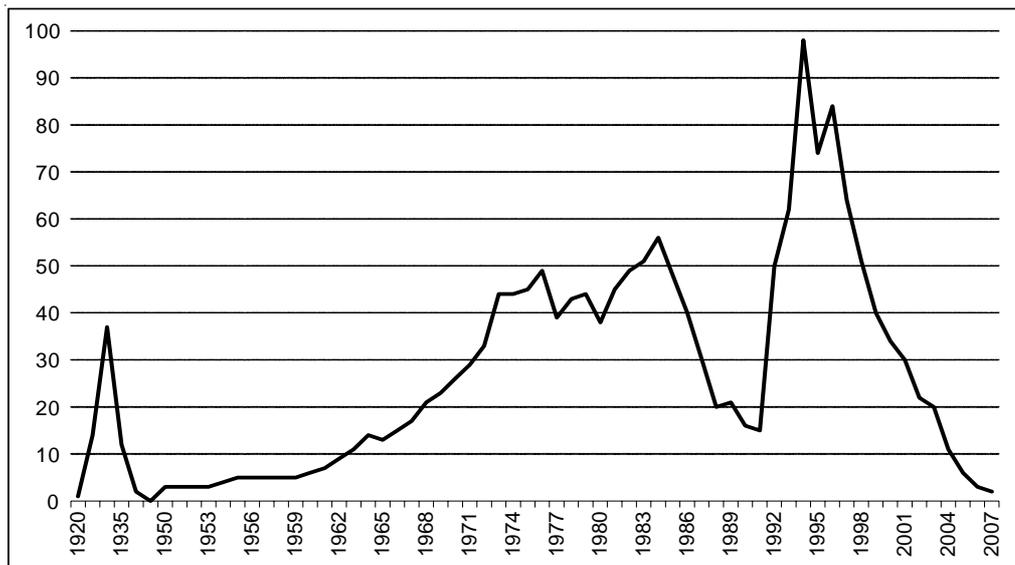
## Plantings

The discussion here moves on from the ownership of the existing planted forests changing hands over time, to the efforts made by owners to maintain and grow the forested areas. On both fronts – the rate of replanting and new planting – the story is one of decline.

Over the 2006 calendar year an estimated 37 000 hectares of forests were planted. This constituted 2 600 hectares of new planting and 34 400 hectares of replanting. Approximately 35 600 hectares of previously harvested forest remained unplanted.

From 1991 to 2004, there was an increasing replanting rate (Figure 9). This increase was in line with increasing volumes of wood being harvested over this period. Since 2004, the rate of replanting has declined.

The average new planting rate over the last three decades has been 40 000 hectares per year. Since the mid-1990s, the annual rate of new plantings of commercial forestry has been trending downward. In the period 1992 to 1998, new planting rates hit record highs – averaging 69 000 hectares per year. Since 1998, new planting has declined. At 2 000 hectares in the calendar year 2007, new planting was at its lowest level since 1950.



**Figure 9. History of new planting (1 000 hectares, years ending 31 March)**

Source: MAF (2008c).

Industry representatives (see, for example, NZFOA 2008b), in commenting on these trends, have suggested that they should be a wake-up call to policy-makers.

They posit a number of reasons for the trends, including:

- The improved returns to other land uses, notably sheep and dairy.
- A concern that by replanting trees investors may lock themselves and their land into trees for future time periods.
- The reduction in the actual harvest (in the order of 10 percent), as growers decided to lengthen their rotations to provide for a better quality and more desirable product in future (refer to the earlier discussion where the sector is overviewed).

These and other investment determinants are explored in latter parts of this paper. To address at least the first two determinants cogent government strategies have been called for. The suggestion is that climate change policies and regional and district plans have discriminated against forestry relative to other land uses (NZFOA 2008b).

The economic, environmental and social importance of forestry is stressed as justification for the government taking corrective action (see Introduction).

### ***Link between forest ownership and wood-processing investment***

When the government sold its forestry assets in the late 1990s, it was argued that rationalization of state forestry assets would result in a more efficient, internationally competitive sector. Its forests were dispersed throughout the country and had been established to meet objectives other than the purely commercial aim of profit maximization. A particular concern was the need to provide security of supply to processors in order to attract new investment into value-adding forestry industries.

The sale of forests to enable processors to integrate supplier functions into their operations was seen as a long-term optimal mechanism to achieve this end.

The forest ownership changes of recent times gives cause to question the assumption that it is necessary to secure wood to supply processing operations by owning the forests. The large forest product companies have divested their interests in forest operations or disaggregated their business units to separate forest operations from processing businesses. Their forestry assets have been acquired by TIMOs, who now dominate the forest-growing sector (see above discussion). This new dynamic, however, is not without its implications for the supply of wood to the wood-processing sector.

The institutional investment management strategies of TIMOs have implications for the management and supply of wood from their forests. These investors seek global diversification in their forest ownership as a way of reducing the impact of regional changes in supply and demand, by enabling the opportunity to sell when prices are high in one region and delay harvest in regions where prices are low. This is likely to increase the price responsiveness of forest owners to demand shifts, increasing the volatility of wood prices.

The overseas experience is that the shorter investment period (ten to 15 years) of TIMOs and the focus on returns over the lifetime of the investment have led to more rapid turnover in forest ownership in locations where TIMOs have become prominent (for example, in the South of the United States). This has a potentially negative impact on the stability of forest inventory and supply. The focus on returns has also led to changes in silvicultural intensity

and productivity, with less investment in treatments that have long-term benefits, and less expansion of plantation forest area (see above discussion on new planting). The response of forest product companies to changes in the South of the United States and Scandinavian forest ownership has been to increase the use of long-term contracting and long-term cooperative agreements as alternatives to vertical integration.

While the presence of similar arrangements is important for the viability of sawmillers, the same does not hold true for pulp and paper producers. These producers are increasingly tapping into alternative sources of fibre, including the residues from sawntimber and other solid wood production processes, recycled fibre and fibre sources from overseas producers.

The other trend in forest ownership evident since the 1990s – the increasing numbers of small-scale forest growers – brings with it its own set of challenges for processors seeking to secure or grow their supplies of wood. Even when taking the above considerations into account, the future wood supply forecast from these large-scale owners' forests has greater certainty than that forecast from the estates of small-scale owners. Between 2008 and around 2018, the forests owned by these owners are forecast to provide between 2 and 7 million m<sup>3</sup> per year – a 5 million m<sup>3</sup> range of possibilities (MAF unpublished). Leading up to 2020, significantly more volume will become available from the small-scale forest estate due to the large areas of forests established by these owners during the 1990s. Market conditions and logistical constraints (such as the availability of logging crews and transport capacity) will limit how quickly the additional wood availability from small-scale owners' forests can be harvested in the lead up to 2020 and beyond.

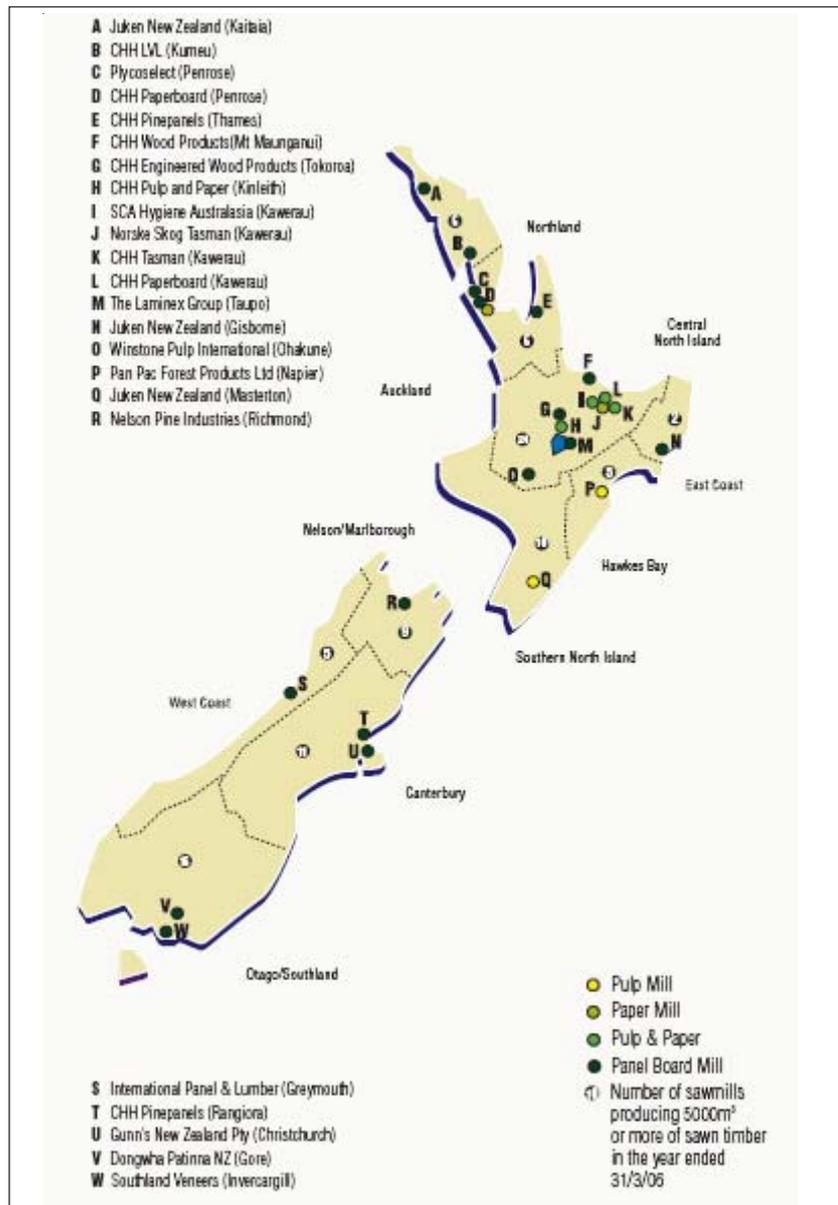
The operation of new and existing wood-processing ventures will increasingly require suitable log supply agreements to be negotiated with the owners of these small-scale forests.

Unless these owners are willing to enter into some form of resource aggregation arrangement, potential investors in wood processing may regard the prospect of securing a large and ongoing supply from such a diverse ownership as an unsurmountable constraint (MAF 2008a).

### ***Investments in wood-processing***

The wood-processing sector processes two-thirds of the annual wood harvest. The distribution of ownership in the wood-processing sector is significant to the extent that it enables the identification of potential constraints arising from wood supply issues, as well as providing an indication of potential sources and types of future investment. This section provides a brief analysis of the structure and investment history in each industry segment of the wood-processing sector.

The wood-processing industry in New Zealand comprises around 350 sawmills, eight pulp and paper mills, and 15 mills producing panel products. Figure 10 illustrates the distribution of wood processing by wood-supply region.



**Figure 10. Location of wood-processing plants by wood-supply region**

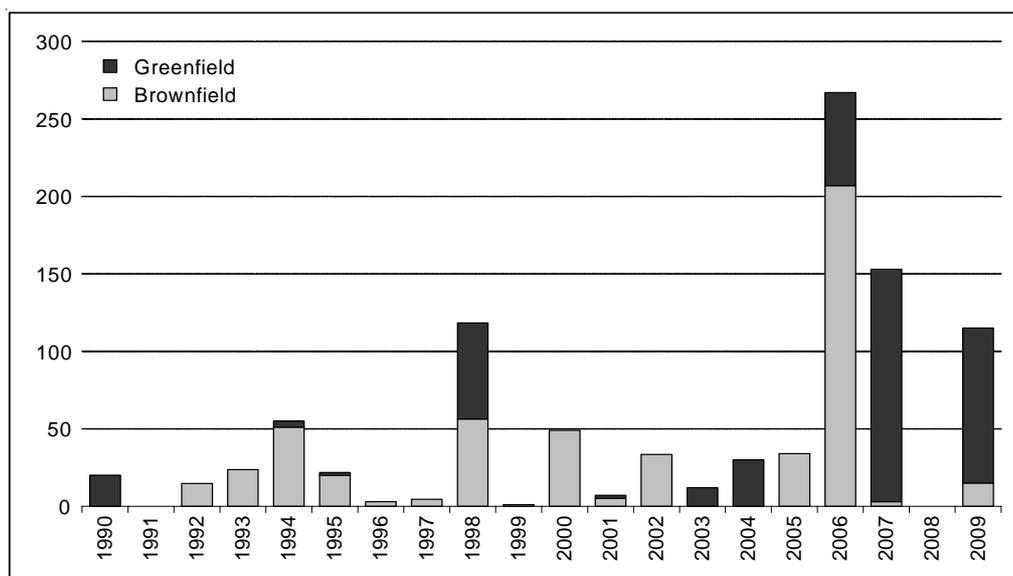
Source: NZFOA (2008a).

### *Sawntimber*

Sawntimber production is pivotal to the future of both forestry and wood processing in New Zealand. In addition to utilizing close to 9 million m<sup>3</sup> of roundwood each year, it supplies almost 4 million m<sup>3</sup> of residues to the pulp and paper and panel sectors.



The general trend in sawmilling has been toward more consolidation with fewer and larger mills, and with the bulk of investment being in Brownfield<sup>2</sup> expansions and upgrades. The trend, however, appears to be turning with the greater proportion of investment intentions announced in more recent years being Greenfield.<sup>3</sup> Figure 11 is derived from a database maintained by the MAF. Given that it is built up from announced investment intentions only, it should be interpreted with caution, as it fails to portray the full story.



**Figure 11. Announced investment intentions in sawntimber production (NZ\$ million, years of completion)**

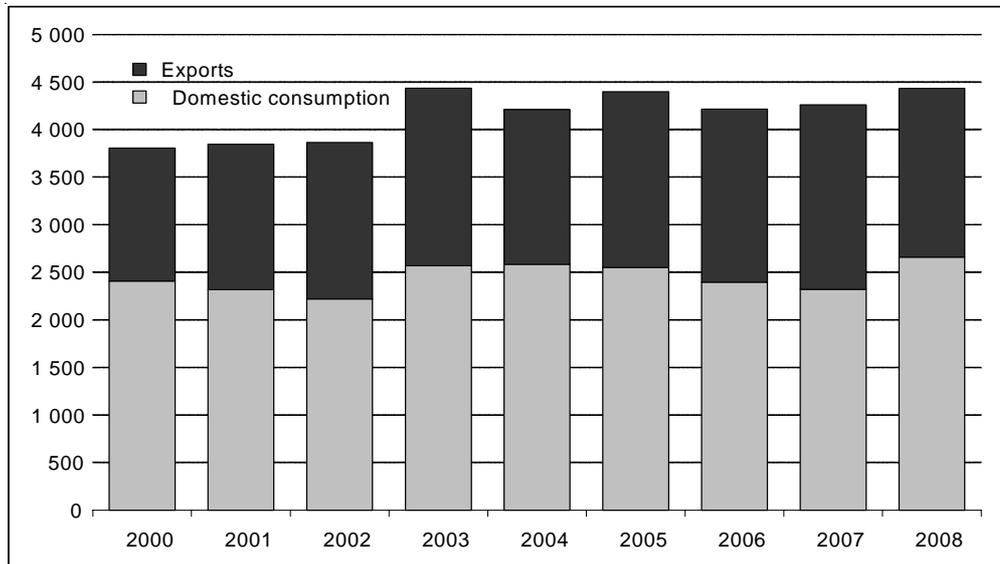
Source: MAF unpublished database.

Some sawmillers, particularly smaller operators, have been through a very difficult period, with some mill closures. Those significantly exposed to export markets are experiencing reduced margins because of external factors, such as high shipping costs, exchange rate movements and the slowdown in housing demand. The influence of these factors is revealed in the next section where the constraints to future investments are discussed.

Investments in sawmilling, modified by the mill closures, have facilitated the 16.5 percent increase in production levels, from 3.8 million m<sup>3</sup> in 2000 to 4.4 million m<sup>3</sup> in 2008. This increase has been shared between domestic and export markets, with the former consuming 60 percent of production and the latter 40 percent. Figure 12 illustrates the growth and consumption split.

<sup>2</sup> Brownfield investments are for the purpose of upgrading and/or expanding existing facilities.

<sup>3</sup> Greenfield investments are investments in new facilities.



**Figure 12. Production, consumption and export of sawntimber (1 000 m<sup>3</sup>)**

Source: MAF (2008e).

### *Pulp and paper*

The pulp and paper sector constitutes eight mills with the bulk of the capacity centred around the CNI at Kinleith and Kawarau, (both owned by CHH). Norske Skog and SCI Hygiene (tissue production) own paper plants at Kawarau while CHH has a paperboard plant at Whakatane. There are pulp mills at Karioi (Winstone Pulp), and Whirinaki (Pan Pacific Forest Industries), while in Penrose there is a small papermaking facility using recycled paper. Figure 10 places these mills on the map. Table 3 shows the approximate production capacities at each facility.

**Table 3. Estimated maximum production capacities for pulp and paper mills (air-dried tonnes)**

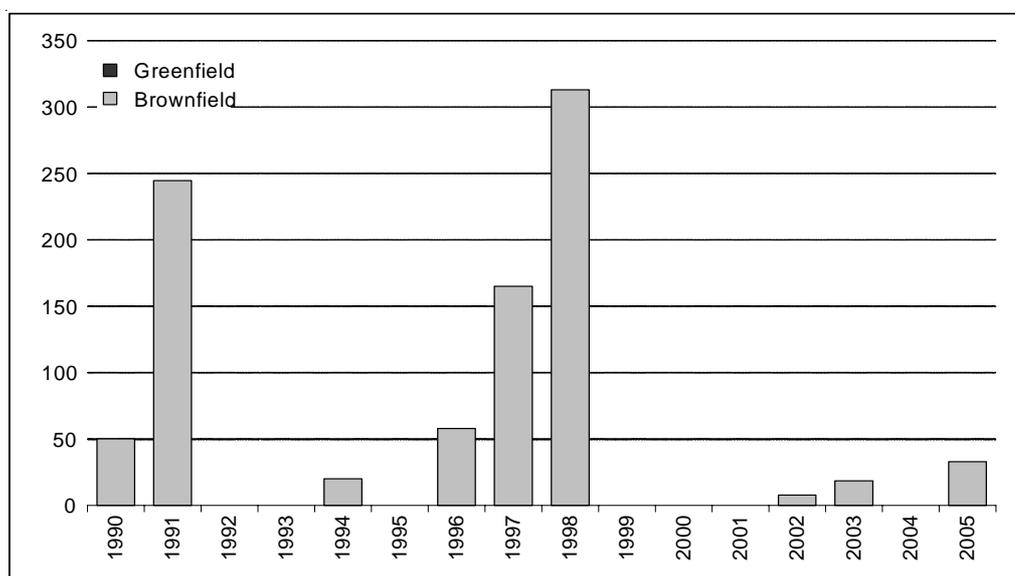
Wood supply region	Mill	Kraft pulp	Mechanical pulp	New sprint	Paper board/linerboard	Tissue
Auckland	CHH Paperboard (Penrose)				60 000 <sup>(a)</sup>	
CNI	CHH Pulp and Paper (Kinleith)	270 000			327 000	
	SCA Hygiene Australasia (Kawerau)					60 000
	Norske Skog Tasman (Kawerau)	30 000 <sup>(a)</sup>		330 000		
	CHH Tasman (Kawerau)	300 000				
	CHH Paperboard (Whakatane)				90 000	
	Winstone Pulp International (Ohakune)		160 000			
Hawkes Bay	Pan Pacific Forest Products (Whirinaki)		260 000			
	<b>Total</b>	<b>600 000</b>	<b>420 000</b>	<b>330 000</b>	<b>477 000</b>	<b>60 000</b>

Note: (a) Figures are dated and may not reflect current capacities.

As forest ownership has evolved, so too has the ownership of pulp and paper mills. The characteristic that sets pulp and paper ownership apart from forest ownership is the corporate global nature of the mill ownership as opposed to the TIMO structure that is prevalent in forest ownership. The corporate owners of many of the pulp and paper facilities are international specialists in producing and marketing their products with marketing and manufacturing bases around the globe for newsprint, tissue products and packaging products.

The profile of the pulp and paper sector is the result of transactions since the turn of the century, which have resulted in a number of significant ownership changes, some, albeit limited, Brownfield investment, and no Greenfield investment. The absence of any Greenfield investment is unsurprising given the large volume of fibre required for any new mill to be viable. As discussed in the next section of this paper, while wood supply is increasing, the growth is dispersed throughout the country, rather than in any one region. While Figure 13 is derived from a less than comprehensive database it, nevertheless, suggests the trends.

The discussion that follows overviews the transactional and investment history on a company and product basis.



**Figure 13. Announced investment intentions in pulp and paper production (NZ\$ million, years of completion)**

Source: MAF maintained unpublished database.

Considering first the production of pulp, where CHH is the largest player, CHH purchased its Kinleith mill from New Zealand Forest Products (NZFP) in the late 1980s. Since acquiring the Tasman mill, the Kinleith mill has concentrated on softwood kraft pulp and kraftliner production, with production capacities as shown in Table 3. The mill has had numerous upgrades and modifications over its lifetime.

CHH's Tasman kraft pulp mill was purchased from Norske Skog in 2001. The mill produces a range of both softwood (*Radiata*) and hardwood (*Eucalyptus*) specialty pulps, with the latter being used by manufacturers of high quality paper, tissue and building products.

In 2004 CHH Tissue sold Caxton, its tissue pulp and paper facility, to Svenska Cellulosa Aktiebolaget (SCA), a Swedish-based forest product company. The company set up SCA Hygiene Australasia to manage its Australasian assets. Two years later, SCA closed its kraft pulp mill and ceased pulping base material at Kawerau. It now sources base pulp for tissue manufacture from the domestic and international markets.

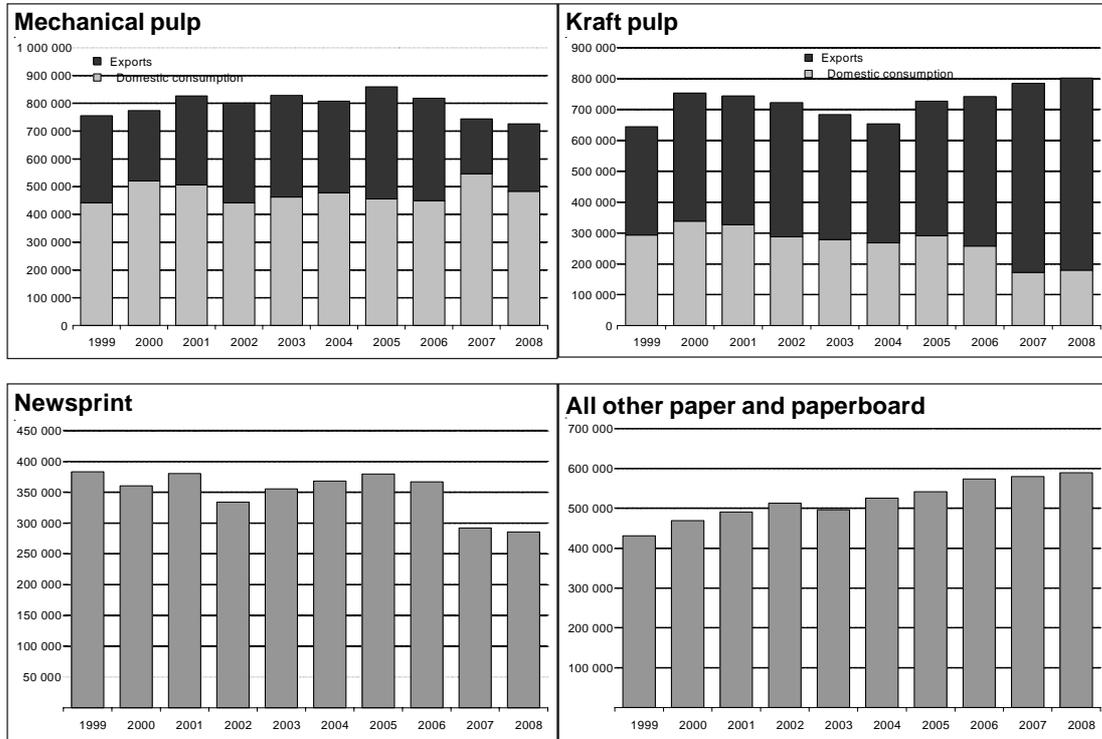
These private sector transactions and mill upgrades have had a net positive impact on kraft pulp production, which has increased each year since 2004, as shown in Figure 14. The volumes being sold overseas have increased in both absolute and relative terms. The People's Republic of China has overtaken Australia as the largest export market. Australia, however, remains a significant market; so too do Republic of Korea and Indonesia.

This market diversity is a strength that contrasts with the vulnerability of mechanical pulp producers, and their reliance on the Japanese market. The production of mechanical pulp has

shrunk, export volumes have fallen and the bulk of production is being used domestically. The two key players are Pan Pac Forest Products Limited and Winstone Pulp International. From its inception, Pan Pac's main purpose was to provide wood fibre for its shareholders' papermaking operations in Japan. Ernslaw One has purchased Winstone Pulp International, one of the few remaining integrated forestry and wood-processing companies.

Paper (other than newsprint) and paperboard production has gone from strength to strength. CHH has two mills producing paperboard; one in Penrose and the other in Whakatane. Both mills rely on recycled fibre. They are, therefore, not directly linked to primary wood fibre supplies in the Auckland and CNI wood supply regions. Its Penrose mill sources its fibre solely from recycled newsprint and paper products. Its Whakatane mill produces paperboard packaging from mechanical pulp and semi-chemical and waste paper-based pulps. This contrasts with the situation in 1939 when the mill, one of the earliest built in New Zealand, processed resources from its then owner's (NZFP's) forest plantings established in 1928.

Newsprint production, on the other hand, has slumped significantly since 2005 reflecting the struggle by Norske Skog to be competitive in the global marketplace. In 2000, Norwegian pulp and paper giant Norske Skog purchased its mechanical pulping plant and the kraft mill from Fletcher Paper. One year later (as noted above), Norske sold the kraft facility and associated linerboard machine to CHH, leaving Norske Skog as the sole producer of newsprint in New Zealand. By 2003, the combination of energy price increases, ageing mills in need of upgrades and the consequential erosion of any competitive advantage, was causing Norske to contemplate closing its New Zealand operations. Offers of financial and other assistance by the government in 2004 succeeded in keeping these plans at bay and encouraged investment in the renovation and upgrade of the paper machines. But not for long. Just one year later, Norske Skog embarked on an Australasian rationalization and upgrade programme. The Tasman Paper Machine 1 was shut down, and the production from machines 2 and 3 was boosted to 330 000 tonnes per year. The net loss in production was compensated for with the upgrade of the Norske Skog Albury Mill in Australia.

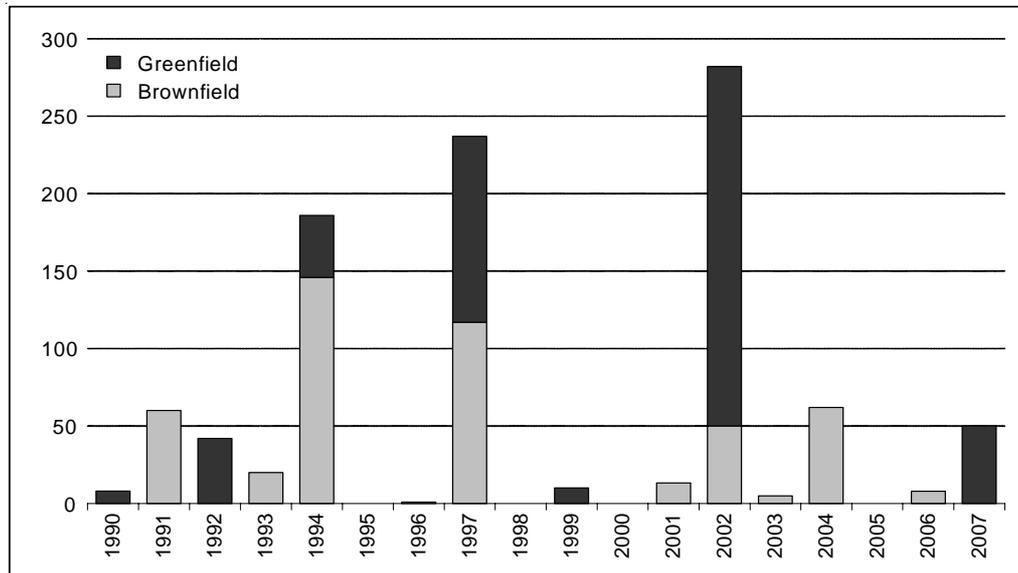


**Figure 14. Production, consumption and export of pulp and paper (air-dried tonnes)**

Source: MAF (2008e).

*Panel products*

Wood-based panels have been the growth sector of the New Zealand wood-processing sector. The significant investment activity in this industry sector is paying off in terms of rising production levels and export market growth. Figure 15 provides an indication of the extent of Brownfield and Greenfield investments. Again, these figures are indicative only and, in the particular case of panels, are not likely to reflect more recently announced investment intentions.



**Figure 15. Announced investment intentions in panel production (NZ\$ million, years of completion)**

Source: MAF unpublished database.

Fifteen plants throughout the country produce panel products (Table 4).

**Table 4. Panel mills (location and type)**

Wood Supply Region	Mill	Fibreboard	Veneer	Plywood	Particle board
Northland	Juken New Zealand (Kaitaia)	✓			
	CHH Futurebuild (Whangarei)		✓		
Auckland	The Laminex Group (Kumeu)				✓
	CHH Panels (Kopu)				✓
CNI	CHH Wood Products (Mt Maunganui)		✓	✓	
	CHH Engineered Wood Products (Tokoroa)		✓	✓	
	The Laminex Group (Taupo)				✓
East Coast	Juken New Zealand (Gisborne)		✓		
SNI	Juken New Zealand (Masterton)		✓		
Nelson/ Marlborough	Nelson Pine Industries (Richmond)	✓	✓		
West Coast	International Panel & Lumber (Greymouth)			✓	
Canterbury	CHH Pinepanels (Rangiora)	✓			
	Gunns New Zealand Pty (Christchurch)		✓		
Otago/	Dongwha Patinna NZ (Gore)	✓			✓
Southland	Southland Veneers (Invercargill)		✓		

Note: The Juken New Zealand plant in Kaitaia produces Triboard, a unique product consisting of an inner core of wood strands sandwiched between surface layers of medium density fibreboard (MDF).

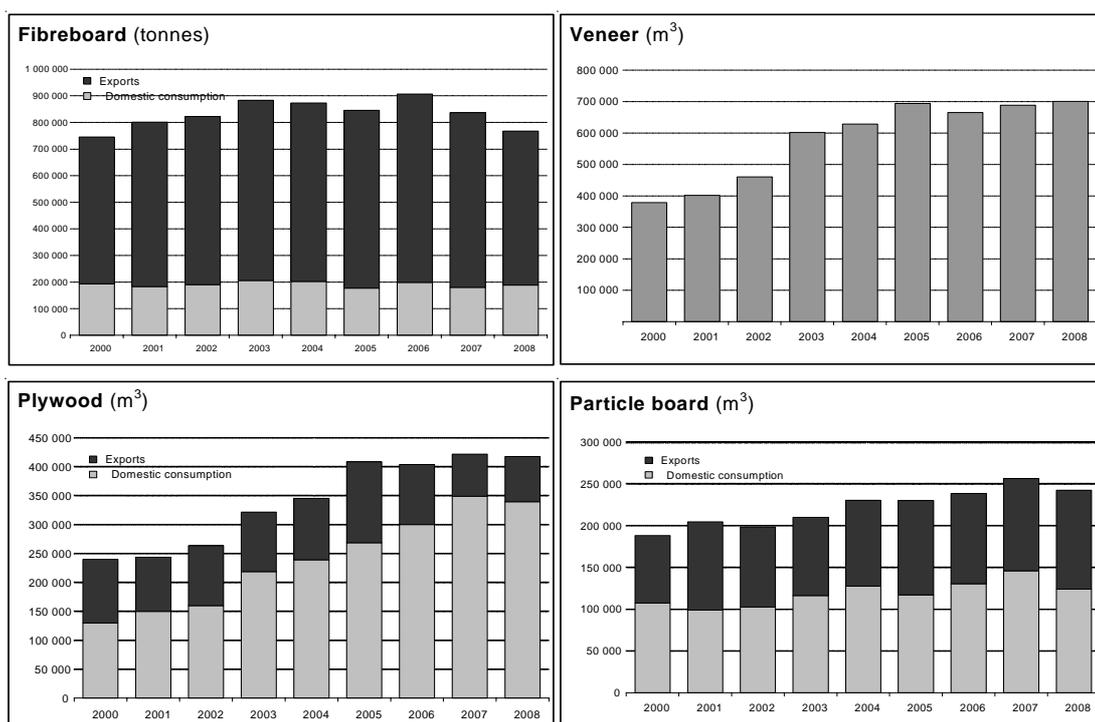
Source: MAF (2006; 2007c-e; 2008h-j).

Fibreboard is produced at four plants (Table 4). The substantial new capacity installed over the 1990s saw production levels more than triple. Nelson Pine Industries (a wholly-owned subsidiary of Sumitomo Forestry NZ Limited) installed three new lines between 1986 and 1997, making it the world's largest single-site producer of MDF. The rate of expansion has slowed and, consequently, production has as well, peaking at over 900 000 tonnes in 2006, before moderating in more recent years. Three-quarters of the output is exported, with half of what is exported being sold in Japan (Figure 16).

Plywood and veneer, notably laminated veneer lumber (or LVL) have been the main source of growth in the wood-panel sector in recent years. The production of both has close to doubled since 2000 (Figure 16). Plywood is produced at three plants, and veneer at eight.

Modern plants are operated by CHH, Juken Nissho and Nelson Pine Industries.

The growth of particle board production has been more modest but, nevertheless, positive and sustained. Of the 242 000 m<sup>3</sup> produced annually, almost half is exported (Figure 16).



**Figure 16. Production, consumption and export of panels**

Source: MAF (2008e).

### Investment opportunities

The investment opportunities in New Zealand’s forestry and wood processing are a function of the quantity and quality of the surplus wood coming on stream and the demand for the various forest products that could be produced from it.

### Wood supply

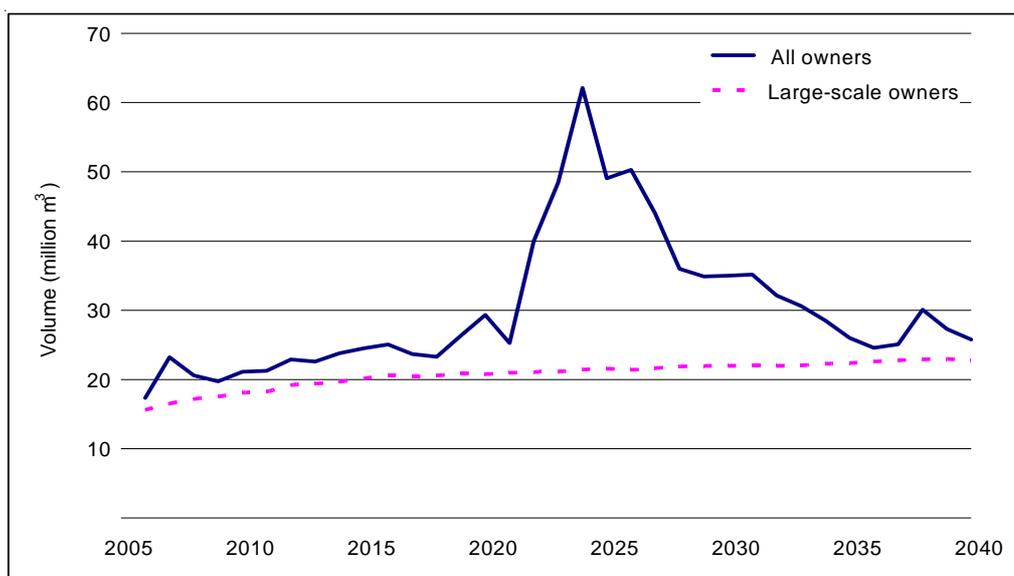
MAF has produced interim national wood availability forecasts looking out to 2040, based on a mix of completed and interim regional availability forecasts (MAF unpublished). They are supply-based, modified by the harvesting intentions of large owners. While the forecasts show the potentially available wood supply, future harvesting decisions will be driven by the

range of demand-side influences and supply-side considerations, many of which are discussed in the next section of this paper.

In the early sections of this paper, where forestry and wood processing were overviewed, it was observed that the age-class distribution of New Zealand's planted forests peaks for trees aged between nine and 15 years. This reflects the planting boom that occurred between 1992 and 1998. Harvesting of these areas will begin from around 2020. The resultant spike in wood supply is evident in the interim national forecasts, shown in Figure 17, where the annual harvest reaches more than 60 million m<sup>3</sup>.

In the later part of the forecast period (post 2030) the total harvest is projected to decline. This is in line with the age structure of the resource. The timing and extent of decrease will depend on the rate at which the 1990 forests are harvested.

The sustainable harvest level from the forests of the large owners is around 20 million m<sup>3</sup> per year. An additional 2 to 7 million m<sup>3</sup> per year is forecast between 2008 and around 2018 from the forests owned by the small-scale owners. As commented earlier in this paper, the wide range is attributed to the uncertain harvest intentions of these small owners.



**Figure 17. Interim national wood supply forecasts (million m<sup>3</sup>)**

Source: MAF (unpublished).

Unsurprisingly, given how it dominates New Zealand's planted forest estate, *Radiata* pine is expected to account for 90 percent of the future harvest.

The increasing availability of wood will be dispersed across most of the country. This contrasts with the current situation where the CNI is the dominant source of supply and, consequently, the hub of most wood-processing activity. Table 5 summarizes future expectations.

**Table 5. Supply expectations by wood-supply region**

Wood-supply region	Expectations
Northland	↑ There will be large increases in wood availability in Northland over the next decade. This is a 'new' forestry region, with relatively undeveloped forestry infrastructure and wood-processing plants.
CNI	↗ In the medium term, availability from CNI is expected to increase slightly from the current range of 7 to 9 million m <sup>3</sup> . CNI produces 45 percent of New Zealand's total harvest. This proportion is expected to decline over time, stabilizing at around 35 percent by 2018.
East Coast	↑ There will be large increases in wood availability in the East Coast over the next decade. This too is a 'new' forestry region, with relatively undeveloped forestry infrastructure and wood-processing plants.
Hawkes Bay	↗↑ In Hawkes Bay, the availability of <i>Radiata</i> pine remains relatively static until 2015. After that the harvest has the potential to increase from around 1.7 million m <sup>3</sup> to around 3 million m <sup>3</sup> around 2020. Most of the potential increase in wood availability during this period is from the small-scale owners.
SNI	↑ Increases in wood availability are expected in parts of the SNI. The majority of the increase in volume will come from small-scale owners. This region has the largest number of small-scale owners and these forests are spread out over a large geographic area.
Nelson/ Marlborough	↗↑ In Nelson, the forecasts indicate little change in wood availability over the next ten years. This contrasts with the situation in Marlborough, where there is increasing wood availability, primarily from the small-scale forest growers. After 2015, the combined Nelson/Marlborough harvest has the potential to increase from 2.3 million m <sup>3</sup> (2007) to around 3.2 to 3.5 million m <sup>3</sup> .
West Coast	↓ Based on the harvest intentions of the major owners, wood supply is projected to decrease from 233 000 m <sup>3</sup> to 196 000 m <sup>3</sup> by 2015. Beyond 2015, while there is a relatively larger forest resource in the younger age classes, this may not lead to an expanded annual harvest as it is held by small-scale forest owners whose management and harvesting intentions are less well understood, and who may not be purely commercially focused.
Canterbury	→ Wood availability in Canterbury is likely to be flat over the next ten years. Availability from the large-scale owners decreases from about 750 000 to around 500 000 m <sup>3</sup> . Increases in availability from the small-scale owners may compensate for this, but there is less certainty about the timing and volumes realized from this resource.
Otago/ Southland	↗↑ The forecasts in Otago/Southland indicate that the availability of <i>Radiata</i> pine and Douglas fir will remain relatively static over the next decade. Looking further, there are substantial increases in wood availability leading up to 2020.

Note: Table excludes the Auckland wood-supply region as information on this region was not publicly available at the time of writing. Source: MAF (2006; 2007c-e; 2008h-j; unpublished).

The increasing volumes that are surplus to domestic requirements can either be exported as logs or processed. While log exports are expected to remain a major component of the New Zealand forest product export trade, the industry's success lies in further value-added domestic processing. The processing potential is a function of the surplus volumes, as just discussed; what products the properties of the wood coming on stream are suited to, and the market potential, are discussed next.

### **Wood properties**

New Zealand's *Radiata* pine wood properties vary by wood-supply region. For instance, trees in Northland tend to be higher in wood density and with shorter internodes; making them more suitable for structural uses. In contrast, trees in Otago/Southland have lower wood density, but with longer internodes and whiter, more finely textured wood. This makes the latter more suited to clearwood production for furniture, mouldings and veneer. Other regions fall in between these two extremes with a wide range of processing opportunities available.

International forestry consultant, Jaakko Pöyry, has developed the business case for investing in value-added processing in New Zealand. Its assessment of the properties of the wood supply expected in each region, and what products that supply is suited to, are contained in Table 6.

**Table 6. Wood properties and suitability for processing by wood-supply region**

<b>Regions</b>	<b>SNI, West Coast, Canterbury, Otago/Southland</b>	<b>CNI (inland), East Coast, Hawke's Bay, Nelson/ Marlborough (inland)</b>	<b>Northland, Auckland, CNI (coastal), Nelson/ Marlborough (coastal)</b>
<b>Log category</b>	<i>Low density</i>	<i>Medium density</i>	<i>High density</i>
Small knotty logs: Thinning, top logs.	Mechanical pulp for newsprint and magazine paper, MDF.	Kraft liner (high burst and tanella strength), particle board.	Treated posts, strong paper (tear strength).
Large knotty logs: Unpruned butt and 2nd logs (a) logs with small knots (b) logs with large knots.	Clear-cutting for fingerjointed mouldings, and boards.	Industrial plywood. General utility timber (untreated) for temporary construction, packaging, pallets.	Engineered framing timber. Laminated veneer lumber stock. Construction and transmission poles. Laminated beam stock.
Large clearwood logs: Pruned butt logs.	Clear timber for panelling, moulding, furniture stock, sliced veneer.	Face veneer for plywood. All purpose clearwood uses.	Furniture stock; clear framing; rails; post and beam construction timber.

Source: Jaakko Pöyry (2003).

### **Market opportunities**

The above discussion describes in turn the quantity and quality of the potential future supply. Here, the demand side is examined: the likelihood of value-added forest products, produced in New Zealand, being sold overseas.

Throughout the various export markets a number of key opportunities are available for New Zealand products. These opportunities range from the relatively low-value materials through to secondary and tertiary value-added products.

In line with increasing quality requirements in key end-use segments, markets such as Japan are expected to become significant users of engineered wood products. The United States market is forecast to continue to present increasing opportunities for clear and remanufactured products. Markets such as China are expected to present strong opportunities for a wide range of products. Jaakko Pöyry Consulting has identified the key opportunities for New Zealand. These are captured in Table 7.

**Table 7. Product by market opportunity matrix for 2010**

	Japan	China	Rep. of Korea	India	Other Asian	USA	Aus tralia	Europe	Other	Total
Packaging	3	3	3	4	1	1	2	1	1	<b>19</b>
Temporary construction	3	4	3	4	2	1	2	1	2	<b>22</b>
Structural	2	2	1	2	2	3	3	2	2	<b>19</b>
Engineered	4	2	1	1	2	2	3	1	2	<b>18</b>
Clearwood	2	4	2	4	4	5	3	3	3	<b>30</b>
Veneer (core)	4	4	3	4	4	3	3	3	3	<b>31</b>
Veneer (face)	3	3	2	1	4	2	3	1	3	<b>22</b>
Plywood	4	3	3	2	3	3	3	2	3	<b>26</b>
LVL	4	2	1	1	2	2	3	2	2	<b>19</b>
Particle board	2	1	1	1	2	1	3	2	3	<b>16</b>
MDF	4	3	3	2	4	4	3	3	4	<b>30</b>
Remanufactured products	3	4	3	2	3	4	4	3	4	<b>30</b>
Components	3	4	2	4	3	5	4	3	4	<b>32</b>
Furniture	4	3	3	2	3	4	4	3	4	<b>30</b>
Mechanical pulp	2	4	3	3	3	1	1	1	1	<b>19</b>
<b>Total</b>	<b>47</b>	<b>46</b>	<b>34</b>	<b>37</b>	<b>42</b>	<b>41</b>	<b>44</b>	<b>31</b>	<b>41</b>	

Score: 1 is limited opportunity; 5 is strong opportunity. Source: Jaakko Pöyry (2003).

New Zealand's competitiveness in the European market is limited due to several factors. High freight distances (and hence costs) reduce New Zealand's cost competitiveness in Europe.

Several low-cost countries supplying hardwood products, such as China, are better positioned than New Zealand.

## ***Tentative conclusions***

Considering both the supply- and demand-side conditions, a number of conclusions can tentatively be reached.

- The future demand for solid wood products is skewed towards the higher value end of the spectrum.
- The opportunity is high for panels, such as LVL, remanufactured forest products, components and furniture. Northland and the Nelson/Marlborough coastal areas are well-placed to capitalize on these opportunities, given the significant increases in wood supply expected, and the properties of the wood.
- The growth in wood supply from the East Coast, Hawkes Bay and the inland areas of Nelson/Marlborough, and the properties of this wood, creates the potential to capitalize on opportunities in the production of panels, such as plywood and face veneers, and clearwood uses.
- There are limited market opportunities for low-value uses, such as packaging or structural uses.
- The greatest opportunity for residues, sourced from the future uncommitted supplies of pulp logs plus the residues from any increase in solid wood processing, is MDF. The properties of the increasing volumes of wood in SNI and Otago/Southland are suited to production of MDF.
- While the same residues could also be used for pulping, the market opportunity is limited, and the increases are too dispersed to provide sufficient material for any Greenfield investment.

Whether or not this investment potential will be realized depends on how it will be modified by demand-side influences, supply-side considerations and legislative constraints. On the demand side these include fluctuations in the exchange rate; the slump in housing demand in domestic and several key export markets; the need to address New Zealand's stagnating and, in some cases, shrinking share of forest product export markets; and market access issues, notably NTTMs. On the supply side, relevant considerations include the availability and cost of selected inputs – labour, shipping and energy – alternative uses of the land and the investment dollar and the comparative advantage of New Zealand forestry and wood processing. Legislative constraints include the emissions trading legislation and the Resource Management Act.

The next three sections of this paper discuss in turn the impacts of these influences, considerations and constraints and advise on the options to address them.

## **Demand-side influences**

### ***Exchange rate***

#### ***Impact***

The expected future return from forest products is the key determinant of investment in forestry and wood processing. The limited size and saturation of the New Zealand market,

coupled with the increasing volumes of wood coming on stream, mean that the price and quantity of forest products that can be sold overseas are what will drive future returns. As is evident in Table 8, after a year of constrained export receipts, expectations are that both the prices and quantities of forest products exported will recover and grow.

**Table 8. Forestry export prices and volumes (2005-2012)**

Year to 31 March	Actual				Forecast			
	2005	2006	2007	2008	2009	2010	2011	2012
<b>Logs and chips</b>								
FOB price (NZ\$/m <sup>3</sup> )	78	84	104	95	103	112	121	128
Export volume ('000 m <sup>3</sup> )	5 649	5 753	6 561	7 070	7 423	7 736	7 891	8 049
<b>Timber</b>								
FOB price (NZ\$/m <sup>3</sup> )	438	396	415	410	390	415	454	488
Export volume ('000 m <sup>3</sup> )	1 847	1 818	1 939	1 773	1 690	1 694	1 728	1 762
<b>Panels</b>								
FOB price (NZ\$/m <sup>3</sup> )	511	451	454	474	441	486	535	575
Export volume ('000 m <sup>3</sup> )	1 132	1 125	994	920	904	920	929	938
<b>Pulp</b>								
FOB price (NZ\$/tonne)	585	559	734	705	755	825	899	966
Export volume ('000 tonnes)	839	854	810	866	901	919	928	937
<b>Total forestry export value (NZ\$ million)</b>	<b>3 255</b>	<b>3 164</b>	<b>3 548</b>	<b>3 397</b>	<b>3 434</b>	<b>3 810</b>	<b>4 220</b>	<b>4 580</b>

Note: FOB – free on board: the value of the goods at the port of export and loaded onto a vessel for transportation out of the country of origin.

Source: MAF (2008d).

The primary driver behind these expectations is the exchange rate. The strength of the NZ dollar against the United States dollar explains much of the 4.3 percent fall in export receipts in 2008 relative to a year earlier. This arises because most forest products are sold in US dollars. So while FOB prices received for forest products increased over the year, the high value of the NZ dollar more than wiped out all of the gains.

Secondary drivers include high shipping rates and weak housing markets in domestic and export markets. (The housing slump is discussed immediately below; shipping rates are discussed in the context of supply-side considerations.)

The recovery and growth expected over the forecast period is due to expectations of a depreciation in the exchange rate. The assumed weakening of the NZ dollar is forecast to drive steady improvements in prices.

The fluctuating exchange rate is particularly deleterious to the forestry and wood-processing sectors because of the long-term investment needed in both forests and processing plants (Sherwin 2007). With the NZ dollar varying between 39 and 80 US cents over the period 2000 to

2008 (MAF 2008a), it would take a considerable leap in faith to invest in forestry on the back of the above projections.

### *Potential directions for policy and sector initiatives*

The exchange rate vulnerability of the forestry and wood-processing sectors can be addressed if:

- forest products are sold in a wider range of markets;
- greater value is added within New Zealand before exporting the final products; and
- the ‘real’ impacts of monetary policy have a greater bearing on its operation.

While the government can indirectly influence the first two options, its role *vis-à-vis* the third is more direct but, perhaps, also more questionable.

The rationale behind the first is that the more diversified the markets, the less exposed will the forestry and wood-processing sectors be to the currency fluctuations in any one market. The rationale behind the second is that by moving up the value chain, forest product exporters’ transition from being ‘price takers’ to a ‘price makers’, hence, increasing their resilience to exchange rate fluctuations. Market and product diversification is, of course, the choice of industry, not the government. Nonetheless, the government can play a role in facilitating those choices, including by:

- promoting New Zealand and its products in overseas markets;
- addressing the barriers to market access and trade; and
- supporting research and development (R&D).

The first two of these roles is discussed further below under the headers ‘Market development’ and ‘Market access’.

Regarding support for R&D, some have claimed that this is the area of public policy that has had a, if not the, major effect on forestry and wood processing in New Zealand because corporatization and privatization are the operation of monetary policy (Sherwin 2007; BERL 2008). The primary objective of New Zealand’s monetary policy operations is to maintain inflation within the range of 1 and 3 percent. Other considerations are secondary, including encouraging investment in New Zealand’s productive industries. The means for giving effect to the primary objective is to influence interest rates. BERL (2008) argues that the operation of monetary policy has led to high interest rates and, thereby, exchange rates that are generally higher than the market optimum for growth of the New Zealand economy.

There are competing schools of thought on whether this approach is the ‘best’ approach, with no shortage of argument, analysis and commentary. There are also the views that in the long run monetary policy has little impact on the ‘real’ economy, and that price stability is conducive to investment decisions. In opposition are those who argue that monetary policy is an important stimulatory tool in the government’s kit.

The New Zealand approach to monetary policy recognizes that monetary policy can have a short-term real impact. It thereby allows for a rate of inflation greater than zero, a target range (rather than a specific point), and for secondary considerations to be taken into account.

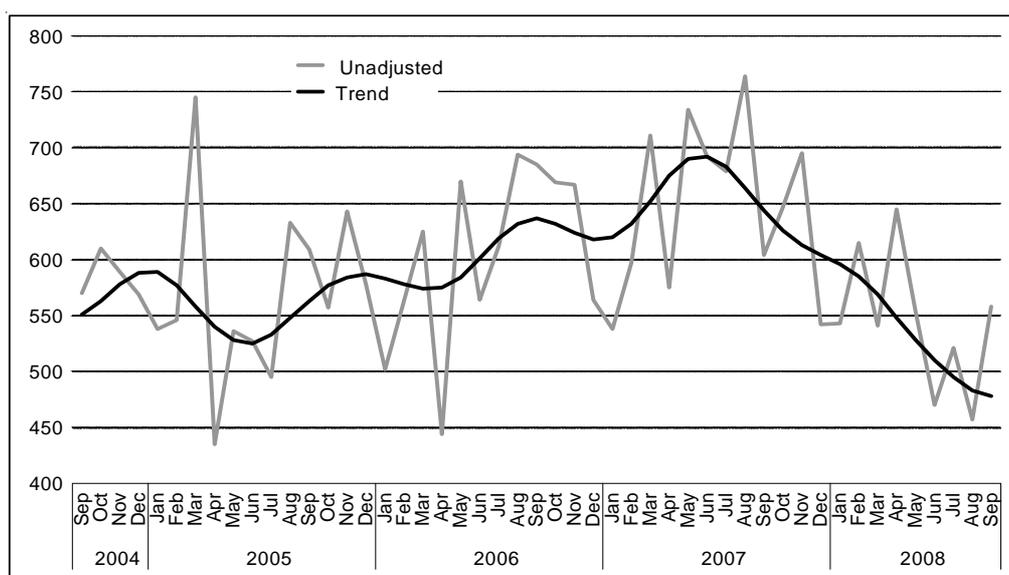
Evidence of this is the successive cutting of the Official Cash Rate (OCR)<sup>4</sup> by a cumulative 5.75 percentage points in the nine months between July 2008 and April 2009 – an unprecedented rate of reduction, made in response to the deteriorating economic conditions (RBNZ 2009).

### Housing slump

#### Impact

Housing demand slumped in the domestic and several key forest product export markets in the wake of the global financial crisis. The demand for both timber and panel products was impacted (Table 8 and MAF 2008d).

New Zealand’s housing boom has come to a screeching halt. Building consents issued in New Zealand have fallen 41 percent since mid-2007 and are at their lowest level since January 1983. Figure 18 illustrates the trends of more recent years. Forest products impacted include sawntimber, fibreboard and mouldings (MAF 2008d).



**Figure 18. Building consents (NZ\$ million)**

Source: Statistics New Zealand (2008a).

In 2008, the outlook was pessimistic. According to the Reserve Bank of New Zealand, New Zealand’s central bank, this ‘correction’ is not expected to let up for a number of years (RBNZ 2008). Tighter credit conditions, high mortgage rates, lower real income growth and rising building costs (relative to existing house prices) are what lie behind this weak outlook.

<sup>4</sup> The OCR is the rate at which banks can settle their accounts with the Reserve Bank.

Fortunately, conditions have improved more quickly than initially anticipated, with house prices rising over 2009 from their early 2009 trough. Improving conditions in the housing market are expected to be mirrored in the residential building market (RBNZ 2009).

The housing market slump impacted New Zealand's forest product export markets. In its largest sawntimber export market, the United States, housing starts began their downwards trajectory in mid-2007. In Australia, New Zealand's second largest sawntimber export market, the situation was similar. The June 2008 quarter housing data were the weakest observed since 2004 (APM 2008). Widespread falls were recorded across all of Australia's major capitals. Japanese housing starts had also been weak since towards the end of 2007, impacting the demand outlook for both sawntimber and panel products (MAF 2008d).

The good news is that as conditions have improved globally so too have the situations and outlooks of each of these markets. The rollercoaster ride, however, illustrates the vulnerability of New Zealand's forest products to conditions in major markets.

### *Potential directions for policy and sector initiatives*

The credit pressures that characterize the global financial crisis have meant that the interest rates faced by households were higher than would otherwise be the case, thereby impacting housing demand in the domestic and export markets overviewed above.

In New Zealand, this was reflected in the higher cost of funds faced by lenders relative to the OCR. To counteract expectations of weakness in the housing market the Reserve Bank responded by reducing the OCR. The central banks of other countries, such as Australia, similarly eased their monetary policy settings. The improving situations and outlooks domestically and in export markets suggest the success of these adjustments.

This, however, is only part of the solution. Longer term resilience from the vagaries of conditions in a handful of markets suggests the criticality of initiatives to develop existing and new markets.

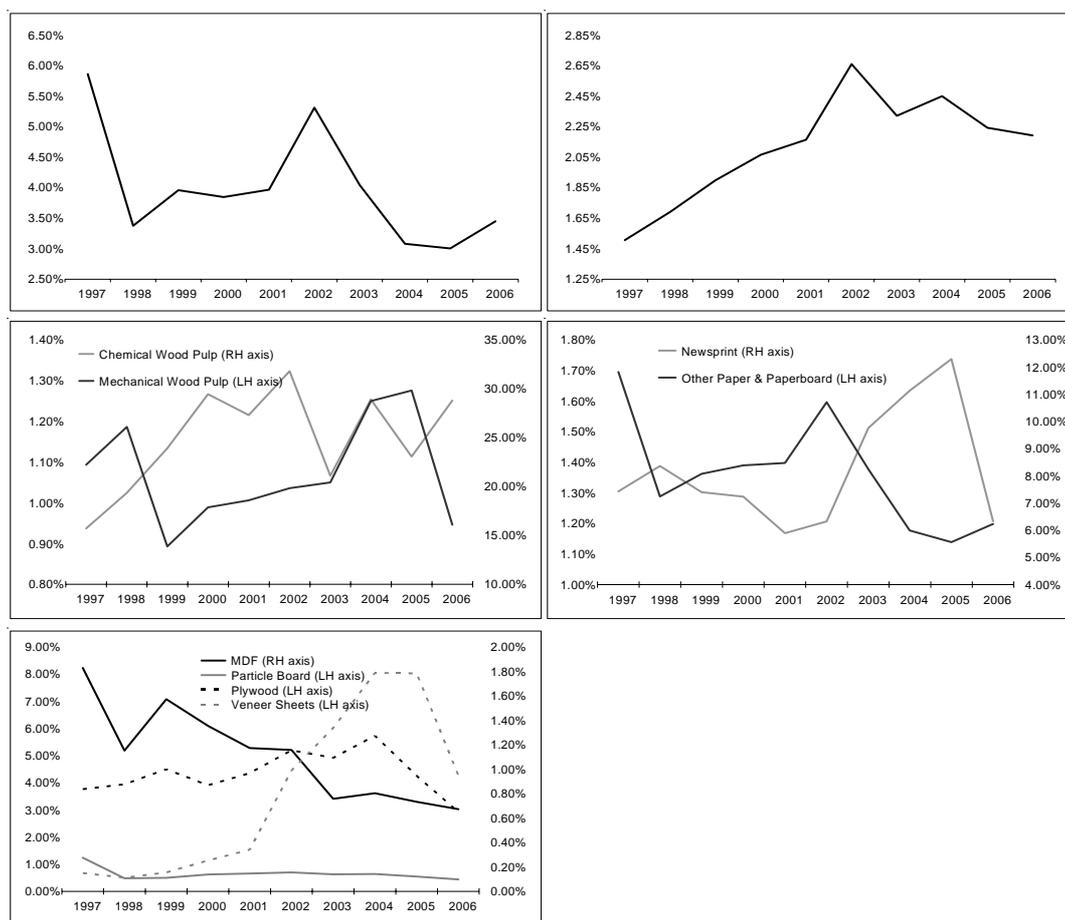
## **Market development**

### *Impact*

While some of the future growth in forest products surplus to domestic requirements may be absorbed by the expansion of export markets as their populations grow, economies develop, and the trend towards urbanization continues (MAF 2008a), it would be a dangerous strategy to rely solely on this growth. As just evidenced, the downturn in global economic conditions carried with it the risk of an easing in the global demand for forest products. The full potential for New Zealand's forestry and wood processing will only be realized if the sectors increase their share of the global trade. That means increasing its share in current export markets and developing new markets.

Given this context, the current situation (as shown in Figure 19) provides little cause for celebration:

- **Logs:** Since 1997, New Zealand's share of the global trade in coniferous industrial roundwood has close to halved.
- **Sawntimber:** New Zealand exports of sawntimber have stagnated at around 2 percent of the global trade.
- **Pulp:** Having recently commanded close to 30 percent of the global trade in mechanical pulp, New Zealand's export share has close to halved. New Zealand exports of chemical pulp have stagnated at around 1 percent of the global trade.
- **Paper:** New Zealand exports of newsprint have similarly stagnated at around 1 percent of the global trade. Having recently commanded close to 12 percent of the global trade in other paper and paperboard, New Zealand's export share has dropped to around half this figure.
- **Panels:** During the late 1980s through to the mid-1990s New Zealand increased its share of global exports of MDF. In more recent years, New Zealand has lost significant ground with the New Zealand export share slipping from more than 8 percent to around just 3 percent.



**Figure 19. New Zealand's share of global forest product exports: value of New Zealand exports relative to world exports**

Source: FAOSTAT.

Contributing to these trends is the exposure of New Zealand's forestry and wood-processing sectors to the economic conditions and consequent fluctuations in demands from their current limited number of significant export markets for forest products. In 2006/2007, only five countries (Australia, Japan, China, Republic of Korea and the United States) imported more than NZ\$100 million of forest products from New Zealand (MAF 2008a). Exports of products such as paper and paperboard, fibreboard and other panel products are heavily focused on one country.

The other contributing factors of cost competitiveness and productivity are discussed in the next section of this paper where supply-side considerations are reviewed.

### *Potential directions for policy and sector initiatives*

The potential to increase future returns should provide sufficient incentive for players in the forestry and wood-processing sectors to individually and collectively seek to develop export markets and become more cost competitive in those markets. Cost competitiveness issues are discussed below in the context of the supply-side considerations. Unless shipping costs are addressed, New Zealand will continue to find it difficult to expand export markets beyond the Asia-Pacific region.

The Forest and Wood Products Industry Strategic Plan identifies a number of market development initiatives for collective pursuit, including:

- sharing the market intelligence of individual companies on trends, opportunities and competitive activities in key overseas markets, for the good of the industry;
- tapping customer preference for environmentally-friendly and sustainable forest products by raising the awareness of the environmental benefits of timber-based products over the alternatives, promotional campaigns and certification; and
- exploring the potential for the use of the NZ wood brand as a quality mark.

The government can assist these efforts through initiatives that complement and crowd in (not out) individual and collective action. An example of this would be generic promotional efforts that communicate the quality of New Zealand exports.

### **Certification**

#### *Impact*

As markets for forest products have grown, so too has the environmental consciousness of the customers of these products. Customers are increasingly requiring that forest products are produced from wood fibre from sustainable forests. This behaviour has grown since a move was initiated by UK retail chains some years ago.

### *Potential directions for policy and sector initiatives*

A subset of the market development initiatives mentioned above is the demand for, and trend towards, certification. The potential for markets or distributors to decline non-certified products has led to many wood processors buying logs only from Forest Stewardship Council

(FSC) certified forests. These processors believe that the demand from customers for certification will grow over future years. FSC certification indicates that products have come from forests managed according to FSC principles. These include requirements concerning sustainable harvest; protection of soil resources, biodiversity and the livelihood of forest communities; and restriction in use of pesticides and genetically modified organisms. FSC chain-of-custody certification indicates that a robust system is in place for tracking timber from forest of origin to consumer.

This is a market-based solution to the preferences of customers. There is no call for the government to intervene.

### **Market access**

#### *Impact*

A prerequisite to developing markets for New Zealand forest products is having open access to those markets.

While global trade discussions continue to be troublesome, the successful negotiation of bilateral and regional trade agreements means that tariff barriers are less of a restraint on trade than in the past. For instance, in 2008, New Zealand became the first developed country to sign a free trade agreement with China. The agreement is a boon for forestry and wood-processing as it binds existing favourable conditions *vis-à-vis* some forest products and secures the elimination of tariffs on a limited number of others.

Of greater concern are non-tariff trade measures (NTTMs), which are prolific in the forest product trade. The claimed motivation for NTTMs is changing from economic to environmental. Widely encountered NTTMs that have significant trade impacts are:

- Traditional NTTMs: Logging bans, restrictions on the export of unprocessed material and quotas are significant in Indonesia, Malaysia, Thailand, the United States and Canada.
- Customs and entry procedures: These are an issue for some products and countries, as are phytosanitary regulations.
- Illegal activities: Often the result or consequence of some NTTMs, these are distorting market prices (downwards) and trade.
- Afforestation incentives: Most countries provide some form of incentive for afforestation.
- Restrictive standards and acceptance routes: Building costs and standards can be particularly restrictive, such as the prescriptive nature of the Japanese Agricultural Standards.

(FIDA 2006)

#### *Potential directions for policy and sector initiatives*

New Zealand trade officials and representative organizations from the forestry and wood-processing sectors are working in partnership to ensure markets remain open and NTTMs are minimized. Their efforts are supported by the government's Trade Access Support Programme (TASP). This programme funds practical efforts to break down barriers that may be

constraining New Zealand's exports of goods and services. In the specific case of forestry and wood processing this partnership approach is facilitating:

- Effective government-to-government influence by ensuring that the New Zealand Government's efforts are informed and directed towards the most pressing issues.
- Pan industry positions are being developed on those issues, such as the illegal and unsustainable wood products.
- Industry engagement in the more technically-based negotiations, such as the efforts of the international standard-setting bodies to set standards and procedures.
- The government's efforts to reassure overseas markets of the quality of New Zealand forest products.
- Research into the market opportunities for forest product exporters and the barriers they face.

The Forest and Wood Products Industry Strategic Plan, 2006-2021 (Woodco 2008) supports the continuance of this partnership approach and a dynamic focusing of effort.

## **Supply-side considerations<sup>5</sup>**

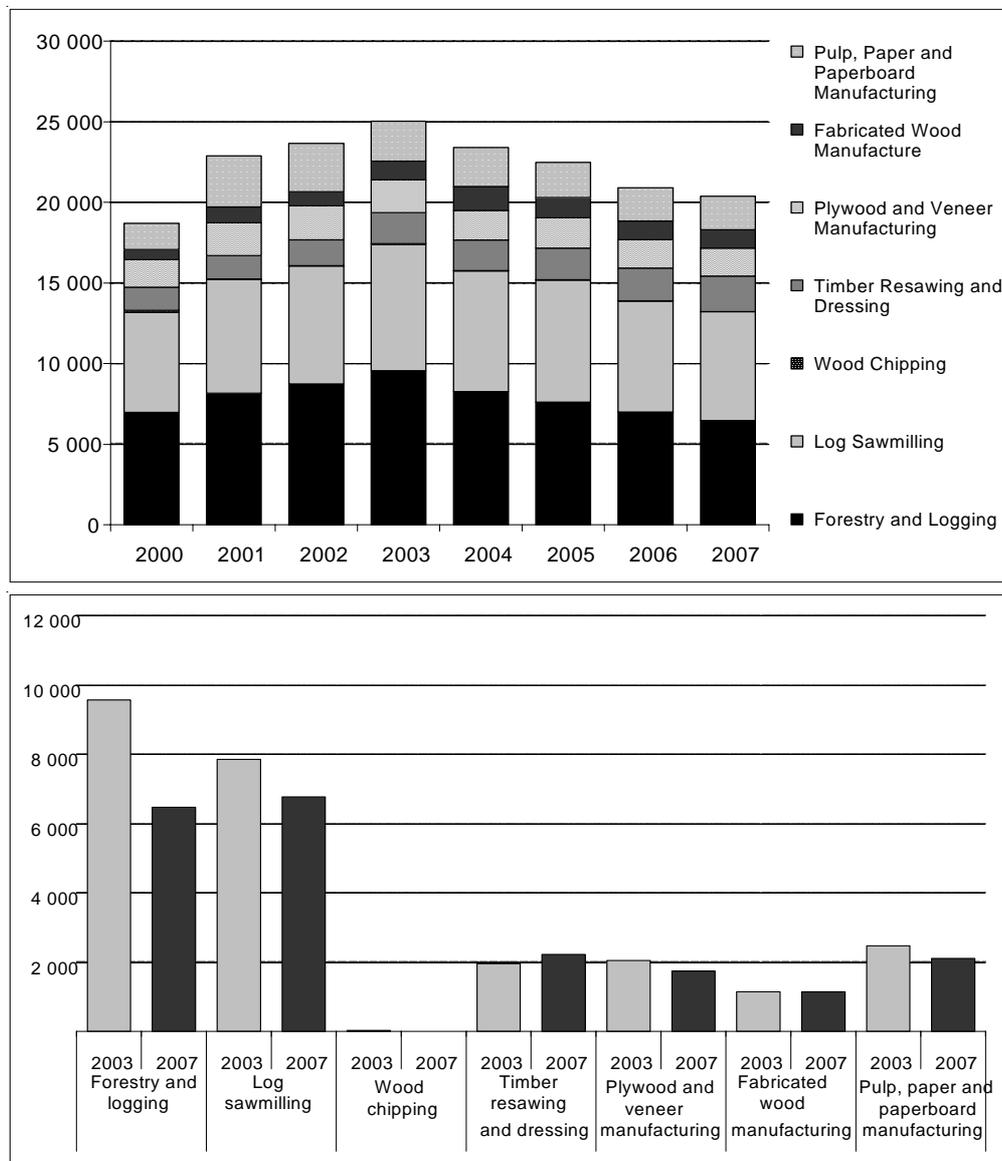
### ***Labour***

#### ***Impact***

Employment in forestry and wood processing has been in decline since 2003 (Figure 20). In 2007, the sectors provided jobs for around 20 000 persons in New Zealand, more than 5 000 less than a mere five years earlier. The declines have been experienced in most industry segments and are particularly marked in forestry and logging, and sawmilling (Figure 20).

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<sup>5</sup> Road and rail infrastructure and costs are not discussed under this heading as they are not a consideration of similar magnitude to the others discussed here.



**Figure 20. Employment in forestry and first stage processing. Number of full-time equivalent persons engaged as of mid-February**

Source: MAF (2007b).

This situation will need to turn around if the increasing volumes of wood becoming available are to be harvested and processed domestically. BERL (2008) has estimated the number of persons that would need to be engaged: between 2007 and 2011 the sector will each year need to find persons to fill 4 000 to 5 000 jobs, with labour demand climbing over the forecast period. This is the sum of some 600 to 1 000 new jobs created within the sectors each year, plus annual turnover of around 4 000 employees. Table 9 records BERL's projections.

**Table 9. Projected additions to employment 2006-2011 (years ending March)**

Additions needed to employment	Base year 2006	Projected				
		2007	2008	2009	2010	2011
Forestry and harvesting	8 000	1 720	1 920	1 700	1 760	1 850
Solid wood	7 500	945	1 086	926	926	1 147
Pulp	1 200	8	58	58	58	58
Paper	700	-59	31	31	31	21
Panel products	2 000	53	260	167	260	244
Furniture	5 700	285	285	471	479	488
Other forestry products	9 400	940	940	1 354	1 391	1 429
Total additions to employment	34 500	3 892	4 580	4 706	4 916	5 237

Source: BERL (2008).

The growth in labour demand will be in all industry segments (Table 9) and in most wood-supply regions. However, it will differ on a firm-by-firm basis. The projections have been informed by a comprehensive industry survey. Although 51 percent of firms surveyed said business plans remained at status quo for the next five years, 37 percent said they would expand, and only 12 percent said they would contract. The main areas for expansion were larger solid wood and furniture firms in Auckland, CNI and Otago/Southland. Those contracting were mainly the smaller firms in silviculture and logging in most regions (except CNI and Auckland).

At least as important as the quantity of expected labour demand is the skills sets of future employees. The projected numbers of new employees assume no productivity increase. If persons engaged are more highly skilled and consequently more productive, then the numbers of persons required will be less. With a 10 percent productivity increase only the turnover numbers are required.

The main skill requirements of the forestry and wood-processing sectors are in the trade and technical (for example, machine operator) areas. As technology advances many firms expect that they will require higher skills. There is also a growing requirement for 'soft' skills (e.g., life skills, people skills and leadership).

A number of considerations constrain the ability of the forestry and wood-processing sectors to attract and retain skilled staff. The first is the shortage of skilled people (regionally and nationally). An earlier (than the BERL) training-needs analysis undertaken in 2003/2004 by Forme Consultancy identified the shortage of skilled labour as having the most significant impact on future employment in the industry (MAF 2006). Second, is that the forestry and wood-processing sectors have a poor image as a prospective employer (Brown and Ortiz 2001). Third, is the ability of the sector to pay competitive wages. As a consequence, the forestry and wood-processing sectors are forced to recruit from the lower echelons of the labour pool. According to the 2006 New Zealand Census, 35 percent of people in the forestry and wood-processing sectors had no qualifications and 70 percent were low skilled (with no more than a basic high school equivalent level education). This situation will need to be addressed if future demand for skilled labour is to be realized.

### *Potential directions for policy and sector initiatives*

The above discussion above suggests the importance of:

- lifting the profile of the forestry and wood-processing sectors and promoting careers within those sectors;
- future planning to identify and address skill requirements and gaps within the sectors; and
- better retention strategies.

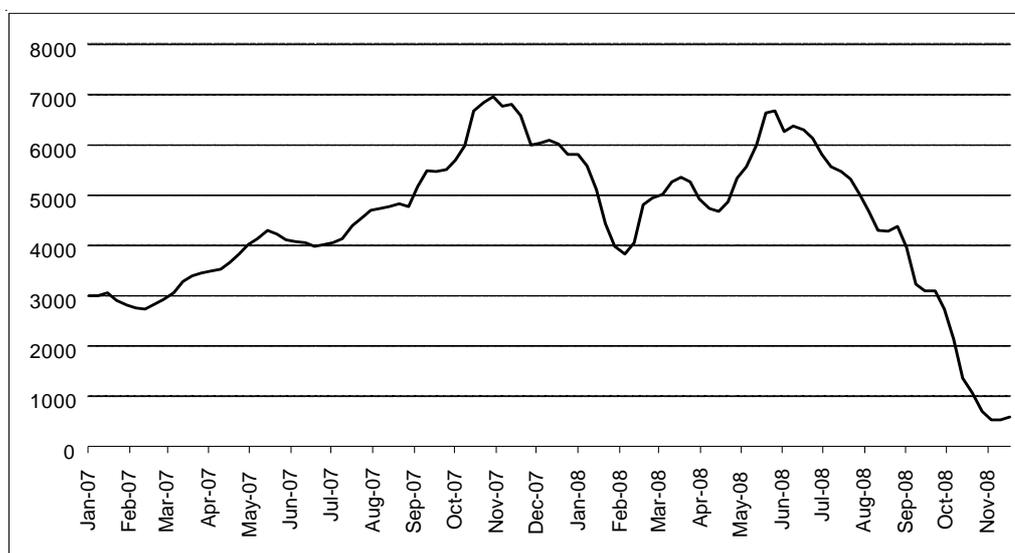
The Forest Industries Training and Education Council (FITEC) is the industry training organization (ITO) for the forestry and wood-processing sectors. Its legal responsibilities include setting national standards and qualifications, and developing training programmes and arrangements for their delivery. The BERL (2008) consultancy, which informed this discussion, was commissioned by FITEC. Its purpose is to inform the strategic planning of the ITO. In addition to its legal responsibilities, FITEC performs a number of other roles including promoting forestry and wood processing as a career choice.

### ***Shipping***

#### *Impact*

New Zealand's geographic location in the lower reaches of the Pacific Ocean means that unless ways to economize on shipping costs are found, the Asia-Pacific region will remain the focus of New Zealand forest product exports (MAF 2008a).

The cost of freighting logs to New Zealand's major export markets (for example, China and Republic of Korea) tripled over a period of just five years. In 2002, logs could be freighted for US\$20/m<sup>3</sup>. By 2007 brokers were quoting figures in excess of US\$60-70/m<sup>3</sup> (MAF 2008e). Over 2008, however, freight rates dropped significantly to well within their long-term average (Figure 21).



**Figure 21. Freight rates (Baltic Exchange Supramax Index)**

Source: Datastream (an online database).

Preserving the log trade, during the period of escalating freight rates, was a difficult proposition for forest growers and exporters. High shipping costs placed New Zealand, a country distanced from its major markets, at a disadvantage. The lower the value of the forest product, the greater the disadvantage, as shipping costs account for a larger proportion of price.

When freight rates were high, in some areas of New Zealand shipping logs became inefficient or uneconomic and a constraint on log exports. Some of the more optimistic commentators noted the potential for these conditions to act as a spur to encourage additional processing of logs (see, for example, MAF [2008a]). Exporting sawntimber (rather than logs) reduces the relative cost of freight and provides exporters with additional transport options, in particular the use of scheduled container services. However, the domestic wood-processing industry is not set up to take the relatively smaller logs that would have otherwise been exported as most sawmills are set up for larger logs (BERL 2008).

#### *Potential directions for policy and sector initiatives*

To successfully operate in this environment of fluctuating shipping costs, exporters need to look closely at their supply chains and identify opportunities for reducing (or sharing) financial costs. Options include (MAF 2007e and 2008a):

- Forestry companies looking at formally partnering with bulk importers, and taking more control of the charter arrangements.
- The use of shared charters, to ensure the vessel is loaded on both legs of the voyage.
- Larger-capacity vessels being utilized, where feasible, to reduce the per-tonne cost of freight. This may require the use of feeder services to hub ports (which would require industry pooling of log volumes).

- Increasing the use of container services (and specially designed log containers) for small or specialized orders.
- Moving along the production chain and producing more highly processed products, so that shipping costs become a smaller proportion of price.

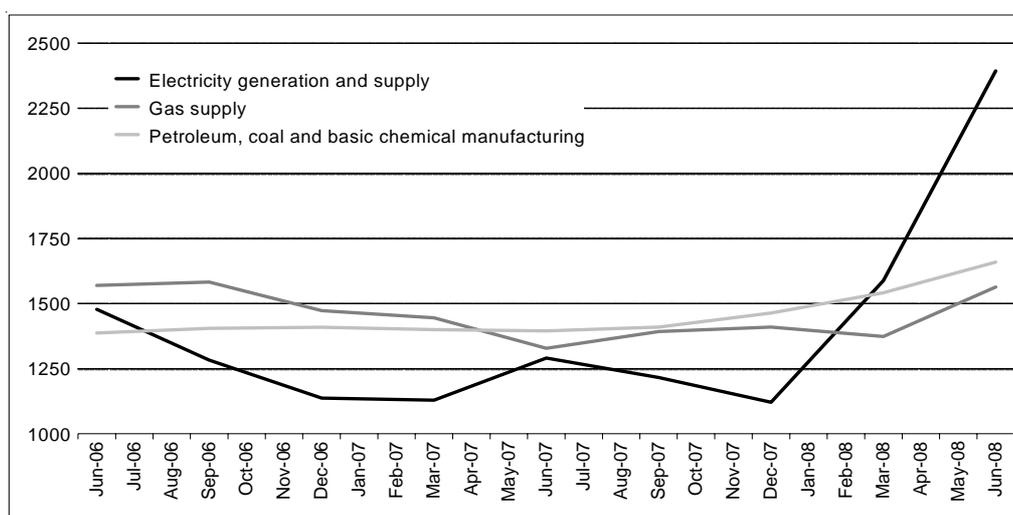
## Energy

### Impact

The forestry and wood-processing sectors account for around 13 percent of New Zealand's energy consumption, with a number of its processors ranking amongst the country's major energy consumers (MAF 2008a). Pulp, paper and panel production are particularly energy-intensive.

It is estimated that wood residues provide around 50 to 55 percent of the forestry and wood-processing sectors' energy consumption, while electricity provides about one-quarter, and gas, coal and oil provide the rest (BERL 2008).

New Zealand price indices for electricity, gas and petroleum all show significant upward trends since 2003 (MAF 2008a). Figure 22 illustrates the trends from mid-2006 to mid-2008.



**Figure 22. Energy prices. Producer price input indices (December 1997 = 1 000)**

Source: Statistics New Zealand (2008b).

While the rate of increase is expected to moderate, energy costs are likely to continue to trend upwards over time (BERL 2008). All other things being equal, the gradient will increase as stationary energy (including coal, gas, geothermal energy and waste fuels) enter the emissions trading scheme in 2010 (see the discussion on legislative constraints below).

However, its impact may be moderated in the first two years under transitional arrangements. Gas prices may increase further as the Maui gas field nears the end of its economic life. Given that gas generation costs often determine the price of electricity, further gas price increases are likely to cause similar increases in electricity prices.

A proposal to tax large users of biofuels, notably pulp and paper mills, for traces of nitrous oxide and methane in their emissions has been criticized as “pedantic” and “perverse” (NZFOA 2008) as it creates a disincentive to move from fossil fuels to biofuels.

Because of their energy intensity, high energy prices could seriously impact the pulp and paper industries. As revealed in the discussion on climate change policies below, the combined impact of an emissions trading scheme plus the proposed tax on biofuels could spell the end of some players.

### *Potential directions for policy and sector initiatives*

The forestry and wood-processing sectors, acutely aware of rising energy prices, have been increasing energy efficiencies and diverting to lower cost sources for some years.

Abstracting from climate change policies, this continued investment, in becoming more energy efficient, means that energy costs are not expected to significantly hamper future investment in the sectors (BERL 2008).

If climate change policies are barely changed then further investment becomes a less likely option in some wood-processing industries and divestment will be probable in others, e.g., pulp and paper. The transitory arrangements merely serve to defer the onset of these impacts.

The discussion on legislative constraints below observes that the recent change in government provides an opportunity to influence the future direction of climate change policies. It suggests some principles that should guide any further contemplation.

### ***Alternative uses of land and values of forest growing***

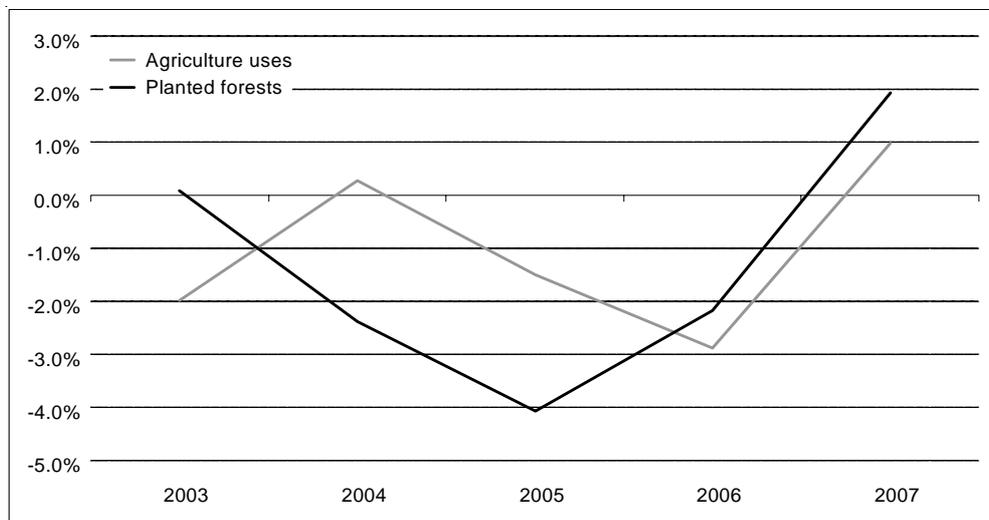
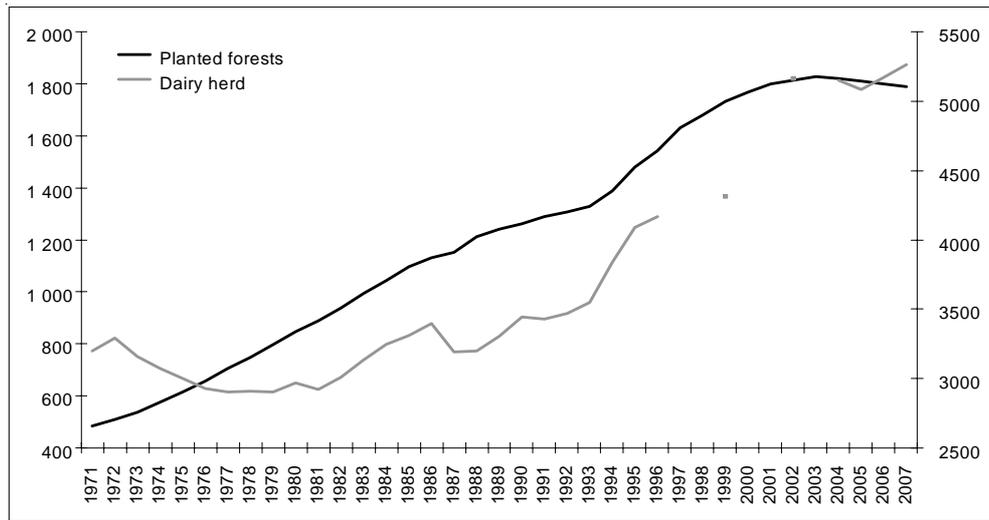
#### *Impact*

In recent years, up to one-third of forests harvested have not been replanted and the rate of new planting has declined. Commentators have observed that the land has been converted to farming, particularly dairy farming, enticed by the current relatively more lucrative returns to dairy (see, for example, BERL [2008] and Innovatek [2008b]).

This proposition, however, is not supported by the evidence; at least not as a nationwide phenomenon. Dairy and forestry have a not too dissimilar historic pattern of growth; they do not appear to be in opposition (as evident in the top chart in Figure 23). This is unsurprising as the growth of each will be linked to conditions in domestic and export markets.

An alternative argument is that this is a phenomenon of more recent times, as the land available for use has become physically constrained. The divergent patterns of growth for

dairy and forestry in the latter years captured in the top chart in Figure 23 lend some support to this argument. However, land-use data (as depicted in the bottom chart in Figure 23) weakens it, as the changes have trended in the same directions. Growing trees, which are not intended for harvest for 30 or so years, ‘locks in’ land use for the longer term.



**Figure 23. Growth of the planted forestry and dairy sectors (above - 1 000 hectares of planted forest and 1 000 of dairy cattle; below - percent change in use from previous year)**

Source: MAF (2008c,f,g).

While doubt can be cast on the competing land-use theories at the national level, at the margin and in certain regions, they hold greater validity. That is, if the trees are approaching an age when their harvest is economic, and where the land is suitable for conversion, then a change is more likely. These preconditions can be found in areas such as the CNI and Canterbury.

So far the discussion has focused on whether land is being converted from forestry to dairy or some alternative agricultural land use based on the *economic* value of the alternatives. However, the debate has, and continues to be, much wider than that, with many arguing that the changed land uses and investment patterns fail to take account of the *full* value of forest growing.

New Zealand communities are increasingly demanding environmental or societal services from planted forests, such as their potential to help sustainably manage land and water resources, conserve habitats and manage biodiversity, mitigate climate change impacts and provide public recreation (see the triple bottom line discussion in the Introduction). Many of these services are non-exclusive: People cannot be excluded from enjoying those services and the true values of the services are, therefore, not recognized financially. The market failures means that the investment in forest growing is less than what the New Zealand community would regard as optimal (MAF 2008a).

### *Potential directions for policy and sector initiatives*

Industry interests have suggested that land-use changes away from planted forestry (see, for example, Innovatek [2008b]) is a policy environment that does not recognize the multiple benefits of forestry to New Zealand.

It may be possible to design market mechanisms that address these failings. The emissions trading scheme (discussed below in the context of the legislative constraints) attempts to do this. Other examples include the East Coast Forestry Project and the Sustainable Land Management Hill Country Erosion Fund, which provides incentives to plant on erosion-prone lands; the Afforestation Grant Scheme, which funds the planting of unforested ('Kyoto-compliant') land; and the proposition for nutrient trading in the Lake Taupo catchment, to encourage low-nutrient land uses, such as forestry (MAF 2008a). These mechanisms provide regular or alternative income streams that transform the economics of forestry and the way people view it as a land-use and investment opportunity.

### **Comparative advantage**

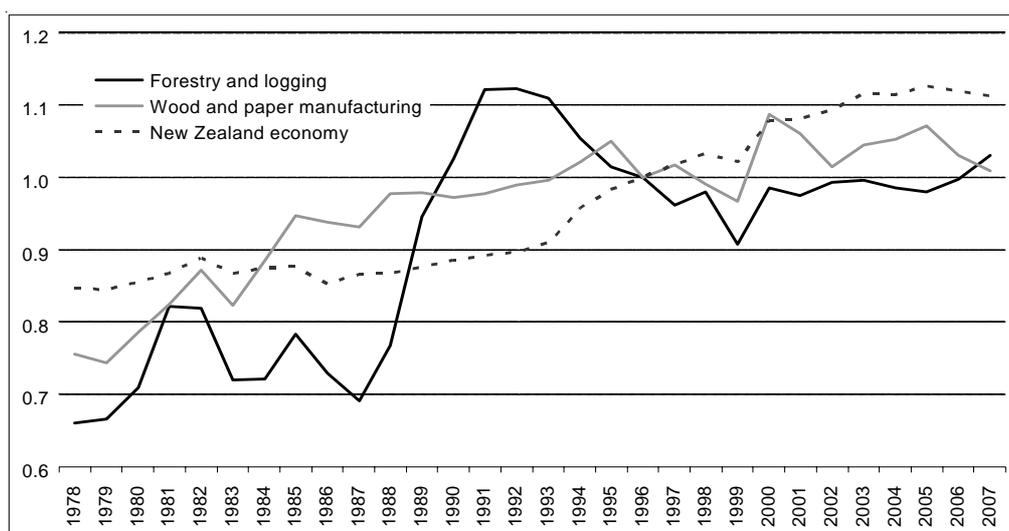
#### *Impact*

Just as the physical constraint of land available may (in the circumstances described above) force choices to be made regarding its most profitable use, the investment dollar is also a scarce resource. For a decision to be made to invest in New Zealand's forestry and wood-processing sectors, investors will want to know whether New Zealand:

1. Has a comparative advantage in these sectors ahead of other sectors in the economy; and
2. Is comparatively more efficient at producing forest products than its competitors.

With respect to both aspects, the cost of inputs into the production process is relevant. As the above discussion reveals, the availability and cost of key inputs – labour, shipping and energy – undermines the cost competitiveness of forestry and wood processing. Looking at the latter input, all other things being equal, less energy-intensive investment options will be preferred ahead of wood processing.

The relative productivity of the sectors is also relevant, in particular, their multifactor productivity – how efficiently all inputs are being used to produce outputs. Here the performance of forestry and wood processing over the last 12 years relative to all productive sectors in the New Zealand economy provides further cause for lament. Between 1978 and 1996, multifactor productivity of forestry and logging and wood and paper manufacturing grew at an annual average compound rate of 2.5 percent and 1.7 percent, respectively. This compared favourably to the New Zealand-wide rate of 1 percent, making investment in the sectors a relatively more attractive option. Since 1996, the multifactor productivity of forestry and logging has plummeted to 0.3 percent, and wood and paper manufacturing to a mere 0.1 percent, making it a relatively less attractive investment option given a rate of growth for all sectors of 1.1 percent. Figure 24 illustrates the contrasting performances over time.



**Figure 24. Multifactor productivity (years ending 31 March, index [1996] = 1)**

Source: MAF (2008d).

As evidenced in the previous section on demand influences, New Zealand's share of global forest product exports is stagnant to declining. There it was argued that export markets need to be developed beyond the handful of countries that New Zealand currently supplies. Here, the other contributor to these dismal trends is examined – New Zealand's competitiveness in export markets. The New Zealand forestry and wood-processing sectors compete with a number of forest product producers selling into the wood-deficit markets of the US Pacific coast, Southeast Asia and North Asia. Comparative studies show that the New Zealand

forestry and wood-processing sectors cannot compete on price alone with other forest-growing countries, particularly in South America (FIDA 2006). As shown in Table 10, Chile outranks New Zealand in the cost competitiveness stakes for most forest products. All other things being equal, Chile is likely to attract investments in wood processing ahead of New Zealand.

**Table 10. Comparative cost competitiveness (rank by product in 2004, 1 = lowest cost, 6 = high cost)**

Product	Destination	NZ	Chile	Australia	China	Japan	Indonesia	US	Malaysia	Canada	Europe
		Packaging lumber	Japan/China	2	1	3	4	5			
Structural lumber	Australia	2		1							
Appearance lumber	USA	2	1								
Moulding	USA	2	1					3			
Furniture	USA	3	2		1						
Component	China	3	2		1						
Sliced/face veneer	Asia	2	1								
	Europe	2	1								
	USA	2	1								
Peeled/core veneer	China	2	1	3							
Softwood plywood	Japan	3	1	5	2	6	4				
LVL	Japan	4	1	5	2	6	3				
MDF	China/Japan	1	3	4	5				2		
	USA	3	1	5	6			2	4		
MDF moulding	USA	2	1					3			
Particle board	China	2		3	1						
Glulam	Japan	2		3		5				4	1
Mechanical pulp	Japan	1	2	3							

Note: Information in this table is based on world-scale processing plants, implying rankings for New Zealand are optimistic. Source: Jaakko Pöyry (2004).

### *Potential directions for policy and sector initiatives*

In order for New Zealand forestry and wood processing to have a comparative advantage ahead of other investment alternatives, either in other New Zealand sectors or in the same sectors elsewhere, the sectorial and governmental efforts need to be directed towards:

- cutting costs;
- improving productivity; and
- enhancing non-price competitiveness.

Means to the first ends are set out above in the context of discussions on labour, shipping costs and energy.

Regarding the second, the gains in productivity realized over the mid-1980s to mid-1990s were generated from economic reforms that put an end to any protectionism or preferences that sheltered the sectors and saw the government exit its direct involvement in the forestry

sector (see earlier discussion on ownership patterns). The reforms resulted in the re-allocation and better use of resources – the productivity gains.

Now that these efficiency gains have been realized, further gains will only be forthcoming if the sectors become more innovative and make good use of existing and emerging technologies. Process innovations and technology utilization will enable the sectors to do what they currently do more efficiently. Entrepreneurship, R&D and capital deepening (increasing the amount of capital per employee) are key factors. Roles the government can play include:

- Creating an environment that is conducive to and does not stifle entrepreneurship, including reforming regulation that impedes private initiative.
- Ensuring that tax, financial market and monetary policy settings do not inadvertently place barriers in the way of access to capital.
- Investing in public good R&D that complements and crowds in (not out) industry efforts.

The last is not only important to inspiring process innovations, it holds the promise of product innovations that enable the sectors to compete on non-price terms<sup>6</sup> (FIDA 2006).

Transformative research is often for the public good in nature (Sherwin 2007). The outcomes spill over and benefit the sectors, and are also the foundation for further commercial success. Because it is very hard for individual participants in the forestry and wood-processing sectors to appropriate the benefits, they are unlikely to be realized in the absence of government involvement.

## **Legislative constraints<sup>7</sup>**

### ***Climate change policy***

#### ***Impact***

The Climate Change Response (Emissions Trading) Amendment Act 2008 established an emissions trading scheme (ETS) in New Zealand, with forestry the first sector to be involved. A year later, under a new administration, the New Zealand Parliament passed an act to revise the scheme, providing for a slowed phasing, transitional arrangements and greater alignment with Australia.

The ETS is a price-based mechanism to reduce net greenhouse gas emissions and to ensure New Zealand complies with its Kyoto Protocol obligations. It puts a price on the emission of greenhouse gases and provides incentives to encourage sectors to search for the most

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<sup>6</sup> Non-price competitiveness explains the reasons why a forest product will sell at a higher price than a competing product, and may include quality, image and post sale service.

<sup>7</sup> Not mentioned here are the Commerce Act, the Overseas Investment Act and Treaty of Waitangi obligations under the law. None of these matters were raised as barriers in either the materials referenced or by persons interviewed. They were consequently judged to be of a lesser order of magnitude than climate change policy and the Resource Management Act.

efficient paths to lower net emissions across the economy. The price of carbon permits, or New Zealand Emission Units (NZUs) will be determined by their trade in the Australasian market.

The scheme is to progressively expand its coverage. The phasing of the introduction of the ETS began with forestry on 1 January 2008. The stationary energy and transport sectors are to be included in 2010. Coverage will be completed with the inclusion of agriculture on 1 January 2015, at which time all sectors of the economy will be included. The deferred inclusion of agriculture is a sore point with the forestry sector (see, for example, NZFOA 2007), which has the potential to exacerbate the land-use changes from forest growing, to dairy and other agricultural uses (as discussed above).

The ETS is expected to have a differential impact on investment in forest growing and wood processing. For the former, the direct impact is largely, but not exclusively, positive. For the latter, it will be negative, with consequent indirect adverse impacts for forest growing, as local demand for wood may weaken.

#### Impact on forestry growing and harvesting

Economic analysis suggests that even at relatively low carbon prices, participation in the ETS would have a positive effect on internal rates of return for owners of forests planted post-Kyoto (1990), and at high carbon prices the effects would be significant (Clarke and James 2001; MAF 2008a). This is because NZUs are earned as the forests grow. They, however, will need to be surrendered when the trees are harvested.

For forests planted pre-Kyoto, their harvesting is likely to incur a large liability – NZ\$14.4 billion, assuming 800 tonnes/hectare, NZ\$15/tonne CO<sub>2</sub> and 1.2 million hectares (NZFOA 2007). This arises because few commensurate NZUs will have been earned prior to their harvest.

To avoid this liability a number of forest owners chose to harvest their trees early ahead of the ETS coming into effect (MAF 2008d). The volume of logs harvested from New Zealand forests increased by 4.4 percent for the year ending 31 December 2007. Early harvesting is not, however, a cost-free option. It means forfeiting the returns that would have otherwise been expected from waiting for the financially optimal harvest age had the ETS not been introduced, and any supply-induced fall in log prices (Clarke and James 2001).

In recognition of the liability the ETS imposes on pre-Kyoto forest owners, the government had been planning to provide the owners compensation, with the bulk of this to be paid post-2012. It has now been signalled that the government might not pay this if the international agreement that replaces Kyoto allows for harvested pre-Kyoto forests to be ‘offset’ – that is, replanted on a new site. Forest owner representatives have voiced concern that this compounds the injustice as forest owners would have to finance the re-establishment of forest infrastructure on a new site, while the forested site would still have a permanent deforestation liability attached to it (NZFOA 2009).

For those forests still to be harvested, forest owners will choose to harvest their forests only if the expected return from the sale of logs outweighs the cost of buying NZUs for deforestation. Trees may be harvested at more mature ages than has been recent practice (in

order to maximize earnings from NZUs), or not altogether (Clarke and James 2001). The supply of wood to local processors may be adversely impacted.

### Impact on wood processing

The potential for wood supply to be less than previously expected is just one of a number of ways the New Zealand wood-processing sector is likely to be adversely impacted by the ETS. The primary economic impact will be felt through higher prices for a number of important inputs, namely the cost of (Castalia 2008):

- electricity for driving saws, chippers, grinding and conveying;
- gas, coal and geothermal energy for process heating; and
- transport of logs from forest to mill, and of finished products from mills to ports or domestic outlets.

The sector's greatest exposure to cost increases under the climate change policy is through increases in energy prices and costs, including biofuel costs and transport costs. Castalia (2008) has estimated that the climate change policy will raise costs across the whole sector by between NZ\$629 and NZ\$702 million, based on a carbon price range of NZ\$20 to NZ\$50 per tonne of carbon.

Given the likely impact of the ETS, Castalia (2008) finds that mechanical pulp mills will be induced to close prematurely, stranding their assets. As their electricity consumption is very high, their operating costs would exceed the revenues. Divestment, rather than investment, will be the pattern of the future.

The closure of the mechanical pulp mills will have a flow on impact to sawmills, by reducing the prices for wood chips, which are a significant by-product of sawmilling and serve as input into the pulp mills.

Analysis by Castalia (2008) suggests that the operating surpluses of sawmillers and other wood processors (of panels, chemical pulp and paper) are generally adequate to accommodate some increases in costs from the ETS. However, profitability will be lower, the values of the plants to their owners will be reduced and, in some cases, the write-down in asset values associated with lower operating surpluses could affect lending covenants, and increase the borrowing costs of the industry. Castalia (2008) concludes that new investment in wood processing in New Zealand appears unlikely. Overseas investment alternatives are likely to be preferred and the projected increase in wood production over the next two decades is more likely to be exported as logs.

### *Potential directions for policy and sector initiatives*

The 2009 amendments of New Zealand's ETS have improved conditions for forestry and processing by:

- compensating for liabilities arising from decisions taken before the Kyoto Protocol was signed, such as new forest plantings;

- introducing transitional arrangements, such as allocating a share of NZUs to industry for free (see Castalia 2008 for further discussion on this specific policy option); and
- making greater use of incentives, such as reducing liabilities arising if trees harvested are replanted (see NZFOA 2007 for further discussion on this specific policy option).

As the above discussion indicates, there continues to be room for further improvements, including:

- adopting a level playing field approach to competing land uses;
- reviewing the compensation still due to the owners of preKyoto forests; and
- reviewing the proposal to tax the greenhouse gas emissions of biofuels.

The proposed 2011 review of the ETS provides an opportunity to develop new policies that will further these ends.

## ***Resource Management Act***

### ***Impact***

The Resource Management Act 1991 (RMA) provides a basis for environmental management, including air, water, soil, biodiversity, the coastal environment, noise, subdivision and general land-use planning. The RMA requires that every district council prepare a district plan and every regional council prepare a regional policy statement and, if necessary, regional plans. Regional policy statements establish a framework for resource management issues in a region, and facilitate an integrated approach among district councils in managing those issues. More detailed district plans set out significant resource management issues in each district and establish objectives, policies and methods to address these issues. District plans typically cover issues relating to land-use impacts, the effects of activities on rivers and lakes, and noise. Regional plans are typically developed to regulate discharges of contaminants, water quality and quantity, coastal marine areas and soil conservation.

Each region or district/city has its own resource management issues and establishes a plan to regulate activities that may impact on the environment. Councils classify activities according to perceived potential impacts. Where activities are classified as controlled activities, discretionary activities, restricted or limited discretionary activities, or non-complying activities, a resource consent must be obtained before the activity can be undertaken. Additionally, some activities may be prohibited.

The overarching legislation and intent of the RMA are generally regarded by the forestry and wood-processing sectors and others to be good. However, major problems in how it is implemented have led many to regard it to be the single biggest obstacle to the development of processing investment in New Zealand (Brown and Ortiz 2001). While this can be discounted as perception, the anecdotal experiences of some companies have created a climate where potential investors view RMA processes as a significant cost and risk. Their criticisms of the RMA are many and include the following:

- Restrictions on the availability of land for planting, such as landscape and amenity restrictions on mid- and higher altitude plantings (MAF 2007e), and on planting and harvesting forests near rivers with riparian zones and coastal marine areas (MAF 2006).
- Limited availability of suitably zoned land for Greenfield investments (MAF 2007e).
- Costs of obtaining a resource consent, including the time and cost of consulting, attending hearings and potentially seeking legal advice (Brown and Ortiz 2001; MAF 2006).
- High compliance costs (Brown and Ortiz 2001) including the sometimes prohibitive costs of meeting high standards, such as the cost of meeting air quality standards, which may not be supported by adequate science.
- Lack of consistency between councils (Brown and Ortiz 2001).
- Significant degrees of uncertainty and risk, posing too high a hurdle for many Greenfield investments and a preference for Brownfield expansions (Brown and Ortiz 2001; MAF 2006; MAF 2007c).
- Objection processes that create the potential for vexatious and often anti-trade objections (Brown and Ortiz 2001; National 2008b).

### *Potential directions for policy and sector initiatives*

Reform of the RMA is being carried out in two phases. The first phase was delivered by the passing of amendments to the RMA in October 2009. The primary intention of these changes was to reduce the costs and improve the timeliness of RMA processes. It was also designed to streamline consenting processes for priority projects, and to manage anticompetitive behaviours under the RMA. In other words, the amendments tackle many of the longstanding concerns of the forestry and wood-processing sectors regarding the RMA's operation.

The objective of the second phase of reform is to achieve the least cost delivery of good environmental outcomes. The reform package touches on a number of resource management areas that are not only relevant to the RMA, but cover these areas more broadly.

The proposed reforms create a window of opportunity for forestry and wood-processing sectoral interests to influence the future of resource management in New Zealand.

## **Conclusion**

New Zealand's forestry and wood-processing sectors are of considerable benefit to the country's economy, environment and society. If, however, current trends are allowed to extend into the future, the potential for the sectors to enhance their triple bottom line contribution will not be realized. The rate of planting and replanting has declined, and the available wood resource is not being fully utilized.

The optimal contribution from forestry and in wood processing requires investment – investment in forest growing and management and in processing facilities. As the majority of New Zealand's planted forests have not been in government hands for some time now, this investment must be financed by private sector interests. The role of the government is to create the enabling environment that facilitates private initiative.

This paper has identified the demand-side influences, supply-side considerations and legislative constraints that impact the enabling environment. It proposes action for sectoral interests and the government. The recommendations below isolate the proposed courses of action.

## Recommendations

	Potential directions for sector initiatives	Potential policy directions Demand-side influences
<i>Exchange rate:</i> The fluctuating exchange rate is particularly deleterious given the long-term nature of investments in forest growing and wood processing.	<ul style="list-style-type: none"> <li>■ Forest products are sold in a wider range of markets.</li> <li>■ Greater value is added within New Zealand before exporting final products.</li> </ul>	<ul style="list-style-type: none"> <li>■ Promote New Zealand and its products in overseas markets (refer <i>Market development</i>).</li> <li>■ Address the barriers to market access (refer <i>Market access</i>).</li> <li>■ Support research and development.</li> <li>■ Review approach to monetary policy and the impact its operation has on the 'real' sector of the economy.</li> </ul>
<i>Housing slump:</i> Housing demand slumped in the domestic and several key forest product export markets in the wake of the global financial crisis, impacting the demand for both timber and panel products.	<ul style="list-style-type: none"> <li>■ Build the resilience of the sectors.</li> <li>■ (Refer also <i>Market development</i>).</li> </ul>	
<i>Market development:</i> The narrow range of markets New Zealand's forest products are sold into has contributed to a low to declining global market share and vulnerability to market conditions.	<ul style="list-style-type: none"> <li>■ Seek to develop existing and new export markets, notably through initiatives identified in the context of the Forest and Wood Products Industry Strategic Plan.</li> <li>■ (Refer also <i>Comparative advantage</i>).</li> </ul>	<ul style="list-style-type: none"> <li>■ Assist the sectors' efforts through initiatives that complement and crowd in (not out) individual and collective action.</li> </ul>
<i>Certification:</i> Customers are increasingly requiring that forest products are from sustainable forests.	<ul style="list-style-type: none"> <li>■ Evidence that logs are from sustainable forests by obtaining FSC certification.</li> </ul>	
<i>Market access:</i> As tariff barriers have become less of a constraint on trade, non-tariff measures have increased and are now prolific in the forest product trade.	<ul style="list-style-type: none"> <li>■ Trade officials and representative organizations from the forestry and wood-processing sector to continue to work together to minimize non-tariff measures.</li> </ul>	

## Supply-side considerations

<p><i>Labour:</i> The trend towards fewer persons being engaged in forestry and wood processing needs to turn around if the increasing volumes of wood becoming available are to be harvested and processed domestically.</p>	<p>The Forest Industries Training and Education Council undertake initiatives to:</p> <ul style="list-style-type: none"> <li>■ Lift the profile of the forestry and wood-processing sectors and promoting careers within those sectors.</li> <li>■ Future plan to identify and address skill requirements and gaps within the sectors.</li> </ul>
<p><i>Shipping:</i> New Zealand's geographic location means that, unless ways to economize on shipping costs are found, the Asia-Pacific region will remain the focus of New Zealand forest product exports.</p>	<ul style="list-style-type: none"> <li>■ Exporters look closely at their supply chains and identify opportunities for reducing (or sharing) financial costs.</li> </ul>
<p><i>Energy:</i> Because of their energy intensity, high prices for electricity and gas could seriously impact pulp and paper producers.</p>	<p>(Refer <i>Climate change policy</i>)</p>
<p><i>Alternative uses of land and values of forest growing:</i> Changed land uses and investment patterns fail to take account of the full – triple bottom line – value of forest growing.</p>	<ul style="list-style-type: none"> <li>■ The multiple benefits of forestry explicitly influence the design of market mechanisms to address any failings, such as the emissions trading scheme (refer <i>Climate change policy</i>).</li> </ul>
<p><i>Comparative advantage:</i> The availability and cost of key inputs (refer <i>Labour, shipping and energy</i>) undermines the cost competitiveness of forestry and wood processing, and the ability of the sectors to successfully compete with other producers of low value forest products. Forestry and wood processing are relatively and increasingly less productive than the average for all productive sectors of the New Zealand economy.</p>	<ul style="list-style-type: none"> <li>■ Cut costs (refer e.g., <i>Shipping</i>).</li> <li>■ Improve productivity through entrepreneurship, R&amp;D and capital deepening.</li> <li>■ Create an environment that is conducive to and does not stifle entrepreneurship, including reforming regulations that impede private initiative.</li> <li>■ Ensure tax, financial market and monetary policy settings do not inadvertently place barriers in the way of access to capital.</li> <li>■ Invest in public good R&amp;D that complements and crowds in (not out) industry efforts.</li> </ul>

### **Legislative constraints**

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*Climate change policy:*  
The emissions trading scheme is expected to benefit forest growing and negatively impact wood processing.

- Adopt a level playing field approach to competing land uses.
  - Review the compensation still due to the owners of pre-Kyoto forests.
  - Review the proposal to tax the greenhouse gas emissions of biofuels.
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*Resource Management Act:* Implementation has caused many to regard it as the single biggest obstacle to investment in wood processing.

- Advance to the second phase of the government's proposed resource management reforms.
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# Creating space for private sector financing: Removing constraints to investments in the Philippines

Florentino O. Tesoro<sup>1</sup> and Leonardo D. Angeles<sup>2</sup>

## Introduction

The Government of the Philippines continues to play a dominant and central role in forest management, wood processing and trade through its policy issuances and regulatory controls. This role is based on the inherent powers of the state to control and supervise the exploration, development and utilization of all public lands, including forest lands or timberlands, and their natural resources (Philippine Constitution 1987).<sup>3</sup> It also regulates all industries, including the wood-based industry (EO Nos. 192 & 292 1987).

Although the state recognizes the indispensable role of the private sector, encourages private enterprise and provides incentives to needed investments (Philippine Constitution 1987), the private sector continues to be reluctant to invest in forestry enterprises (natural forest management, plantation forest development and/or wood processing and marketing), as it is constrained by the prevailing unfriendly business environment. Some of the key reasons for this (which will be explored in more detail in the study) include:

- Outdated, unstable and poorly implemented policies on forest resources and forest-based industries;
- Heavy regulations that are changed frequently and uncoordinated with other government agencies and stakeholders of the forestry sector;
- Lack of a vision-oriented, workable, financially-supported and time-bound roadmap for the sustainable development of the forestry sector;
- Time-consuming, requirement-demanding and transaction-costly licensing and permit systems in practically every step of business operations;
- Poor and inadequate infrastructure, such as roads, bridges, power and telecommunication systems;
- The perception of financial institutions being opposed to forestry businesses, which are perceived as having long gestation, low return and high risk;
- Meager incentives for investment in the forestry sector; and
- Negative public perception that forestry is an irresponsible and unsustainable use of natural resources.

In general, the macroeconomic fundamentals of the Philippines are sound, allowing the country to have survived the 1997 regional and the current global financial crises much better than its neighbours. What is needed for the forestry sector to regain its high economic status

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<sup>1</sup> A professional forester who has worked with academic institutions (education and research) and is the former Undersecretary for Regional Operations, Department of Science and Technology (DOST).

<sup>2</sup> A professional forester who has worked with the private sector for more than 20 years and is currently Executive Director of the Philippine Wood Producers' Association (PWPA).

<sup>3</sup> The Philippine Constitutions of 1935 and 1978 are likewise enshrined with this Regalian doctrine.

of the 1950s-1980s is a paradigm shift in government philosophy towards investment in the sector. Half the total land area of the country is a potentially rich forest asset with a favourable climate for growing trees, a huge rural population needing jobs and sources of livelihood, local and global markets in perpetual need of wood, and an historical benchmark of good forestry sector performance. Thus, the removal of the barriers to forestry investments is the necessary intervention to re-invent the forestry sector.

This study attempts to review and identify key constraints, as perceived by private sector investors, and to recommend measures for their removal through reforms by the government, with the end-view of improving the investment climate in the forestry sector.

## **Patterns of resource ownership**

### ***Forest lands***

Forest lands, like national parks, agricultural and mineral lands, are in the public domain, and their natural resources such as forests are owned by the state (Philippine Constitution 1987). The Constitution further provides that, except for agricultural lands, they shall not be alienated nor titled and their exploration, disposition, development and utilization may be done by the state itself, or it may enter into co-production, joint venture, or production-sharing agreements with Filipino citizens or corporations or associations, at least 60 percent of whose capital is owned by them; this may be done for a period not exceeding 25 years, renewable for not more than 25 years under such terms and conditions as may be provided by law.

Under the government's land classification system, in 2005, the Philippines' total land area (30 million hectares) was almost equally classified into forest lands and disposable or agricultural lands at 15.8 million hectares and 14.2 million hectares, respectively. Forest reserves, timberlands, national parks and military, naval and civil reservations, as well as fishponds and the remaining unclassified public lands, are components of forest lands.

However, Republic Act (RA) No. 8371, otherwise known as the Indigenous Peoples Rights Act (IPRA) of 1997 (RA No. 8371, 1997), affirmed as constitutionally valid by the Supreme Court of the Philippines (G.R. No. 135385 2000), converted all lands legitimately claimed by indigenous peoples (IPs) or indigenous cultural communities (ICCs) as their ancestral lands and/or ancestral domains into private alienable and disposable (A&D) or agricultural lands with so-called Native Titles.

As of August 2007, 57 Certificates of Ancestral Domain Titles (CADTs) and 172 Certificates of Ancestral Land Titles (CALTs) had been approved, covering 1.1 million hectares and 4.9 million hectares, respectively, or close to 6.0 million hectares that were part of the 15.8 million hectares of forest lands; they have now become part of the A&D lands (Table 1).

**Table 1. Changes in land classification resulting from IPRA implementation (million hectares); A&D lands – private alienable and disposable lands**

	Prior to IPRA	As at August 2007
A&D lands	14.2	20.2
Forest lands	15.8	9.8
Total area of the Philippines	30.0	30.0

The allocation of forest lands is done by the state through Congress, the Office of the President, the Department of Environment and Natural Resources (DENR) or the National Commission on Indigenous Peoples (NCIP).

Congress is enjoined by the Constitution to: a) set the final boundaries of forest lands (only by government acts can these established boundaries be modified); b) prescribe the modes of access to, size of the area and conditions of forest land grants; and c) enact sustainable forest land-use policies, including the declaration of a logging ban.

The President of the Republic of the Philippines may promulgate executive orders (EO) to carry out acts of public interest the government wants to pursue; for example, EO No. 263 of 1995 (Implementing the Community-based Forest Management) and EO No. 318 of 2004 (Implementing Sustainable Forest Management), as well as presidential proclamations to establish watershed, civil/military reservations, etc.

The Secretary of the DENR may allocate forest lands by granting various types of tenure instruments conforming with either joint ventures, co-production, or production-sharing agreements, as well as with stewardship contracts prescribed by the Constitution.

These tenure instruments include: a) integrated forest management agreements (IFMAs) for corporations; b) socialized integrated forest management agreements (SIFMAs) for family or smallfarmer stakeholders; c) community-based forest management agreements (CBFMAs) for organized communities who are dependent on the forests for their livelihoods; and d) others such as tree farm lease agreements (TFLAs), agroforest farm lease agreements (AFFLAs), pulpwood timber licence agreements (PTLAs) and forest land grazing management agreements (FLGMAs). These are all production-sharing agreements. The timber licence agreements (TLAs) are being phased-out as they do not conform to the constitutional prescription of agreements (the last of the TLAs will expire in 2011).

In cases where the areas applied for happened to be partly or wholly inside ancestral domains, the grant of free and prior informed consent (FPIC) by the IPs or ICCs is a condition for the award of the tenure instruments over the area. Moreover, before a tenure instrument can be granted by the DENR it must first obtain certification from the NCIP that no portion of the area granted is within claims of IPs/ICCs.

Finally, the chairperson of the NCIP, as authorized by the consensus decision of its commissioners, may issue CADTs or CALTs.

Table 2 shows the allocation of forest lands, including the parts now under CADTs and CALTs or native-titled agricultural lands.

**Table 2. Allocation of forest lands (1 000 hectares)**

Tenure	Area	Tenure-exempt/free	Area
Ancestral Domain/Ancestral Land (CADT/CALT) <sup>†</sup>	5 977	National parks	1 342
Timber (TLA)	779	Military/naval reservation	126
Pulpwood (PTLA)	46	Civil reservation	166
Integrated Forest Management (IFMA/ITPLA)	714	Watershed reserves	1 499
Tree Farm (TFLA)	17	Fishpond	91
Agroforestry (AFFLA)	90	Untenured forest reserves and timberland	2 429
Socialized IFM (SIFMA)	40		
Forest Land Grazing (FLGMA)	109	Unclassified	753
Community-Based Forest Management (CBFMA)	1 622		
<b>Total</b>	<b>9 394</b>	<b>Total</b>	<b>6 406</b>

<sup>†</sup>In erstwhile forest lands, now in ‘native-titled’ agricultural lands.

Source: DENR (2005a).

Holders of tenure instruments are directly responsible and accountable for the protection, development and management of the forest lands and their resources. However, the obligations of the tenure holder and the state, including their respective ‘equities’ and the sharing of profits or benefits are generally prescribed in the general guidelines; the specifics being inked in every agreement or contract.

## Forests

The Supreme Court of the Philippines’ affirmation of the validity of CADTs and CALTs as private lands did not include ownership of the natural resources such as natural forest by the IPs or ICCs; they remain owned by the state as assets found in titled or non-titled privately owned and A&D lands, such as those contained in the 20 000-hectare Spanish-titled private land between the provinces of Aurora and Quezon in northeastern Luzon.

Plantation forests, established in forest lands by holders of licence agreements under mandatory reforestation<sup>4</sup>, are owned by the state. However, plantation forests established in forest lands by holders of licence agreements that are not in satisfaction of mandatory reforestation or plantations in private or A&D lands by the owners themselves belong to such holders or owners under the pertinent provisions of Presidential Decree (PD) No. 705 (PD No. 705 1975), as amended and elaborated under DAO No. 99-53 (DENR 1999a).

<sup>4</sup> Holders of permits and agreements are mandated to reforest areas of the natural forest that are subjected to harvesting.

Based on the forest assessment of the country undertaken in 2003, the forest areas found in A&D lands are shown in Table 3.

**Table 3. Forest cover by categories 2003 (1 000 hectares)**

	Forest area in forest land	% to total land area	Forest area in A&D lands	% to total land area	Total forest cover	% of total land area
<b>Total</b>	<b>6 521.5</b>	<b>22.1</b>	<b>646.9</b>	<b>2.2</b>	<b>7 168.4</b>	<b>23.9</b>
Closed forest	2 495.8	8.5	65.0	0.2	2 560.9	8.5
Open forest	3 578.5	12.1	452.1	1.5	4 030.6	13.4
Mangrove	165.4	0.6	81.9	0.3	247.4	0.8
Plantation	281.8	0.6	47.8	0.2	329.6	1.1

Source: DENR (2003a).

Under the provisions of IPRA, “individually owned ancestral lands, which are agricultural in character and actually used for agricultural, residential, pasture, and tree farming purposes, including those with a slope of eighteen percent (18%) or more, are hereby classified as alienable and disposable agricultural lands.” As indicated earlier, as of August 2007, about 5.98 million hectares of forest lands have been issued CADT/CALT titles (NCIP 2007). It is not known how much of the forest cover is included in them.<sup>5</sup>

In addition to privately-owned natural forests there are tree plantations established/ developed by the non-government sector. From 2000 to 2005, the area of plantations developed was reported to be 34 857 hectares, of which 3 482 hectares were on private lands (Table 4). It appears from Table 4 that the number of plantations developed by the non-government sector is increasing and there was a significant increase in the plantations developed in private lands in 2005 because of the high demand for logs and wood by industries.

**Table 4. Area reforested by the non-government sector (hectares)**

Year	Total	TLA	IFMA	SIFMA	TFLA/ AFFLA	Private lands	CBFMA	Other
2005	9 311	341	5 973	263	101	2 633	-	-
2004	7 902	2 836	2 877	204	1 350	205	-	430
2003	1 893	842	924	-	110	17	-	-
2002	4 939	564	1 678	1 790	264	101	52	490
2001	4 920	1 410	1 431	997	139	320	103	520
2000	5 892	1 989	2 142	560	94	206	429	472
<b>TotMal</b>	<b>34 857</b>	<b>7 982</b>	<b>15 025</b>	<b>3 814</b>	<b>2 058</b>	<b>3 482</b>	<b>584</b>	<b>1 912</b>

Source: DENR (2005a).

<sup>5</sup> Data provided by the NCIP, 20 September, 2007.

### **Wood-based processing industries**

The number of processing plants reported in 2005 (DENR 2005a) is shown in Table 5. There were 30 operating sawmills, 22 veneer mills and 32 plywood mills. There has been an enormous reduction in the number of operating sawmills since 1980 when the country still had about 12.46 million hectares of forest cover, of which 10.7 million hectares were productive forest (DENR 1980). With the reduction in forest cover there was a corresponding decrease in the number of sawmills. However, the number of veneer and plywood mills remained more or less constant. This is because the country started to import veneer logs and veneer in the 1990s to process into plywood.

**Table 5. Number of wood-processing plants**

Year	Sawmill	Veneer	Plywood
2005	30	22	32
2004	36	20	32
2003	31	18	32
2002	36	16	34
2001	44	19	30
2000	45	19	27
1995	78	6	31
1990	152	15	45
1985	174	7	38
1980	209	23	33

Source: DENR (2005a).

In the furniture subsector there were approximately 15 000 furniture factories in 2001.<sup>6</sup> They were mostly found in three major areas, namely, Cebu City, Pampanga Province and Metro Manila. The furniture manufacturers utilize a combination of wood, rattan, bamboo and other materials in the production of furniture. The other subsector that makes use of forest-based raw materials is the handicraft industry. In 2001, there were an estimated 10 600<sup>7</sup> establishments nationwide. The majority are micro to medium enterprises which are mostly family-owned and family-operated.

### **The investment climate**

Stern (2002) defines investment climate as the “policy, institutional, and behavioral environment, both present and expected, that influence the returns and risks associated with investment”. Pernia and Maligalig<sup>8</sup> stated that there are three broad sets of factors that constitute an investment climate, namely: 1) macroeconomic fundamentals; 2) infrastructure; and 3) governance and institutions. Macroeconomic fundamentals include macroeconomic stability (e.g., reasonable fiscal and external balances, exchange rate,

<sup>6</sup> Roberto Natividad, Division Chief, Forest Products Research and Development Institute, personal communication.

<sup>7</sup> Roberto Natividad, op cit.

<sup>8</sup> Pernia and Maligalig (undated).

inflation rate and interest rates), competitive markets, social and political stability. Infrastructure includes availability and quality of physical infrastructures such as roads, ports, telecommunication, power and water supply. Governance and institutions include transparency and efficiency in regulation, taxation, the legal system, a strong financial sector, labour market flexibility and quality of labour force. Resource security, clarity of ownership and access rights should also be included under governance and institutions.

### **Macroeconomic fundamentals**

**Fiscal and external balances and FDI:** In 2007, the Philippines was ranked as the 37<sup>th</sup> largest economy by the International Monetary Fund (IMF) according to purchasing power parity. It posted a growth rate of 7.3 percent that year, comparable to that of India.<sup>9</sup> Important sectors of the economy include agriculture (including fisheries and forestry), industry and services. The industrial sector includes food processing, textiles and garments, electronics and automobile parts. Recent gas discoveries in Palawan add substantially to the country's hydropower, geothermal and coal energy reserves.

The economy, however, is weighed down by government debt. The Department of Finance (DOF) announced that the public sector debt as of the end of September 2007 stood at PhP4.9 trillion (US\$98 billion). This is equivalent to about 83.4 percent of the GDP. This is lower than the 87.7 percent ratio at the end of June in 2006 (Samonte 2008). Interest payment alone in 2007 was PhP58.7 billion, not counting the payment of the principal (Samonte 2007). With a better financial position, the funds that went into debt payment would have gone into priming the economy such as infrastructure, education, research and assistance to industries.

The Philippines has been trying to enhance its financial position by improving tax collection and restraining its expenditures, thus reducing its budget deficit. To improve tax collection the government has resorted to strengthening tax administration by rewarding tax collectors who meet prescribed performance targets and penalizing or re-assigning those that fail. The government has also adopted an approach of 'no audit' for taxpayers who paid 20 percent higher than the previous year to encourage payment of higher taxes (Institute of International Finance 2005). A package of new tax measures known as the Value Added Tax (VAT) scheme, which was expected to raise additional revenues, was passed in mid-2005 (RA No. 9337 2005).

As a result of these efforts the government was able to end 2007 with a budget deficit way below its PhP80 billion ceiling. The improved strength of the peso in 2007 and early 2008 has helped reduce significant amounts in public sector US dollar-denominated debt. In addition, the remittances of overseas Filipino workers (OFW) have bolstered the peso (Samonte 2008).

The amount of foreign direct investment (FDI) that a country obtains is a reflection of the confidence of investors, notwithstanding the special relationship that one country may have with the investor countries. Table 6 shows the amount of FDI received by the Philippines in the past ten years.

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<sup>9</sup>James Hookway, Wall Street Journal, 31 August 2007, Page A-1.

**Table 6. FDI in the Philippines, 1998-2007**

Year	Amount (US\$ billion)
1998	2.200
1999	1.700
2000	1.300
2001	0.982
2002	1.700
2003	0.318
2004 <sup>†</sup>	0.330
2005	1.854
2006	2.921
2007	2.928

<sup>†</sup>Up to September 2004.

Source: Central Bank of the Philippines (2008).

A major reason for the low investments in 2002 to 2004 was the slowdown in the United States' economy and in other parts of the world (USDA 2005). Increased competition from the People's Republic of China (PRC) reduced demand for Philippine export products, resulting in decreased new investments and re-investments in the export manufacturing sector (USDA 2005).

Another reason that dampened investments is the Foreign Investment Negative Lists. These are lists of investment areas where foreign investments are restricted such as in manufacture, repair, storage and distribution of firearms and ammunition, manufacture and distribution of dangerous drugs, all forms of gambling, nightclubs, massage parlours and other activities regulated by law because they impose health hazards; also, small and medium domestic enterprises with capital investments of less than US\$500 000 and services requiring a licence and continuing regulation by the national government. Furthermore, foreign investors can own not more than 40 percent of a company and the rest is owned by Filipinos. Many investors feel that the list and the cap in foreign investors' ownership are too restrictive to foreign participation in various endeavours.

The FDI has slightly improved in the last four years – US\$0.330 billion in 2004 to US\$2.928 billion in 2007. This could be due to a perceived improvement of the economy.

**Exchange rates:** For several years after the Asian economic crisis in 1997, the exchange rate of the peso to the US dollar was above PhP50. Owing to the depreciation of the value of the US dollar since late 2007 the value of the peso to the dollar has been between PhP44 to 45. This has greatly affected the exports of the country because it would take more dollars to buy the same amount of goods formerly bought before the depreciation of the US dollar. About 70 percent of the value of Philippine furniture exports goes to the United States (DENR 2005a). On the other hand, it takes fewer pesos to import raw materials than previously.

With respect to logs, there is little impact by the exchange rate because the Philippines has not been exporting substantial amounts of logs. Lumber and plywood exports have been affected somewhat.

**Inflation rates:** The General Wholesale Price Index in the Philippines increased to 10.4 percent in March 2008 from 8.6 percent in February 2008. In March 2007, the inflation rate was only 2.6 percent. The National Statistics Office reported that in August 2008, the inflation rate climbed to 12.5 percent, the fastest pace in the last 17 years. This has brought the average inflation rate for the first eight months of 2008 to 8.8 percent (The Philippine Star 2008). However, forest-based industries do not consider the increase in inflation rate as threatening because the growing of trees takes several years. Similarly, in the wood-processing sector it is not considered a threat either because once the equipment has been purchased, installed and in operation it is no longer affected by inflation. What are subjected to the impact of inflation are the logs and other inputs in the production of wood products such as plywood and other composite boards. The cost of power is also affected by inflation simply as a translation of the increasing cost of fuel.

When inflation rises to a certain level the government can institute corrective measures such as an increase in interest rates. Furthermore, the remittances of OFW, which in 2008 are expected to surpass the US\$14.45 billion remittances in 2007, have been keeping inflation in check. By September 2008 remittances were reported to be US\$12.27 billion.<sup>10</sup>

**Interest rates:** The average banks' interest rates were around 6.92 to 10.11 percent from January to October 2008 and the Central Bank has not seen any reason to change its overnight lending rates. However, even at this rate the private investors consider the interest rate rather high.

**Social and political stability:** The political situation in the country is rather unpredictable because of attempts to overthrow the government that were unsuccessful due to lack of public support. Recently, a fourth impeachment complaint has been submitted to the House of Representatives seeking the impeachment of the President because of perceived corruption and fraud in the 2004 presidential election. However, the impeachment complaint was voted out by the House Committee on Justice (the committee that determines whether there is validity in complaints) because of lack of substance (Pelovello 2008).

However, there is armed conflict in Mindanao, particularly with armed Muslim organizations such as the Moro Islamic Liberation Front and the Moro National Liberation Front which allegedly are fighting for their ancestral rights to their land. There are also armed groups in Muslim Mindanao which have been engaged in banditry such as kidnapping for ransom. This peace and order situation in Mindanao has dampened interest to invest in the country, particularly in the southern parts of the Philippines.

**Competitive markets:** The export of lumber from the Philippines has decreased tremendously since 1990 and can be traced to the commensurate decrease in lumber production due to the declining log supply. In the case of veneer, production increased from 1990 to 2004, but declined slightly in 2005. However, the export of veneer has remained more or less constant since 1999 to 2005. For plywood, production increased up to 2004 from 1998, but also dipped slightly in 2005. The export of plywood decreased after 1994 with some signs of improvement in 2002 to 2004, but again decreased in 2005. For forest-based furniture, the value of exports from 1996 to 2005 does not show a significant trend (DENR 2005a).

<sup>10</sup> Data based on reports of banks to the Central Bank: <http://www.bsp.gov.ph/statistics/keystat/ofw.htm>.

The decreasing trend in exports of forest-based products is due to increasing competition from neighbouring countries, including the PRC. To become competitive local producers need to improve their level of productivity. One investor has had to diversify products in order to survive. The investor has gone into production of builders' woodworks such as doors, jambs, mouldings and similar products which have found receptive markets abroad. Another investor has gone into fruit tree plantations to stay afloat and found this to be profitable.

Locally, the greatest competition of log producers comes from illegally cut logs. Because the suppliers of illegally cut logs have less cost of production they can outsell the legitimate log producers. Also, some sawmillers do not want to issue receipts for tax reasons, which the legitimate log producers cannot accept because it is not only illegal but also because they will run into trouble with their auditors.

It appears that in the international market it is only plywood that would have some degree of competitiveness because of lower cost due partly to the use of plantation logs and lower labour cost.

### **Infrastructure**

Infrastructure is a crucial determinant in the decision of local or foreign firms to invest or not. Investors tend to concentrate around places with dependable facilities such as transport, power, information, communication and water systems (Herrin and Pernia 1987). These are found mostly in economic zones. Thus, investors have concentrated in Metro Manila, Southern Luzon, Central Luzon and Metro Cebu, owing to the presence of better infrastructure, besides proximity to raw material sources and/or markets (Pernia and Quising 2003).

**Transportation:** Traffic in major cities in the Philippines, especially Metro Manila, is heavy. In 2002 the length of asphalt and concrete roads increased by 4 percent; however, registered vehicles increased by 8 percent up from 3.87 million in 2001 to 4.18 million in 2002.<sup>11</sup> The disproportionate increase of motor vehicles against the increase in roads explains the worsening traffic, especially in Metro Manila.<sup>12</sup>

Road state affects production and marketing costs because bad roads lead to higher fuel costs, higher vehicle repair costs and longer time to deliver goods. The absence of good road systems is a disincentive for investing in a sector.

The Philippines is an archipelago comprising more than 7 000 islands with three main groups. The use of ships and vessels to move people and cargo is very important to the economy. Policies on shipping, therefore, are crucial to doing business. The Philippine shipping industry is characterized by high cargo and passenger tariffs. It is alleged that competition exists only in a small percentage of the routes, while a cartel-like situation exist in the majority of the shipping routes. To address this situation the government instituted some reforms in 1990 through liberalization and deregulation. However, the

<sup>11</sup> Pernia and Maligalig. Op cit.

<sup>12</sup> Pernia and Maligalig. Op cit.

implementation of these reforms has been slow. Domestic shipping costs such as fuel, interest rates, insurance and income and freight tax as well as handling costs are reported to be higher than other countries in the region (Lorenzo 1997 as cited in Austria 2002). This situation is further aggravated by the underdeveloped and below standard conditions of ports (Presidential Task Force on Interisland Shipping Industry 1989).

The government has continued its efforts to liberalize and privatize shipping transportation operations resulting in a more competitive business environment. Some shipping companies have modernized their fleets and improved services such as fast ferries and luxury liners giving wider choices to customers (Catelo 2004).

In the forestry sector, companies operating in the forest build their own road systems because no such systems exist. However, their road networks have to connect to government (either national or provincial) roads which are often in bad shape. Where processing of logs to finished products is done in factories close to urban or urbanizing areas, government roads do exist, but some need repairs. One plywood manufacturer remarked that the government should improve the road system to reduce transportation costs. Ships and barges are often not an option because of the absence of these facilities nearby. Companies have to transport their logs or wood products some distance to the nearest port. One company opted to build its own port for long-term cost reduction in terms of vehicle repair, road repair and fuel cost.

The state of transportation facilities in the country has often been a disincentive to higher investments in the forestry sector.

**Telecommunications:** The National Telecommunications Commission (NTC) reported approximately 7 million telephone lines in 2002, catering to 3.3 million subscribers. However, in the following year the number of installed telephone lines decreased by 31 percent and the number of subscribers by 9 percent. Telephone density is nine lines per 100 people and four subscribers per 100 people. However, there has been a dramatic increase in the number of cell-phone subscriptions which reached 15.4 million in 2002 and increased by 46 percent in 2003.

Within field operation areas, forest companies establish their own communication systems. However, it is difficult to communicate outside. Often, there are no transmitter facilities for cell-phone companies and the use of satellites for cell-phone transmission is very expensive. Internet use is very limited or non-existent. Commercial telephone landlines are also non-existent in most upland operations of forest-based companies.

**Power:** The power rates for residential, commercial and industrial uses among Association of Southeast Asian Nations (ASEAN) countries in 2003 are shown in Table 7 (ASEAN Energy Center 2003). The rates have risen because of the ongoing worldwide energy crisis.

**Table 7. Ranges/kWh for ASEAN countries in 2003 (in US cents/kWh)**

Country	Residential	Commercial	Industrial
Brunei Darussalam	2.88-14.42	2.88-11.54 (7.21)	2.88-11.54 (7.21)
Cambodia	9.17-17.03	15.72-17.03 (16.38)	12.58-15.72 (14.15)
Indonesia	1.69-4.60	2.77-5.65 (4.21)	1.71-4.38 (3.05)
Lao PDR	0.55-3.8	4.18-5.22 (4.70)	3.51
Malaysia	5.53-8.94	2.63-10.52 (6.58)	2.63-10.52 (6.58)
Myanmar	8.14	8.14	8.14
Philippines	3.15-10.71	3.68-9.85 (6.77)	3.35-10.84 (7.10)
Singapore	9.23	4.42-7.18 (5.80)	4.16-6.69 (5.43)
Thailand	3.41-7.47	2.94-7.47 (5.21)	2.94-7.13 (5.04)
Viet Nam	2.92-8.17	4.24-13.96 (9.10)	2.83-13.96 (8.40)

Source: ASEAN Energy Center (2003).

In the early 1990s the Philippines suffered severe power shortages with brown-outs of ten to 12 hours a day. The shortage was solved when President Fidel Ramos contracted foreign and local power suppliers to augment the installed capacities of power-generating installations. This led to the enactment of the Electric Power Crisis Act and the establishment of the Department of Energy in 1993 (Perez 2002). In 2001, the installed power-generating capacity of the country was 13 380 megawatts (MW) with a dependable capacity of 11 191 MW. The peak demand for electricity in 2001 was 7 497 MW; there was a required reserve of 2 459 MW and a balance of 1 235 MW as excess capacity (Perez 2002).

In 2002, industrial power consumption declined in comparison other sectors due partly to theft and transmission losses. Power disruption causes production losses. A survey showed that small firms incur bigger losses than large firms because only 24 percent has individual or shared power generators.<sup>13</sup> In spite of the reported excess capacity indicated above and because of the experiences in the 1990s, 55 percent of large firms are equipped with generators that enable them to maintain continuous operations. Firms in provinces south of Metro Manila known as the CALABARZON (the provinces of Cavite, Laguna, Batangas, Rizal and Quezon) are so concerned about power inadequacy that 43 percent of all firms in these provinces either have their own generators or share them with other firms. This contributes to 14 percent of their energy consumption. Half of the electronics firms possess generators, as do 31 percent of the food and food-processing firms, 29 percent of textile and 25 percent of garment firms. The most sensitive industry group to power disruption is the food and food-processing industries. In Metro Manila the mean losses of small food and food-processing firms are greater, at 10 percent of their production volume. The study noted that owning and running power generators are more costly than obtaining electricity from the public utility grid.<sup>14</sup>

The cost of power is already high in the Philippines and it is expected to rise further because of the increase in the price of fossil fuel. Most forest-based companies generate their own power using diesel fuel. Because of the remoteness of its location and the poor road systems, one company has resorted to barging its diesel supply from Manila. Due to the

<sup>13</sup> Pernia and Maligalig. Op cit.

<sup>14</sup> Pernia and Maligalig. Op cit.

increase in the price of fuel the company can only provide a limited supply of diesel fuel for its field operations. The company, as its corporate social responsibility, has been providing power to the local government and the national police because the local electric cooperative has not been operating regularly. This has increased its power cost.

**Water supply:** Many of the logging companies have to develop their own water systems in the area. One company developed its own water supply and has been providing water to the local government and other government offices.

## **Governance and institutions**

### *Policy*

Various policy dimensions affect investments in the forestry sector. Among them are:

**Stability of policies:** Policies should not be static; they are expected to change with fluctuating economic, social and political situations. However, policies should be stable in the sense that they are not changed at the whims of policy-makers or because there have been changes in the administration of an office; neither should they be changed for the wrong reasons. Such a situation would create loss of confidence in the sector and would drive away investors.

Forest policies in the country are unstable. Whenever there is a new DENR Secretary, policies change, or whenever an event takes place in one area of the country policy is changed for the entire country.

For example, a disastrous flash flood occurred in late 2004 in the northeastern part of the country which media blamed on illegal logging and deforestation. As a result, and without the benefit of an investigation, the Secretary of the DENR cancelled logging operations in the provinces where the flood occurred and suspended all logging operations in the country (DENR 2004a). The legitimate logging companies in Mindanao and elsewhere suffered through no fault of their own, just because the climate induced this disastrous flood.

In another case, a people's organization (PO) was allegedly caught with illegally cut logs. Subsequently, all resource use permits (RUPs – permits to remove fallen or diseased trees in the natural forests of CBFMAs) throughout the country were suspended, even those that adhered to all government regulations. Some of the POs have outstanding loans for the establishment of small/mini-processing mills and as a result of the suspension of their RUPs they could not fulfill their loan obligations.

In the transport of logs or manufactured products such as lumber the regulation is that a 20 percent inventory of the load is made. Without warning, there was an order to conduct a 100 percent inventory. This resulted in the delay of shipment, not counting the cost that the shipper had to shoulder in the conduct of the inventory.

**Implementation of policies:** Often policies do not achieve the expected results because of poor or improper implementation. This stems from misinterpretation of the procedures or the implementers lack the initiative to pursue the intentions of the policy. An example is the

registration of tree plantations on private lands. The policy calls for the Community Environment and Natural Resources Office (CENRO) to take the initiative to register plantations. Instead, CENRO waited for the investor to go to the CENR Office to register his plantations.

Another example is the regulation removing the requirement of a harvesting and transport permit for trees planted in private lands (DENR 2004b). All that is needed is certification from the local government unit (LGU) or a registered forester that the logs were harvested from private lands. This is a regulation that smallholder investors have been clamouring for from the government to provide. However, the regulation has been abused. Some unscrupulous plantation owners and two registered foresters conspired to defraud the government by certifying a higher volume than what had been harvested and filled the difference by harvesting timber from elsewhere. This caused the suspension of a very well-intentioned policy that would have benefited smallholder tree farmers.<sup>15</sup>

### *Strength of the judicial system*

The judicial system is slow and the maxim of ‘justice delayed is justice denied’ is apt to describe the situation in the country. Furthermore, accommodations are made. One company filed a case against a *kainginero* (slash-and-burn farmer) but the public prosecutor has been making representations to the company to drop the case as an act of compassion to the *kainginero*.

Recently the Supreme Court of the Philippines has designated 117 trial courts as environmental courts to hear cases involving violations of laws protecting the country’s natural resources (Salaverria 2008). Forty-five of these courts were designated as forestry courts. It is hoped that this will speed up the litigation of cases.

### *Corruption*

Corruption is pervasive in the Philippines, from the lowest ranking regulatory officer to higher levels of government officers, as can be gleaned from reports in the local newspapers. In one case, Congress is investigating the alleged anomalous use of PhP728 million (US\$15.17 million) that was distributed to Congressmen and local officials prior to the 2004 national election, supposedly for the purchase of fertilizers. The alleged perpetrator, a former undersecretary of the Department of Agriculture (DA), said during the investigation that 159 members of the House of Representatives and local officials received their share from the fertilizer funds. Even those in cities and urban areas where no agriculture is conducted received shares (Diaz 2008a). In another case, six high ranking members of the Philippine National Police attended a conference in Moscow using government funds. The report of the police investigating panel said that the use of government funds for the purpose of the trip was illegal, violating RA 9498, the General Appropriations Act of 2008 (Diaz 2008b).

In an undated USAID-funded survey on corruption, companies were asked if anyone in the government had asked for a bribe. Replies were: LGUs (41 percent), payment of income

<sup>15</sup> F. Josapat, Chairman Bislig Barobo Hinatoan Lingig Tagbina Farmers Multi-sectoral Group Association, Inc. (an association of tree farmers in Caraga), personal communication, July 2008.

taxes (39 percent), national government permits or licences (28 percent), compliance with regulations on importation (13 percent), supplying government with goods and services (15 percent), collecting receivables from the government (11 percent) and utilization of government incentives (4 percent) (USDA 2005). The forestry sector is no exemption from this business blight.

A survey conducted by the Political and Economic Risk Consultancy Ltd (PERC) showed that the Philippines is the most corrupt nation in Asia. The survey conducted in January and February 2007 asked 1 476 expatriate executives to rate 13 countries in Asia as to which was the most corrupt. On a scale of 1 to 10, 10 being the most corrupt, the Philippines scored 9.40. Singapore and Hong Kong are rated to be the least corrupt. Asked whether corruption in a given country affected their willingness to invest or expand their investment, the Philippines scored 8.40 where a score of 10 meant that corruption in that country was a major deterrent to willingness to invest (The International Herald Tribune 2007).

Corruption is perceived to be widespread in the forestry sector. As related by the President of the Bislig Barobo Hinatoan Lingig Tagbina (BBHiLita) Multi-sectoral Group Association, Inc. of Surigao del Sur Province, which is registered on the Securities and Exchange Commission (SEC), the expenses of log owners when they transport their logs is about PhP3 000 (US\$66.67) per shipment.<sup>16</sup> This is for payment at check-points along the highway. He further said that if all the papers are in order, the persons manning the check-points look for traffic violations. Normally, log shippers 'pay' to facilitate the movement of logs and not be delayed at the check-points. In order to recoup their payment at check-points, the log shippers resort to overloading.

Corruption is a two-way street. The farmers ask for favours from government officials for which they have to pay the latter to overlook illegal activities.

Other potential sources of corruption are the many requirements that are difficult to comply with. The policy to first obtain a permit to establish a processing plant before obtaining a permit to operate the plant is a possible source of graft. However, this has been corrected by DAO No. 2003-41 (DENR 2003b), which combined the permit to establish and to operate a processing plant into one document.

### *Foreign ownership provisions and policies on repatriation of profits*

The Philippine Constitution provides that foreign investors can own 40 percent of equity in a corporation duly registered under Philippine laws. The Omnibus Investment Code (OIC) (EO 226 1987) provides that foreign investors can repatriate the entire proceeds of liquidation of investments in the currency in which the investment was originally made and at the exchange rate at the time the repatriation is made subject to the provisions of Section 74 of Republic Act No. 265 as amended. Furthermore, foreign investors can remit earnings in the currency in which the original investment was made and at the exchange rate at the time of remittance subject also to the provisions of Section 74 of RA No. 265.

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<sup>16</sup> F. Josapat, personal communication, July 2008. Op cit.

The constitutional provision of restricting foreign ownership of businesses to only 40 percent is a disincentive to investing in the country. Other neighbouring countries such as Singapore allow 100 percent ownership.

### ***Labour costs and skills***

The labour force is estimated at 27 million (AC4you.com 2008). It is said that the cost of labour in the Philippines is much cheaper than in some neighbouring countries (see Table 8). Filipino labour is well educated and it is highly available. Workers have a satisfactory command of the English language. However, the top echelon of Philippine labour is expensive due to education in the United States and other western countries. The unemployment rate is approximately between 8 and 9 percent and about one-fifth of the labour force is underemployed. Many Philippine labourers are working abroad such as in the United States, the Middle East and other Far East countries (AC4you.com 2008).

The IMF and the Asian Development Bank (ADB) prepared ratings of labour in Asian countries covering the period 1999 to 2003. These are shown in Table 8.

**Table 8. Labour ratings in selected Asian countries**

Countries	Managerial labour			Production labour		
	Quality	Availability	Cost	Quality	Availability	Cost
Philippines	3	1	2	3	1	2
Viet Nam	10	5	1	3	1	1
Malaysia	5	5	5	3	3	3
PRC	10	10	1	4	1	2
Indonesia	10	10	2	5	1	1
Thailand	10	10	4	4	2	1
Japan	1	1	10	1	10	10
Singapore	1	10	8	1	10	8
Taiwan, P.O.C.	1	8	9	1	8	9
Hong Kong, S.A.R.	1	10	10	1	10	8
Republic of Korea	5	10	9	1	8	7

Ratings: 1 = best grade available; 5 = average grade; 10 = worst grade  
Source: AC4you.com.

Philippine labour is very competitive with its neighbours, including labour cost at both managerial and production levels. They are also skilled. One forest-based company has a training programme for its labourers/workers. But because of their skills they are being enticed to join foreign companies outside the Philippines.

Recently, however, the increasing price of fossil fuel has had some effects on the labour market in the country, as in other countries. With the increasing price of oil the transport sector has increased fares. Similarly, the labour sector has been asking for an increase in take-home pay. Increase in salaries and wages will certainly increase the production cost of products, including those of the forestry sector. These will make the local products less competitive locally against imports and in the international markets. The handicraft industry

has been complaining about the high cost of production because of the high cost of power and increasing cost of labour in the country.

### *Rules and regulations on land tenure, usage rights and actual practice*

Use of public forest lands by the private sector (investors) is covered by production-sharing agreements (PSA) except for the TLA. The last of the TLAs will expire in 2011. The PSA is a partnership between the government and the private sector where the resources are the share of government and the cost of operations is the share of the private sector. However, the tenure is not stable. It has been cancelled or suspended at will by the government. As indicated earlier, because of severe floods that occurred in Aurora and Quezon provinces in December 2004, the DENR suspended all logging operations in the country because logging was reputed to have caused the floods, notwithstanding that they could have been caused by the continuous rain that had occurred in the area for a number of days.

The incident should have been investigated first before any action was taken. However, all logging permits in Quezon were cancelled (there was no logging permit currently issued in Quezon) (DENR 2004a) and all permits in the rest of the country were suspended, even those as far away as Mindanao. The suspension of logging permits in Regions 11 and Caraga Region were eventually lifted but for the rest of the country this is on a case-to-case basis (DENR 2005b). The government is highly sensitive to criticism from the press that logging is the main cause of floods.

In another case, a load of allegedly illegally-cut logs was confiscated from a PO (usually a cooperative or an association composed of residents in the community). The government suspended all CBFMA RUPs throughout the country. The PO should have been investigated and penalties imposed if it was found guilty. The suspension was later lifted.

### *Land availability*

A document was prepared by the DENR showing potential forest land areas for agribusiness investments (Table 9).<sup>17</sup>

The total area that is available for investment is around 1.7 million hectares, but these areas need further verification as to whether they are occupied and/or claimed or not. For investments in partnership with POs, the area is 1.9 million hectares.

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<sup>17</sup> DENR. Undated. *Potential areas for upland development/agribusiness investment (four million hectares timberland areas)*.

**Table 9. Potential forest land areas for agribusiness investments (hectares)**

Region	CBFM projects	PhilForest area <sup>†</sup>	Remaining potential areas for validation	Total
CAR	46 573		258 652	305 225
1	47 345	3 110	51 245	101 700
2	442 669	42 227	215 648	700 594
3	78 066	7 540	68 052	153 657
4A	17 623	268	41 611	59 502
4B	189 147	2 304	241 501	432 953
5	41 385	1 812	38 947	82 145
6	43 783	50	70 443	114 276
7	45 477	9 221	60 223	114 921
8	107 099	1 922	225 494	334 515
9	59 574		85 736	145 310
10	295 974	2 477	113 320	411 771
11	195 396	62 394	127 211	385 001
12	87 743	74 515	101 464	263 722
13	196 269	167 203	99 594	463 066
ARMM	32 232			32 232
<b>Total</b>	<b>1 926 355</b>	<b>375 093</b>	<b>1 799 141</b>	<b>4 100 539</b>

<sup>†</sup>The Philippine Forest Corporation is a subsidiary of the Natural Resources Corporation under the DENR.

Source: DENR (Op cit.).

In the case of CBFM areas, there is need for investment because the POs cannot develop their areas alone. A partnership among the POs, an existing wood processor and a bank, could be worked out to access credit for development of CBFM areas. The wood processor would be the ready market for the produce of the POs, a requirement by the banks before they provide credit. A modification of the scheme is to get the financial institution to provide funds as equity.

The Philippine Forest Corporation (PhilForest), a subsidiary of the Natural Resources Corporation of the DENR, has been mandated to develop jatropha (*Jatropha curcas*) for the production of biodiesel. It has been allocated about 375 000 hectares. The target is 2 million hectares.<sup>18</sup> Competition for land can come from the growing of coconut and oil-palm in forest lands for the production of raw materials for methyl esterified coconut biofuel.

The conversion of prime agricultural lands into economic/industrial zones and for housing near metropolitan areas such as in the provinces of Laguna, Rizal, Cavite, Batangas, Quezon and Bulacan in Metro Manila has shifted food production into the uplands. Thus, forest lands have been converted to vegetable gardens and pineapple, banana or papaya plantations as found in Mt. Data in the Cordillera Administrative Region (CAR), around Mt. Matutum in

<sup>18</sup> Celso P. Diaz, Consultant, Philippine Forest Corporation (PhilForest), personal communication, July 2007.

South Cotabato and in Mt. Apo in Davao and in other areas in the country. A large food and beverage corporation in the country has been granted lease of forest lands to the amount of 1 million hectares for the establishment of agricultural plantations.

The DENR has identified Caraga as a forest corridor and has earmarked the area for forest development (DENR 1999b). Other suitable areas such as the other regions of Mindanao which are rarely visited by typhoons are equally suitable for plantation development.

### *Market accessibility*

Smallholder tree farmers in Caraga plant trees because there is a ready market for their logs. There are six veneer plants and seven plywood mills operating in the Butuan City area alone, not to mention many sawmills in the area. Because of the presence of these mills the farmers are certain that they can sell their logs. As the veneer and plywood mills are processing mostly *falcata* (*Paraserianthes falcataria*), the farmers are planting this species mostly.

Market accessibility also means the ease with which products are moved from production areas, whether from plantation sites or factories to places of sale. Movement of forest products, as is also the case of other farm products (vegetables, poultry, or swine), is often hampered by the presence of check-points along the highways, sometimes occupied by a composite team of DENR employees, the military/police and customs officers. Frequently, tree farmers are 'fined' for imagined infractions. This has been a disincentive for investment in the forestry sector as it is in other sectors of the economy. This is the advantage of locating in export-processing zones where exporters are not harassed at check-points.

### *Tax policies and practices*

Taxation on corporations depends on whether the corporation is resident or not. Resident corporations are those that are formed/organized under Philippine laws. This differentiation is important because it determines whether the corporation is taxed in the Philippines and if so, how. Corporate tax is 35 percent (AC4you.com 2008). In addition, there are indirect taxes such as excise tax, percentage tax and stock action tax. VAT is imposed on the value of goods and services sold based on the gross retail price. A law increasing VAT from 10 percent to 12 percent was enacted in 2005 and has not been amended since (RA No. 9337 2005). Excise tax is imposed on goods manufactured or produced in the Philippines for domestic sale or consumption.

On 15 October 2007 the Bureau of Internal Revenue (BIR) issued Revenue Regulation No. 13-2007 (BIR 2007) prescribing the payment of VAT in advance by holders of permits (TLAs, IFMAs, TFLAs, AFFLAs, CBFMAs, SIFMAs) for the "transport of naturally grown or planted timber products for the purposes of consummating a sale". Even plantation developers in private lands are covered by the regulation. The advance VAT payment is based on the value of the wood on a cubic metre basis. The revenue regulation has listed a base price for various species in the major islands of the country as the basis for calculating the VAT. The VAT may be adjusted if there are changes in the base price and is deemed necessary by the Commissioner of Internal Revenue.

The holders of large timber licence agreements aver that the payment of the VAT in advance has little effect on their operations because they will eventually pay the tax anyway. However, to smallholder farmers this may present a problem for those who do not have the cash for the advance payment. If they cannot pay the advance VAT they cannot transport their products and therefore they cannot not sell them. This could be a disincentive.

Plantation logs are exempt from payment of forest charges (RA No. 7161 1991; DENR 1997a; DENR 2004b). However, some provinces have imposed taxes on plantation-grown trees under the guise of environmental protection fees. In Agusan del Sur, a province in the Caraga Region where many smallholder farmers plant trees, the environmental fee is PhP35 (US\$0.78)/m<sup>3</sup>.<sup>19</sup> In Bislig City the environmental fee is PhP12/m<sup>3</sup> (US\$0.27).<sup>20</sup> This is how the LGUs can increase their income. However, it is a major disincentive to smallholder farmers in developing tree plantations.

### *Incentives*

Incentives are part of the overall investment environment in a particular country. The general incentives provided to businesses in the Philippines are contained in the Omnibus Investment Code (OIC) issued in 1987 under Executive Order No. 226 (EO No. 226 1987) and subsequent EOs amending it (EO No. 313 2004; EO No. 528 2006). Its purpose was to develop the country's industries, establish a competitive investment environment and discourage monopolies. The law provides a number of incentives to businesses and installed systematic procedures by which local or foreign companies or projects can register with the Board of Investments (BOI).

Under EO No. 226, incentives, fiscal and non-fiscal, are provided to preferred areas of investment, pioneer or non-pioneer, export production as well as rehabilitation or expansion of existing operations. Pioneer enterprises include those enterprises engaged in the manufacture and processing of products or raw materials that are not yet produced in the Philippines in large volume. It also involves the design, formula or system applied, as well as agricultural, forestry and mining activities, the services and energy sectors (EO No. 226 1987).

Among the incentives provided to qualified investments/projects are income tax holidays, tax credits, tax and duty exemption for imported raw materials and equipment, hiring of foreign labour, exemption from contractors' tax, a simplified customs procedure and other tax incentives. Investors can repatriate profits and earnings, pay foreign loans and interest and gain freedom from expropriation. These incentives can only be used for a period not exceeding eight years. EO No. 226 has been amended to extend the period of availment (EO No. 313 2004; EO No. 528 2006).

Apart from the general incentives to enterprises registered with the BOI there are other incentives provided to investors in the forestry sector. Plantation logs and other plantation products are exempted from payment of forest charges (RA No. 7161; DENR 1997a; DENR 2004b). There is also no restriction on the export of these products as opposed to the ban on the export of logs from the natural forest.

<sup>19</sup> RTD Virgilio de la Cruz, DENR Caraga, July 2008, personal communication.

<sup>20</sup> Florio Josapat, July 2008, personal communication.

Some provinces have provided incentives to various types of businesses. Zambales Province provides agroforestry-oriented and other resource-based industries with capital of not less than PhP20 million (US\$444 444.44), or those with additional capital of PhP20 million, full exemption from payment of permits from the Office of the Governor for three years upon start of actual commercial operation; commercial tree plantations, starting from establishment of the plantation, are exempt from payment of real estate taxes, amusement tax and land tax for 15 years (Province of Zambales Ordinance No. 2002-89 2002).

### *Public perception of forestry and forest utilization*

One of the institutions that can easily shape public opinion is the media. And one weakness of the Filipino is believing what he/she reads in the newspapers and what he/she sees or hears on television or radio. Because logging has been associated with forest destruction many media outlets equate natural calamities such as flash floods and landslides as the results of logging regardless of climatic and meteorological circumstances.

The DENR has changed policies because of adverse media reports on the forestry sector, resulting in the cancellation of logging licences in the provinces of Aurora and Quezon because of flash floods that occurred in these provinces, and the suspension of all logging permits in other parts of the country. This situation has dampened any enthusiasm in investing in the forestry sector.

Another illustration of the tip-toeing of the DENR on the subject of timber harvesting is its policy with respect to the culling of poor quality trees in its seed production areas. As a source of better quality seeds for its reforestation work, the DENR has established seed production areas (SPA) in each of the 16 regions in the country. SPA sites were selected from among the forest plantations within the region. Superior trees (of good form, health and height) were identified and marked as potential sources of seeds. To ensure that seeds produced by these selected trees are of high quality, deformed and poorly growing trees should be culled. However, no matter how many times regional officers request the cutting of deformed trees, the permission is never granted because of the DENR's fear that this may not be understood by the public who will suspect that the DENR itself is harvesting trees from its plantations.

On 11 March 1998, the DENR issued AO No. 98-11 (DENR 1998a) lifting the ban on the export of lumber. The purpose of the AO was purportedly to help the country earn foreign exchange and help stabilize the peso which was adversely affected by the regional economic crisis at the time. However, the public had a different perception of the issue, seeing it as another outlet for illegally cut logs and would translate into further destruction of the forest. The DENR relented and issued DAO No. 98-19 (DENR 1998b) recalling DAO No. 98-11.

### *Procedures and requirements for starting a business*

Starting a business in the Philippines requires several steps depending upon the type of business. For single proprietorship, registration is with the Department of Trade and Industry (DTI) and one can register at the nearest DTI office in the province. The DTI has an office in every province. Partnerships and corporations have to register with the SEC. Corporations must have at least five incorporators and a maximum of 15. Businesses must register with the BIR and obtain a permit to print official receipts and obtain a Tax Identification Number. All

businesses must also obtain a business permit from the municipal local government unit where the business is located. Such a permit is often known as the Mayor's Permit. The Mayor's Permit must be displayed in the place of business at all times.

Any business that deals with natural resources, either through extraction/harvesting, or buying, selling, or processing, must obtain a permit from the DENR. Depending upon the type of business, the applicant must start the application at the CENRO, which then processes the documents and transmits them to the Provincial Environment and Natural Resources Office (PENRO) and to the Office of the Regional Director. For some permits the Regional Executive Director can issue the permit, otherwise the application goes to the Office of the Secretary through the Forest Management Bureau (FMB).

For businesses that have an impact on the environment, such as timber harvesting or processing, an Environmental Compliance Certificate (ECC) has to be obtained from the Environmental Management Bureau (EMB) of the DENR.

At the moment, all applications for establishing new processing plants or even expansion of existing ones are on hold pending a review of policies on the matter. Until 2004, the DENR required investors who wanted to establish a processing plant to first obtain a permit to establish the plant. Once the plant had been constructed, the investor had to obtain a permit to operate.

### *Dealing with licences*

Permits for processing plants that are owned and operated by holders of TLAs, IFMAs and SIFMAs terminate once the tenure agreement ends. Permits for processing plants not owned by tenure holders have a duration of three years, renewable every three years. Municipal/city business permits are renewable every year.

Getting a tenure agreement approved or a licence to establish and operate a processing plant is not easy in the Philippines. It takes time to obtain such permits and some applications for tenure agreement have taken years, often because some of the requirements are missing and it takes time to obtain feedback that the documentation of the application is not complete. There are also too many requirements. One such example is in the application for a permit to establish and operate a mini-sawmill. If the applicant does not have a concession he has to show proof through a log supply agreement between him and a log supplier that he has a legitimate source of logs. No investor would plunge into establishing and operating a sawmill if he has not identified sustainable sources of legitimate logs. One also needs to submit a feasibility study. For the same reason, a legitimate investor would not invest without assuring himself first that he would make a profit in that investment.

The government's wood-processing plant rationalization policy is a constraint to investment in the sector. The policy seeks to determine an equilibrium of log supply and demand in a given region or province and seeks to issue permits on the basis of that equation of log supply and demand. It should be left to the investor to determine whether there is a sufficient supply of legitimate raw materials. It should be a business decision on the part of the investor and not dependent on government policy. The government can go ahead and determine log supply and demand information only to assist the investor to make a decision

and not as basis for issuing permits. Investors may decide to go into plantation development where there is log deficiency if all other factors for investing in plantations exist.

Zambales Province issued Provincial Ordinance No. 2007-67, otherwise known as Amended Guidelines for Environmental Regulations in the Province of Zambales, Superseding Provincial Ordinance No. 2005-17 (Province of Zambales 2007). The ordinance prescribes projects/undertakings to be covered by the Provincial Environmental Compliance Certificate (PECC), such as environmental enhancement projects like tree-planting projects in forest or sloping areas (regardless of size). A schedule for application and a processing fee is given in the ordinance.

### *Obtaining credit*

Smallholder tree farmers do not have easy access to credit. Presently there is no window at the Land Bank of the Philippines (LBP) and the Development Bank of the Philippines (DBP) from which farmers can access capital. At a normal credit facility, the farmers are required to put up collateral, normally titled land. Previously, the LBP and DBP had a programme catering to smallholder farmers, but it was a failure. Accordingly, repayment was minimal. Furthermore, the banks now consider tree farming as high risk because of the long gestation period before the trees become mature enough for harvesting. Normally the banks would only provide a two- to three-year grace period prior to commencing payment of the loan. What they are now looking for before they can consider any credit to tree farmers are ready markets, technical assistance for the farmers and sources of subsistence for the farmers.

Both banks are open to a 'Big Brother' scheme. An anchor firm, which is a processor, enters into a contract with a PO or a smallholder farmer for the former to buy all the logs produced by the latter. A scheme would also be considered where a developer establishes a plantation and sells the plantation to a buyer, which could be a PO. When the plantation is three years old and the seedlings are assured of survival, a PO would access a loan from the banks and buy the plantation. The plantation developer uses the proceeds from the plantation that had earlier been sold in developing a new plantation, and the cycle is repeated. This could be a viable option for CBFM areas.

### *Investor protection*

There are various risks involved in plantation development. First is the availability of rain to water the seedlings, especially in the first six months after planting. Second is the possibility that the plantation would be attacked by pests and diseases, and thirdly, which is the greatest risk of all, is the occurrence of fire. There is also the threat of destruction by typhoons and floods.

Unlike the agriculture sector where crop protection insurance exists, there is no such insurance for tree plantations. It is not known if any of the bigger stakeholders have taken insurance for their plantations. To improve the investment climate, the government should consider establishing tree crop insurance for the protection of plantation developers.

Tenure holders who have agreements with the government are compensated for their investments, including plantation development, upon termination of the agreement (DENR 1999a; DENR 2004b).

### *Paying taxes*

Plantation logs are exempt from payment of forest charges. However, some provinces have imposed what is euphemistically called ‘environmental protection fees’. This is a fee collected on harvested forest products regardless of source (naturally grown or planted) to increase provincial income. Forest products are the target in provinces where they are abundant. As stated earlier, in Agusan del Sur, a province in the Caraga Region where many smallholder farmers plant trees, the environmental fee is PhP35 (US\$0.78)/m<sup>3</sup>.<sup>21</sup> In Bislig City the environmental fee is PhP12 (US\$0.27).<sup>22</sup>

### *Trading across national and international boundaries*

There are a few restrictions on the trade of forest products. One is that lumber from naturally grown trees cannot be exported. However, veneer and plywood from naturally grown trees can be exported. What is the difference between lumber and plywood? Was it the intention to assure that logs from the natural forest are made available as raw materials for the veneer and plywood industry? This is not a valid reason because lumber is produced from logs inferior (lower grade) to veneer logs (they command a higher price than sawlogs) and veneer logs would not be sawn into lumber. Or is it because the furniture industry needs good lumber from the natural forest? If so, the furniture industry would still have access to good lumber for as long as it is willing to pay for the price of good lumber that is exportable.

There is a ban on the export of raw rattan poles. This is mainly because of the dwindling supply of rattan in the country. Other neighbouring countries have also done this.

However, plantation logs can be exported. This is a great incentive for the establishment of tree plantations in addition to the regulation that plantation logs are free from forest charges.

### *Vision and leadership of the country’s forest industry and forestry agencies*

The government’s vision for the forest industry sector can be gleaned from the Medium Term Thrusts, Strategies and Priorities up to 2010 (DENR undated). The vision is for sustainable and more productive natural resource utilization that promotes investments and entrepreneurship and to attain self-sufficiency in forest-based products. The government seeks to accomplish this through greater business partnership between corporate and upland communities. The strategy is to assist investors in securing permits from other government agencies such as the NCIP and LGUs, link community-based programmes and small- and medium-enterprises to sources of finance and to provide technical assistance.

The industry sector, however, has a different vision, reflective possibly of the current situation in the forestry sector such as rapidly depleting forest resources. The industry does not seem to see much future in the sector. Recent events in the sector seem to support this observation. In July 2008, the Paper Industries Corporation of the Philippines (PICOP), one of the pillars of the industry in the last four decades, ceased operations. Troubled by diminishing timber supply and harassment by lawless elements that burned some corporation equipment, it was not able to meet its financial obligations, and thus was forced to close down.

<sup>21</sup> RTD Virgilio de la Cruz, July 2008, personal communication.

<sup>22</sup> Florio Josapat, July 2008, personal communication.

While a few large logging operations still remain, especially in Caraga and Region 11 (the last TLA will expire in 2011), the direction for forestry is towards smaller operations. The issuance of EO No. 263 (EO No. 263 1995), which established CBFM as the strategy for sustainable management and development of forest lands and resources of the country, has set the tune. This means that large forest industries have gone and the country has embraced (in policy at least) community forestry as an industry base. In addition, the government has provided policy support to small-scale forest plantation development both in government (DENR 2004b) lands and in private lands (DENR 2004a).

In the 1990s the DENR provided support to community forestry through foreign-assisted projects that tried to develop the forest areas of participating POs. Lately, however, there has been little financial assistance to upland communities, either in grants or loans. The President, however, has allocated PhP2 billion for upland development for 2009. The FMB has been tasked to develop the implementing programme and plan for the PhP2 billion.

In the wood-processing subsector, it appears that the government is ambivalent in its policies. While it has removed some barriers to investment such as combining the permit to build and the permit to operate a processing plant into just one permit, and reducing the requirements for harvesting and transport of logs, it has also instituted the wood-processing rationalization policy. Consequently, the various regions have to determine new processing plants and where in the region they can be established based on the availability of raw materials. This is a major disincentive to investors who would want to establish, for example, a sawmill in a province that does not have timber resources, although it would be profitable to buy the logs elsewhere and process them in a log-deficient province.

## Issues on investment in the sector

### ***Corruption***

Corruption probably ranks the highest among the constraints to investments in the sector. The most pervasive is extortion at check-points along highways. Check-points were installed to ferret out illegal logs; however, they have become instruments for extortion. They are manned not only by DENR personnel but also by other agencies such as the police, the military and sometimes customs. Even if the logs and other forest products are properly documented and legal, personnel manning the check-points still demand payment. Smallholder farmers attest to the presence of corruption at check-points. Woodwork manufacturers from Region 2 (northeastern provinces) attest that they have to pay at check-points when transporting their products to Metro Manila.<sup>23</sup> Other items such as vegetables, poultry, or swine are also subjected to extortion at the check-points.

Corruption, if there is any, at the higher echelon of officials at the DENR is difficult to document. However, a few ranking officials are on 'floating status' (they are assigned to the Central Office without specific duties to perform) while their cases are being investigated. These officials are not yet guilty unless proven otherwise, but their 'floating status' shows that at least a complaint has been lodged against each of them.

<sup>23</sup> Personal communication with manufacturers in Cagayan, Isabela and Nueva Vizcaya provinces, 19-23 January 2009.

The Office of the President has instituted some measures to curb corruption. The Presidential Anti-Graft Commission has been investigating cases of reported corruption by government officials and many have been suspended or dismissed from the service. Those dismissed forfeit their retirement benefits and cannot be hired in any government position. The President has also instituted a lifestyle check on government officials to determine those who are in a position to commit graft and corruption and who are living beyond their means. Unfortunately, these two measures are not sufficient to eradicate these problems in government service.

### ***Shifting policies of the DENR***

The DENR shifts policies with little or no consultation with stakeholders. Logging permits were cancelled in Quezon and Aurora provinces and suspended for the rest of the country after the occurrence of floods and landslides because of heavy and prolonged rain without any consultation with the affected industry owners (DENR 2004a). Later, the suspension was lifted only for Caraga Region and Region 11, but for the rest of the country the suspension remained. On 5 January 2006, the DENR issued a Memorandum from the Secretary (DENR 2004a) canceling all existing IFMAs, ITPLAs, SIFMAs and CBFMAs because of acute non-compliance with the terms and conditions of their tenure instruments. This action of the DENR has halted activities of the various tenure holders, including pending plantation development and wood processing. Apparently, there was no consultation with the stakeholders prior to the issuance of the order.

### ***Overregulation of the forestry sector***

The government often has policies that are outdated and not in touch with the times. Take, for instance, the policy on sawmills. Republic Act No. 460 (RA No. 460 1950) prescribes that “no person, association or corporation shall operate a sawmill without securing a permit from the Director of Forestry”. The law was enacted in 1950. Why should the Director of Forestry (and now DENR) regulate a business operation such as sawmills, and for that matter veneer and plywood mills? Operating wood-processing mills is different from logging because the latter involves the extraction of natural resources. Sawmilling involves the conversion of a log that has already been given permission by the government to be harvested through a logging permit.

Establishing a sawmill is basically a business proposition and it is up to the investor to decide, based on feasibility studies, on when and where to establish the sawmill and how big it should be. The DENR issued Memorandum Order No. 96-09 (DENR 1996) ordering the rationalization of the establishment of mini-sawmills. The objectives of the order are to maximize wood recovery from forest and tree plantations; optimize wood utilization through the establishment and operation of more value-added wood-processing facilities; and establishment of low-capital but labour-intensive wood-processing plants in rural areas close to the raw material source owned and operated by cooperatives and community organizations. During interviews<sup>24</sup> with smallholder farmers in the Caraga Region, the main reason they gave for planting tree species in their small farms consisting of 1-5 hectares is the presence of wood-processing mills (sawmills, veneer and plywood) within short

<sup>24</sup> Interviews were conducted in Caraga Region in July 2008 with small-hold tree farmers' Chairman: Florio Josapat, Chairman: Bislig, Barobo, Hinatoan, Lingig, Tagbina Farmers Multi-sectoral Group Association, Inc.

distances from their plantations that are ready markets for their logs. If the DENR wants smallholder farmers to continue to plant trees it should allow more processing plants. The way to do this is to remove any regulations on the establishment of such plants and allow market forces to determine their viability.

The main reason, as expressed by DENR officers in the field, for the continued regulation of the establishment and operation of processing plants by the DENR is the fear that these mills (especially mini-sawmills) become outlets for illegally cut logs. The inability of the DENR to protect the forest and its plantations from illegal logging has been translated into a policy that restricts investments in the sector. One investor who wanted to establish a mini-sawmill as early as 2004 has been unable to do so because the rationalization plan of the region has not yet been approved by the DENR. It has been more than 12 years since regional offices have been directed by the DENR to prepare their rationalization plans.

The government often has too many requirements to enter into a business and the forestry sector is no exception. One foreign investor in the sector who is developing tree plantations on leased private lands when asked how to improve the investment climate in the forestry sector said that it would help considerably if the DENR reduced the requirements for establishing plantations and wood-processing plants. Take the case for establishing a mini-sawmill. A potential investor has to show that he has sufficient supply of raw materials from legitimate sources, a business plan and an ECC; the transformer directly supplying the electric power for the mini-sawmill from the main transmission lines should have maximum capacity of 30 KVA, or if supplied by an independent power-generating unit, the generator should have a capacity rating of not more than 40 KVA (DENR 1996). And there are other conditions. Why should the DENR regulate the power supply of a sawmill? It is up to the owner to determine the power supply.

The government is aware of the plethora of requirements that an investor has to meet in order to do business in the Philippines. For this reason the President issued Executive Order No. 428 (EO No. 428 2005) requiring all government agencies and instruments to “simplify rules, regulations, procedures and reduce reportorial requirements imposed on business and industry, with the aim of eliminating duplication and unnecessary requirements, thereby attracting and encouraging more investments and allowing business and industry to devote maximum effort and time to their operation and expansion rather than to compliance with excessive bureaucratic requirements”. LGUs were also encouraged to adopt similar measures (EO No. 428 2005). This has not resulted in the reduction of regulations in the forestry sector.

### ***Implementation of the Master Plan for Forestry Development (MPFD)***

In 1990, the DENR adopted a Master Plan for Forestry Development (MPFD) as its blueprint for planning forestry projects in the country. This was revised in 2003. However, the programmes identified in the MPFD have not been implemented.

### ***Export of logs and lumber***

Logs and lumber of natural forest origin cannot be exported (DENR 1988). Logs and lumber of plantation origin, however, can be exported except when coming from areas developed by tenure-holders such as TLAs as part of their obligation to reforest areas that are considered as government-owned (DENR 1989). Furthermore, lumber produced from imported logs

cannot be exported, except when processed inside export-processing zones, as it is difficult to distinguish the source of the logs – whether imported or locally produced – if they were processed into lumber elsewhere outside these zones. The ban on the export of log and lumber derived from natural forest is to ensure the continued availability of raw material supply to wood-dependent industries such as furniture, handicrafts, woodworks and the construction industry.

The policy to export logs and lumber from plantations is an incentive for plantation development, especially to smallholder farmers who plant in their own private lands. The ban on the export of lumber from natural grown timber does not engender investments in the sector, especially for those who would prefer to just import and process logs and then export the lumber.

### **Forest areas for investments**

DAO No. 99-13 (DENR 1999b) declared certain portions of the public forest lands in Caraga Region as the Caraga Forest Plantation Corridor (CFPC), covering 684 503 hectares. The areas under the CFPC are still subject to final ground verification. As stated earlier, the potential area identified by the DENR for upland development and agribusiness investment is about 4.0 million hectares with close to 2.0 million hectares yet to be verified. Investors still have to wait for the verification of the actual availability of the areas for investments and this could dampen the interest of investors.

In addition to verification of the availability of the land area, soil tests have to be conducted to determine site species compatibility; an environmental impact assessment has to be made as a prerequisite for obtaining an ECC, a requirement for investment especially in environmentally critical areas or environmentally critical projects.

Thus far, only the Caraga Region has been identified as a plantation development corridor. Other regions in Mindanao which are not normally visited by typhoons are equally suitable for plantation development.

There is also growing competition for use of forest lands other than for growing forest trees. PhilForest has been granted authority over 375 000 hectares for the production of biofuel species such as *Jatropha*. In addition, a large food and beverage corporation has been granted the use of 1 million hectares for agricultural crop production.

### **Absence of sources of high quality planting materials**

Large plantation developers such as IFMAs have the capacity to produce quality planting materials. Many of them have already established clonal nurseries. On the other hand, smallholder tree farmers such as those in Caraga, access their seeds for seedling production from any available sources, often from low quality mother trees. Some farmers sell seedlings of unknown seed sources along the highways. These are the types of planting materials accessed by smallholder tree farmers.

The DENR has already established clonal nurseries for the production of high quality planting materials. One private company in northern Mindanao is now producing cloned seedlings for sale to plantation developers.

### **Confirmation from the NCIP before a permit can be issued**

The DENR cannot issue any permit now on any forest area without asking confirmation from the NCIP because of the provisions of the IPRA law that requires free and prior informed consent<sup>25</sup> of IPs in areas claimed by them. The NCIP also has to affirm that the subject area is outside the claim of the IPs. This affirmation takes time and increases the duration of obtaining a permit.

### **LGUs enacting ordinances**

The Local Government Code (RA No. 7161 1991) authorizes the local governments to participate in the management of forest lands within their jurisdiction such as in forest protection, management of small watersheds and communal forest. However, LGUs see this as authority to enact local ordinances imposing certain requirements for the implementation of forestry projects within their jurisdiction.

A case in point is Zambales Province requiring industries considered to be environmentally critical projects or located within environmentally critical areas to obtain an ECC from the EMB. In addition, they have to obtain a PECC from the Office of the Governor (Province of Zambales 2007). Furthermore, the provincial government also directs the municipal/city mayors of Zambales not to issue a Business/Mayor's Permit to any business without the required ECC issued by the EMB and the PECC issued by the governor.

This requirement duplicates the ECC issued by the EMB and lengthens the process of obtaining a business permit. If the EMB issued the ECC there is no apparent reason why the provincial government should not issue a similar permit or even require such a permit.

The businesses covered by the ordinance include wood crafts, furniture, private land timber utilization and environmental enhancement projects such as tree-planting projects in forests or sloping areas regardless of size.

In another case, the Governor of the Province of Quezon issued an order banning the transport of gmelina (*Gmelina arborea*) logs grown in the province elsewhere. Farmers had contracted to sell their logs to pallet manufacturers in a neighbouring province. Because of this order, farmers could not sell their timber products. The purported reason for the ban was to ensure that local wood processors such as pallet manufacturers had sufficient raw material supply. The Regional Director of the DENR had to intervene to lift the ban.<sup>26</sup>

Plantation logs are exempt from the payment of forest charges, yet LGUs have been imposing additional taxes on logs produced in their jurisdictions, including plantation logs. This is an additional burden, especially for smallholder tree farmers, and a disincentive to plantation development.

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<sup>25</sup> This means that the consensus of all members of the ICC/IPs is to be determined in accordance with their respective customary laws and practices, free from any external manipulation, interference and coercion, and obtained after fully disclosing the intent and scope of the activity, in a language and process understandable to the community.

<sup>26</sup> E. Principe (former Regional Director who has jurisdiction over the Province of Quezon), personal communication, 2007.

### ***Advance payment of VAT***

The BIR has issued a memorandum imposing the advance payment of VAT on logs, including plantation logs, prior to transporting them. For large-scale log producers this may not present a problem, as they have indicated, but for smallholder tree farmers who normally do not have ready cash to pay for these expenses, this becomes restrictive because they have to make the payment prior to being paid for their logs.

### ***Access to capital***

One constraint in investing in the sector is the absence of a window for credit. When the Agrarian Reform Law was passed the LBP was established to facilitate the purchase by the government of lands that are subject to reform. With the country in dire need of timber for its industries, the government does not have a bank that caters to the needs of investors in the sector.

Meanwhile, the LBP has become a general development bank and can now provide credit for all development investors. The DBP is another government bank providing credit to developers. Because of previous experience when tree farmers were provided capital to develop small-scale plantations but did not pay their obligations, these two banks are now wary about lending to tree farmers. However, they would seriously consider lending to tree farmers again under a scheme where an anchor wood-processing enterprise serves as market for the farmers' products and agrees to guarantee the loan. They are even willing to consider providing equity to plantation development.

### ***Rationalization of the wood industry***

One of the major driving forces for plantation development as expressed by upland tree farmers in the Caraga Region is the presence of markets for timber. There are many sawmills, veneer and plywood mills in the region that are the major markets for timber. Conversely, the DENR has been strangling investors' initiatives to establish processing plants, particularly sawmills. It has instituted the rationalization of wood-processing plants requiring each region to submit a wood-processing rationalization plan which not all regions have complied with to date. Even expansion of existing processing plants is covered by this DENR directive. In the meantime, no processing-plant application in regions that do not have approved rationalization plans will be processed. This will kill the initiative of farmers to plant trees because they will not be able to sell their logs and the result will be further shrinking of the local supply of timber; expensive importation of logs and other wood products will result.

### ***Investor protection***

There is no investor protection for tree plantation development, unlike the agriculture sector where crop protection insurance exists. As the Philippines is in a typhoon belt, it is visited by an average of 20 typhoons a year and the tree crops are at risk of being destroyed by strong winds or by flash floods, especially during the early stages of plantation development.

## **Recommendations**

1. To reduce corruption in the sector, the following recommendations may be considered:
  - Abolish all the check-points along highways that prey on the hapless log producers. Instead, the DENR should shift the monitoring of illegal logs to the point of exit of logs from the forest, or if that is not possible, to monitor the entry of logs to processing plants such as sawmills and veneer and plywood mills.
  - Simplify and reduce requirements for applications for tenure such as IFMAs, SIFMAs, AFFLAs, TFLAs, etc., as well as applications for the establishment of processing plants.
  - Remove altogether as a requirement for the registration of plantations the inventory of seedlings and require only information from the developers on the exact location of the plantations; this includes GPS data of the corners of the plantations and pictures of the seedlings. If necessary, CENRO officials may visit the area at government expense and not require the plantation developer to shoulder expenses for the visit. Registration of tree plantations, especially in private lands should be for data-gathering purposes only and not to regulate them.
  - Accelerate the investigation of officials who have pending graft and corruption cases and impose penalties on those found guilty and reinstate those found innocent.
2. The DENR should revise the policy of issuing permits for wood-processing plants, i.e., transferring them to the DTI for the issuance of business permits. Unlike logging or the harvest of rattan, bamboo and other forest products which is extraction of a natural resource, and thus should be regulated by the government, wood processing is basically a business activity and the decision to establish one should be left to the investor to decide on when to establish one and where to locate it. The DENR should monitor only the logs that enter the processing compound to ferret out illegally cut logs.
3. To promote investments in the sector, the DENR should immediately locate and verify on the ground areas that are available for investment. The boundaries of the areas should be delineated and maps should be prepared. A complete profile of the areas should be prepared to include information such as climatic type, general soil type, the presence of forest dwellers – whether IPs or settlers – population and whether any organization exists. Furthermore, site species compatibility should be conducted. If the area is occupied, discussions should be held about allowing the entry of investors into the area. Details of the agreement should be confirmed between the investor and the occupants.

Other preparatory documentation should also be carried out such as conducting an environmental impact study or an Initial Environmental Examination (IEE) for obtaining an ECC for environmentally critical projects or for those located in environmentally critical areas. While investments are welcome on public forest lands, conversion of forest lands for agricultural purposes should be studied thoroughly to avoid cutting of the forest to give way to agricultural crops. Furthermore, such investments could be directed to CBFM or CADT/ CALT areas to provide the opportunity for upland communities to benefit from such investments.

4. To provide more incentives to investors in wood processing, the policy of not allowing the export of lumber processed from imported logs should be studied carefully in the context of abolishing it if it is found to be a constraint to investment in the sector. Investors, especially local investors, may simply want to process imported logs into lumber and other finished products and export them if profitable. Again, this is over-regulation of the wood industry by the government.
5. An agreement should be made between the DENR and the NCIP regarding the issue of the IPs' free and informed prior consent. The process should be studied for the purpose of shortening it.
6. Regarding LGU requirements on investments in the sector, the DENR should discuss the issue with the LGUs and should obtain their permission as part of the investment package. It should also discuss with LGUs what policies the latter could adopt to attract investments in their jurisdictions.

Before the DENR changes its policies, especially those that affect the entire industry, it should consult with the stakeholders first. This should allow the industry and the POs/IPs to explain their perspective relative to any policy change and consequently help to stabilize policies in the sector.

1. Make use of the MPFD as the basis for planning national forestry projects/programmes.
2. The media is a formidable force in creating/forming public opinion. However, it believes that the only reason for floods or landslides during a typhoon or prolonged rains is prior forest destruction and therefore any harvesting of trees should be prohibited. The DENR should embark on a rigorous campaign for the media to understand that not all climate-related calamities are caused by timber harvesting.
3. Because of the absence of a development bank that caters to the needs of the forestry sector, the DENR should evolve a partnership among the plantation developers, the development banks (such as the LBP and DBP) and the wood-processing industry. The banks have signified their interest in supporting such a partnership where the wood processor acts as the ready market for the logs produced by the plantation developer and the bank would provide the capital for the venture. At least two wood processors have signified their willingness to participate in such a venture.
4. A variation of the scheme would entail the following: A plantation developer is provided credit by a development bank. He develops tree plantations within CBFMA areas or within the CADT/CALT areas of IPs. When the plantation is fully established, possibly after the third or fourth year of the development, the bank provides credit to the CBFM organization or to the IPs to purchase the plantation from the developer. With the proceeds of the sale of the plantation the developer can again develop plantations in another area. This scheme can be replicated in various areas of the country with several such activities ongoing at the same time. This assumes that the DENR identifies the potential areas for plantation development within CBFMA or CADT/CALT areas.

5. The DENR should discuss with the BIR regarding the payment of advance VAT. Smallholder farmers should be partly exempted and they should pay the VAT only after they have been paid for their log deliveries.
6. The DENR should share the technology for the production of high quality planting materials, especially with cooperatives and individual families engaged in seedling production. This will make high quality planting materials more accessible to smallholder tree farmers and improve their productivity. This will also support small family enterprises in seedling production.
7. In the agriculture sector there is national crop protection insurance to insure crops against natural calamities including pest and disease outbreaks. There is no such safety net in the forestry sector and yet forest plantations are also subject to similar disasters. The government should look at the possibility of establishing a tree plantation protection insurance system.

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# Encouraging private investment in the United States forest sector

Doug MacCleery and Megan Roessing<sup>1</sup>

*This paper does not reflect any policy position of the United States Department of Agriculture/Forest Service or the United States Government*

This case study is part of the project Creating Space for Private-Sector Financing in Forestry – Removing Constraints to Investments. The study is designed to investigate the effects of factors influencing domestic and foreign investment in forestry in the Asia-Pacific region and to provide advice to governments for enhancing the investment climate through the removal or adaptation of constraints.

## Background and overview of the forest sector in the United States

Forests have exerted a major influence on the history of North America and on the economies and cultures of its peoples. Native peoples and early settlers from Europe relied on forests as an indispensable source of food, clothing, fuel and building materials for homes, as well as for spiritual sustenance. As European/American populations grew, especially after 1750, forests continued to be a primary source of fuel and raw materials. Wood was the primary fuel used in this country until the last half of the nineteenth century. Wood warmed people, cooked their food, produced iron and drove locomotives, steamboats and engines. People used lumber, timber and other structural products as the primary material for building houses, barns, fences, bridges, ships and even dams and locks. These wood products were essential to rural economies across the nation, as well as to industry, transportation and the development of towns and cities (MacCleery 1992; Williams 1989).

Forests were also habitat for the wildlife that supplemented the diet of millions of Americans for centuries. However, even more important to the American diet was food produced on land cleared of its forests and employed for agricultural use. This was by far the primary cause of forest loss.

In the spiritual dimension, the forest, and the wildness it represented, has also played an important role in the identity of the nation. This was expressed in the writings of Henry David Thoreau, Ralph Waldo Emerson, George Perkins Marsh and others, and was first evidenced politically during the late 1800s by efforts to address concerns over the rapid loss of forests and decline in wildlife populations. There is no question that without its forests, the United

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<sup>1</sup> United States Department of Agriculture/Forest Service.

States would have had a decidedly different history, and would be a decidedly different place than it is today (MacCleery 1992; Williams 1989).

### Area and nature of forests

After two centuries of decline, the area of forest land in the United States stabilized by about 1920 and is currently about two-thirds what it was in 1600. Today, agricultural lands continue to revert back to forests, but this is being offset by forest loss due to urbanization (USDA/Forest Service 2008b).

Currently, the United States has the fourth largest existing forest estate of any nation, with 8 percent of the world's forests, exceeded only by the Russian Federation, Brazil and Canada. About 33 percent of the United States (304 million hectares, 750 million acres) is forested (USDA/Forest Service 2008b) (Figure 1). These forests vary from sparse scrub woodlands in the arid, interior West to the highly productive forests of the Pacific Coast and the South.<sup>2</sup> Forest types range from pure coniferous forests to multispecies mixtures, including extensive and diverse deciduous forests.

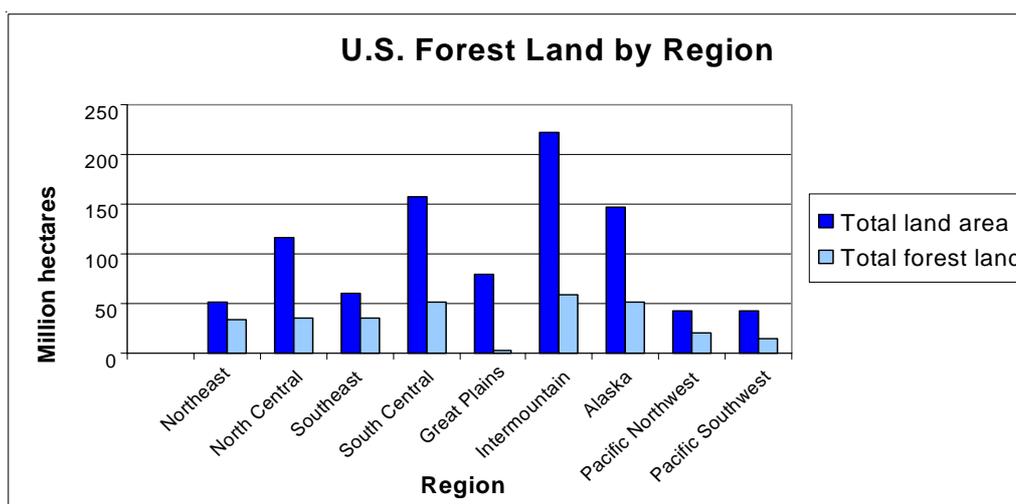


Figure 1. Forest land by region (USDA/Forest Service 2008b)

About two-thirds (208 million hectares, 514 million acres) of the nation's forests are classified as productive enough to produce commercial forest products and are not legally reserved from timber harvest. About 10 percent (30 million hectares, 74 million acres) of forest land is reserved for non-timber uses and managed by public agencies as parks, wilderness or similar areas. An additional 22 percent of unreserved forests (66 million hectares, 162 million acres) are unproductive for growing industrial wood, but are of major importance for soil and watershed protection, biodiversity and wildlife habitat, domestic livestock grazing and other uses (USDA/Forest Service 2008b).

<sup>2</sup> Forest land is land at least 10 percent stocked by forest trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated (USDA/Forest Service 2001).

### **Land area, forest ownership and timber harvest**

*Historic shifts in forest area and management emphasis by ownership category:* American society in the twentieth century changed from rural and agrarian to urban and industrialized. America's forests were the beneficiaries of a number of major technological changes that collectively acted to substantially reduce the pressure placed on them by human demands. Conversion from wood energy to fossil fuels took a huge burden off American forests, particularly as population levels continued to grow. Today's farmers, on average, grow five times more food per hectare than their grandfathers did in the 1920s. Because of this, the inexorable, three century-long conversion of forests to farmland largely halted in the 1920s.

The conventional wisdom at the beginning of the twentieth century was that, due to the long time frames and low economic returns involved in growing trees, the private sector could not be relied upon to shoulder much of the burden for growing the nation's wood, once the timber in the original forests was harvested. In addition to watershed protection, growing timber over the long term was one of the rationales for establishing the National Forests System.

Before 1930, large-scale private timberland ownership coupled with sustained management of timber was uncommon. Application of scientific principles to forest management was advocated by early American foresters and some industrialists, who proposed more favourable tax treatment to promote investment by deferring local property taxes until timber was harvested. However, decades passed before such laws became common. Eventually, rising wood product prices and tax law changes encouraged both improved wood utilization and spurred private sector investment in timber growing. Large-scale industrial ownership coupled with sustained management of timberland reached its heyday in the latter half of the twentieth century. As will be discussed later, by the end of the twentieth century large-scale industrial timberland ownership was supplanted by large-scale institutional timberland ownership.

There has also been a substantial shift in the mix of uses and values the public seeks from its forests (particularly public forests). Over the last two decades there was a substantial reduction of timber and other commodity outputs from federal and other public lands as the management focus of these lands shifted to recreation and biodiversity protection. Between 1985 and 2000, timber sales from the national forests declined by more than 80 percent and in 2007 the national forests accounted for only about two percent of timber harvests (Table 1). This reduction in harvest from public lands caused a shift in harvest to private lands, especially in the South, and to Canadian forests.

Since 1953, the area of forest land set aside in land-use categories that prohibit timber harvest has almost tripled to 30.2 million hectares (74.6 million acres) (USDA/Forest Service 2001; USDA/Forest Service 2008b). In spite of this shift in preferences for public land management, today's urbanized nation places record demands on forests for wood production. In addition, urbanization is reducing the area of forests available both for environmental services and wood production.

**Table 1. Land and forest area, ownership and timber harvest in the United States (2008)**

Ownership category	All land		All forest land		Productive, non-reserved forest land		Annual timber removals	
	Area (million ha)	%	Area (million ha)	%	Area (million ha)	%	Million m <sup>3</sup> /yr	%
<b>Private</b>								
Corporate	—	—	55.9	18%	42.9	21%	212.7	44.1%
Non-corporate <sup>3</sup>	—	—	115.3	38%	101.3	49%	232.0	48.1%
Subtotal private	576	63%	171.2	56%	144.3	69%	444.7	92.3%
<b>Public</b>								
<u>Federal:</u>								
National forest	77	8%	59.6	20%	40.0	19%	10.7	2.2%
BLM	106	12%	19.3	6%	2.7	1%	4.3	0.9%
Other federal <sup>4</sup>	78	9%	21.7	7%	3.0	1%	3.0	0.6%
Subtotal federal	261	28%	100.5	33%	45.6	22%	18.0	3.7%
<u>State and local:</u>								
State	—	—	27.9	9%	14.2	7%	15.8	3.3%
County/municipal	—	—	4.4	1%	4.0	2%	3.5	0.7%
Subtotal: state/local	79	9%	32.3	11%	18.2	9%	19.3	4.0%
Subtotal public	340	37%	132.8	44%	63.8	31%	37.3	7.7%
<b>Total all owners</b>	<b>916</b>	<b>100%</b>	<b>304.0</b>	<b>100%</b>	<b>208.1</b>	<b>100%</b>	<b>482.0</b>	<b>100.0%</b>

Sources: Forest area, ownership and timber harvest from USDA/Forest Service (2008b). Timber removals for Bureau of Land Management (BLM), federal, and state and local categories are estimates. Land area figures are based on USDA/ERS (2001) and USDA and US Department of Interior statistics.

**Current forest ownership patterns:** Forest ownership is diverse and includes extensive private forests, federally managed public forests and public forests managed by states and local governments. As a general rule, federal and other public forests are managed for amenity or multiple-objective purposes, such as watershed protection, wildlife management, ecosystem diversity and, sometimes, timber production.

Private forests comprise 56 percent of all forest land and 69 percent of forests that are considered productive and are not reserved or withdrawn for non-timber uses (USDA/Forest Service 2008b). Forest lands managed by corporate forest landowners constitute 21 percent of

<sup>3</sup> Non-corporate includes Indian Trust lands (land area: 22 million hectares).

<sup>4</sup> Other federal land includes: National Park Service (land area: 34 million hectares); national wildlife refuges (land area: 38 million hectares); and Department of Defense and Department of Energy lands (land area: 6 million hectares).

productive, non-reserved forest lands<sup>5</sup> and are generally concentrated in the South and the Pacific Coast. Forests managed by non-corporate private forest landowners are 49 percent of productive, non-reserved forest land (Table 1) and are primarily concentrated in the eastern United States (USDA/Forest Service 2008b).<sup>6</sup>

Federal lands are concentrated in the West and make up about 261 million hectares (646 million acres) or about 28 percent of the total land area of the United States. These lands contain 100 million hectares (247 million acres) of forest land – about a third of all forest land. The federal government has a direct management and policy responsibility for the federal forest estate. Federal lands are administered by a number of agencies (Table 1).

Federal law establishes broad policy direction for the management of national parks, national forests, national wildlife refuges and Bureau of Land Management (BLM) lands. The responsible bureaus and agencies in Washington, DC supplement this policy direction by issuing policy interpretation and implementation direction to their field units. The Forest Service is in the Department of Agriculture and most other land managing agencies are in the Department of the Interior. While all of these agencies reside in Washington, DC, they have different management missions. At times, coordination of these agencies to address common problems has been less than perfect.

Federal lands managed by the Forest Service and BLM have historically been managed for a broad range of management objectives, including timber production, watershed protection, recreation, livestock grazing, mining and wildlife management. National parks are managed for protection of natural and historic values and Fish and Wildlife Service lands for game and non-game wildlife habitat. Defense and Energy Department lands are often managed for timber and other multiple purposes when doing so is consistent with the primary mission focus of the administering agency. The Bureau of Indian Affairs manages Indian reservations in trust for the Tribes.

States manage 27.9 million hectares (68.8 million acres) of forest land and counties and municipalities manage about 4.4 million hectares (11.0 million acres) of forest land. State lands run the spectrum from management as parks and protected areas to management for income and timber production. Some states finance the cost of their forest administrative organizations from receipts from the sale of timber. Others, such as Washington State, manage extensive forest lands in trust to produce income for public schools.

***Timber harvest by ownership category:*** Private lands currently supply 92 percent of the wood volume harvested in the United States (USDA/Forest Service 2008b). There are about 11 million private landowners and they manage for a broad variety of management objectives.

Private landowners with larger holdings typically have timber production as at least one objective, if not as the primary objective. About 65 percent of family forest owners with

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<sup>5</sup> Productive, non-reserved forest land is forest land that is capable of growing 1.40 m<sup>3</sup>/hectare/year of industrial wood (20 cubic feet/acre/year) and is not reserved in land-use categories that preclude timber harvesting.

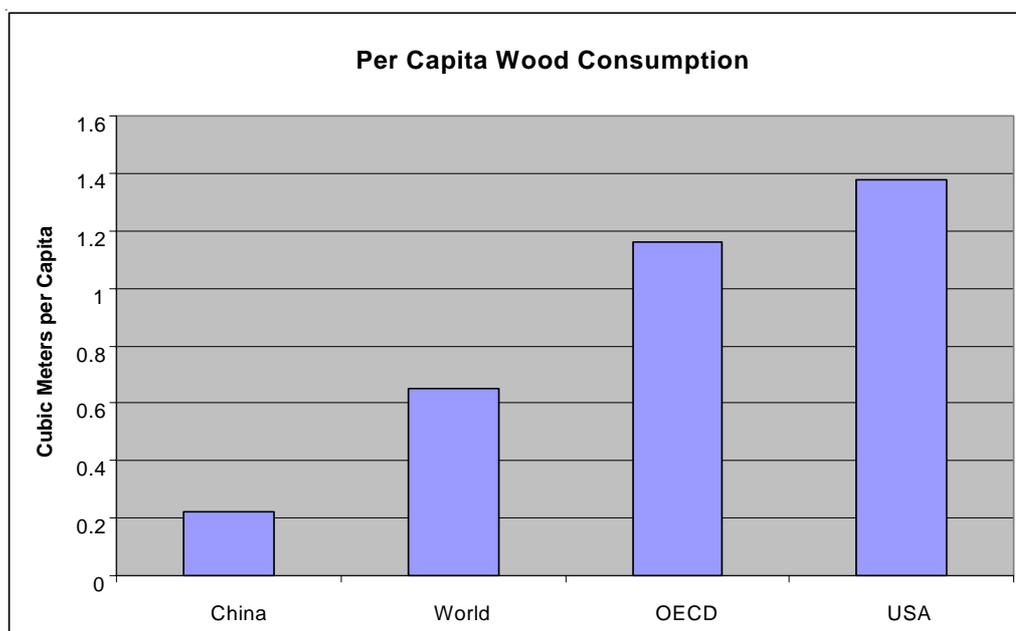
<sup>6</sup> Private corporate – an ownership class of forest land that is administered by entities that are legally incorporated.

Private non-corporate – an ownership class of private lands that are not owned by corporate interests. This includes Native American lands, unincorporated partnership clubs and lands leased by corporate interests.

holdings of more than 40.5 hectares (100 acres) have commercially harvested trees from their land at some time during their ownership tenure. As parcel size diminishes, so does the likelihood of commercial harvest. In the 1 to 9 acre size class only 16 percent of owners have commercially harvested trees (Butler 2008, p. 23). Typically, small forest owners will harvest once or twice in a generation, if at all.

### **Timber demand and supply situation**

The United States per capita consumption of wood and paper products exceeds that of most other countries (Figure 2). Between 1965 and 2005, timber consumption increased by 59 percent, from 377 to 600 million m<sup>3</sup> annually (Howard 2007, Table 5b).<sup>7</sup> On a tonnage basis, consumption of wood products in 2005 was 62 percent of the total weight of most other materials combined – steel, aluminium, plastics and cement (Bowyer 2009).



**Figure 2. Per capita wood consumption**

Source: China Timber Import Export Co/Hardwoodmarkets.com 2005, wahardwoodscomm.com/ppt/08AM/2008SnowWHC\_AM.ppt; graph modified by Al Schuler

The United States is the world's largest producer of pulp, paper and paperboard products (Ince *et al.* 2007). The nation produces and consumes about one-fourth of the world's industrial timber (FAO forestry Web site<sup>8</sup>). The forest product sector, although small in comparison to the rest of the economy, is significant on a global forest sector scale.

<sup>7</sup> In 2005, consumption included: lumber – 318 million m<sup>3</sup>; plywood and veneer – 40 million m<sup>3</sup>; and pulpwood-based products – 185 million m<sup>3</sup>. In addition, approximately 44 million m<sup>3</sup> of wood was used for energy in 2005, mostly by industrial facilities (Howard 2007, Table 5b).

<sup>8</sup> <http://www.fao.org/forestry/28815/en/>

The total value added by the production of wood and non-wood products “as a percent of all manufacturing contributions to GDP has remained relatively constant since 1947” (USDA/Forest Service 2004, p. 46). In 2006, the solid wood industry employed about 536 000 people; the pulp and paper industry another 414 000. “Combined they were 1.1 percent of all U.S. jobs and 7.1 percent of manufacturing jobs. This is down from 824 000 and 485 000 in 1950, when combined they were 2.5% of all jobs and 8.6% of manufacturing jobs” (USDA/Forest Service 2008a).

The United States is a net importer of forest products. The ratio of wood imports to domestic harvest in roundwood equivalents has increased over the past few decades, rising from 14 percent in 1965 to 38 percent in 2005 (or 5.8 billion cubic feet, 164 million m<sup>3</sup>) (Howard 2007). Lumber imports have increased steadily over the last few decades, culminating in lumber imports of approximately 106 billion m<sup>3</sup> in 2005, principally from Canada. Lumber exports increased until 1988, when they started to decline. The United States exported approximately 11 million m<sup>3</sup> in 2005 (Howard 2007, Table 5b). However, net trade of some types of wood and paper products has increased. Hardwood lumber exports, for example, have increased since 1990.

Forest product processing has expanded into new areas in the past few decades and production of engineered wood products is expected to continue to increase. Recycling of paper and paper products has increased as well; currently, about 56 percent of paper and paper products are recovered for recycling (AF&PA 2007<sup>9</sup>). The pattern of reduced output in the West and increased production in the South also holds true for pulpwood and plywood.

### **Summary of current conditions of forest land**

A snapshot of forest conditions reveals (USDA/Forest Service 2008b):

- After two centuries of decline, the area of forest land stabilized in about 1920 and is about two-thirds what it was in 1600.<sup>10</sup>
- The area burned by wildfire each year has decreased by 80 to 90 percent since the 1930s. In recent years, the area burned by wildfire has increased, particularly in the western United States.
- Forest growth nationally has exceeded harvest since the 1940s. Today forest growth exceeds harvest by 40 percent and the volume of annual forest growth is four times greater than it was in 1920.
- Because forest growth exceeds harvest, the average standing volume of wood per hectare nationwide is about 50 percent greater today than it was in 1952; in the eastern United States, average volume per hectare has almost doubled.
- Populations of many wildlife species have increased dramatically since 1900. But some species, especially those with specialized habitats, remain a cause for concern.
- Tree planting on all forest land rose dramatically after the Second World War, reaching record levels in the 1980s (Moulton and Hernandez 1999).

<sup>9</sup> [http://www.afandpa.org/Content/NavigationMenu/Environment\\_and\\_Recycling/Recycling/Recycling.htm](http://www.afandpa.org/Content/NavigationMenu/Environment_and_Recycling/Recycling/Recycling.htm)

<sup>10</sup> Today, agricultural lands continue to revert back to forests, but this is offset by forest loss due to urbanization.

## **Overview of US policy and institutional frameworks**

Forest policy evolved over more than a century in response to economic, social and environmental factors. Forest policy was designed, in part, to promote a favourable climate for investment in private forest management, while at the same time protecting the productive capacity of forests and reducing the adverse effects of forestry operations on soils, water and other environmental services. This obviously requires a balancing of private versus public values and interests.

The following section describes this policy framework and the roles of federal, state and local governments in the forest sector. A summary of these roles is contained in Box 1.

### ***Roles of government in the forest sector***

#### ***Federal role in the forest sector***

Federal involvement in the forest sector is both complex and multidimensional. It encompasses: 1) management of extensive federal lands; 2) assisting in the protection of all forest lands from fire, insects and disease; 3) financial and technical assistance to forest landowners; 4) support for soil and water conservation; 5) research and technology transfer; 6) inventory and assessment of all forests; 7) regulation of some aspects of private forest management, e.g., endangered species, wetland conversion, industrial pollution and worker safety; and 8) taxation of private landowners and corporations.

#### **Federal fire management**

In cooperation with the states and local governments, federal land management agencies are involved in capacity building, financing and setting policy standards for protection of forests from wildfire, insects and disease. Such protection is a major encouragement to investments in private forest management. The Forest Service spends almost US\$700 million annually on wildfire preparedness and prevention. Federal expenditures for wildfire preparedness, prevention and suppression have increased dramatically over the last decade. Forest Service wildfire suppression costs rose from less than US\$200 million in 1997 to about US\$1.5 billion in 2006 (USDA/Forest Service 2007a). Over the years, the total cost of wildland fire management, which includes preparedness, prevention, suppression, fuel treatment (thinning and prescribed use of fire) and related costs, has increased from 13 percent of the total Forest Service budget in 1991 to 45 percent in 2008 (USDA/Forest Service 2007a).

#### **Federal assistance related to forest health**

The Forest Service also provides regional assessments of insect and disease problems, as well as cost-share funding to state governments to help prevent and suppress insect and disease outbreaks, regardless of who owns the land. In fiscal year 2008, approximately US\$44.5 million was appropriated for cooperative work with the states. Another US\$54 million was appropriated in fiscal year 2008 for forest health work on federal lands (USDA/Forest Service 2008c).

### Federal assistance to landowners and support for conservation

In addition to its role in protecting private and public forests from wildfire, insects and disease, the federal government is engaged in capacity building in support of improved management of state and private forests. The federal government provides the states with funding for technical and financial assistance to private forest owners. In fiscal year 2007, the Forest Service provided US\$72 million to the states for such purposes (USDA/Forest Service 2008c). State foresters are the delivery or implementation vehicles for these federal programmes, which are usually supplemented by state and local funding.

The federal government also provides financial assistance to states for acquisition of land for conservation purposes.

Historically, federal and state cost-share programmes seem to have a significant impact on tree planting on non-corporate private forest (NCPF) lands. From 1951 to 1976, cost-share tree planting amounted to 47 percent of all tree planting on NCPF lands; from 1977 to 1997 it averaged 43 percent (Zhang 2002). That percentage dropped dramatically in recent years; in 1997, substantially less than 20 percent of tree planting on NCPF lands was cost shared (Zhang 2002). In spite of the decline of cost-sharing, the area planted by NCPF owners has remained high and now exceeds the area planted by corporate forest landowners (Moulton and Hernandez 1999).

### Federal forestry research and technology transfer

Forestry research and development is a key element in developing the knowledge base for effective investment in forest management and processing. The federal government has one of the largest forestry research organizations in the world. Forest Service funding for research, including construction, and net of inflation, has increased from US\$259 million in 2000 to US\$326 million in 2008 (both in 2005 US dollars), although funding has been relatively constant at above US\$300 million per year (2005 US dollars) since 2002 (USDA/Forest Service 2008a, p. 2-90). In spite of this, between 1985 and 2008, the number of Forest Service research scientists declined from 985 to about 500 (NRC 2002; USDA/Forest Service 2008c, p. B-1). The most significant erosion of research capacity has been in the disciplines of wood technology and silviculture (NRC 2002).

The Forest Service maintains five regional experiment stations and numerous research work units throughout the United States. Research focus varies from traditional forest management research aimed at reforestation, nursery management and silviculture, to research on wildlife management, social sciences, recreation, urban forestry and environmental functioning and climate change. The Forest Products Laboratory in Madison, Wisconsin carries out wood utilization research designed to improve wood-use efficiency and extend the service life of wood products in all applications; it also has a research emphasis on wood biorefineries, nanotechnology, advanced housing and advanced composites. The International Institute of Tropical Forestry in Rio Piedras, Puerto Rico, focuses on scientific support for the sustainable management of tropical forests.<sup>11</sup>

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<sup>11</sup> More information on the Forest Service research programme can be obtained at <http://www.fs.fed.us/research/>

### Federal forest inventory and assessments

The Forest Service research organization has conducted regular periodic inventories of the conditions and trends of all forest lands in the United States, regardless of ownership, since the 1930s. Reports are prepared both locally and nationally on forest area, productivity, growth and removals, species composition, size and condition of timber, and additional parameters, including forest health, mortality and disease.<sup>12</sup> The private forest sector has traditionally strongly supported collection of information on forests which informs investment in forest management and processing facilities.

In addition to forest inventories, the Forest Service, as provided by the Resources Planning Act of 1974 (RPA), prepares five- and ten-year assessments on the condition and trends, as well as the demand for and supply of renewable resources, including forests, rangelands, wildlife, recreation, and related resources. These assessments cover all ownerships, not just federal lands.<sup>13</sup>

### Federal environmental regulations affecting the forest sector

The effects of federal environmental regulation on private forests include: 1) restrictions on the flexibility of private landowners to drain forested wetlands to increase site productivity for commercial tree species; 2) requirements to implement best management practices to meet federal and state water quality goals; 3) requirements to protect habitats of endangered and threatened species; 4) pesticide-use restrictions; and 5) limitations on the use of prescribed burning to protect air quality. With the exception of endangered species enforcement, state and local governments are the primary enforcement authorities for federal, state and local environmental laws affecting private lands. Appendix 1 summarizes the effects of the 1970s environmental laws on the forest sector.

Various agencies enforce environmental regulations, including: the Environmental Protection Agency (EPA), the Fish and Wildlife Service and the Army Corps of Engineers. The EPA was established in the 1970s to, among other responsibilities, implement the Clean Water and Clean Air Acts. Under these laws, the EPA establishes national and regional goals and standards. The individual states are then charged with enforcing compliance with some of these goals and standards and usually receive federal funding to help with implementation. If state compliance or enforcement efforts are inadequate, the EPA can implement direct enforcement actions.<sup>14</sup>

The EPA also has responsibility for establishing pesticide-use restrictions for specific insecticides, fungicides and rodenticides and to promulgate standards for training and other requirements for those certified to apply them. States are responsible for enforcing pesticide use and applicator training under EPA policy. Other examples of federal regulation include: 1) landowners wishing to drain or fill permanent wetlands are required to get a permit from the U.S. Army Corps of Engineers; and 2) the U.S. Fish and Wildlife Service (F&WS) regulates landowner behaviour involving migratory birds and endangered species. In addition, the

<sup>12</sup> More information on the forest inventory programme can be obtained at <http://www.fia.fs.fed.us/>

<sup>13</sup> RPA assessment documents for 1989, 1993, 2000 and 2010: <http://www.fs.fed.us/research/rpa/assessment-pub.shtml>

<sup>14</sup> More information on EPA programmes and US environmental laws can be obtained at <http://www.epa.gov/>

Animal and Plant Health Inspection Service (APHIS, a USDA agency) sets standards designed to reduce the risk of importing invasive species and takes direct action to eradicate invasive species once introduced.

### Federal labour and worker-related regulations affecting the forest sector

The Occupational Health and Safety Administration (OSHA) is a federal agency that establishes worker health and safety regulations for industrial operations, including sawmills, pulp mills and other industrial operations, as well as logging operations in the forest. OSHA employees often directly inspect and enforce health and safety regulations. In 2007, OSHA had 2 150 employees, including 1 100 inspectors. In addition, 26 states have developed the capability to enforce OSHA rules.<sup>15</sup>

Employers are required to obtain insurance to cover the medical expenses of workers injured on the job. Workers' compensation boards in each state administer these programmes. The cost that a particular employer pays for workers' compensation insurance will increase based on a poor accident or injury record. This gives employers an economic incentive to create and maintain safe work environments.

### *State and local role in the forest sector*

The state and local role in the forestry sector has some aspects that are similar to the federal role. These include: 1) management of public lands; 2) fire protection on all forest lands; 3) research and technology transfer; and 4) taxation. However, states and local governments have a much stronger role in regulation of forest practices on private lands. They are also the primary delivery vehicle for many programmes funded by the federal government to assist private landowners.

The 50 states are individually responsible for guiding and regulating management of private forests. Each state has a state forester and a public forestry organization whose role is to implement programmes to protect forests from fire, insects and disease and provide technical and financial assistance to private forest owners, especially those with small acreages.<sup>16</sup>

### State and local regulatory enforcement

Most private forest management practices are regulated at the state and local level. The United States Constitution protects the right to own property and many states are involved in the protection of land tenure and private property rights (USDA Forest Service 2004). In recent years there has been a substantial increase in the number of state and local ordinances that have been enacted to regulate timber harvesting on private lands (Green and Siegel 1994). Such ordinances fall into three categories: water quality and wetland protection laws, sensitive and endangered species laws and forest practices laws.

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<sup>15</sup> For more information on OSHA see <http://www.osha.gov/>

<sup>16</sup> For additional information on state forestry programmes and online access to programmes of individual states go to the National Association of State Foresters Web site: <http://www.stateforesters.org/>

States approach regulation of private forest practices differently. States having the strongest forest practices acts tend to be on the west coast (California, Oregon and Washington). These states generally require a logging plan to be drawn up and approved before logging can commence. Harvest plans are evaluated for their protection of streamside values, sensitive areas and wildlife habitat and reforestation is mandated if needed. The state-level comprehensive forest practices acts in the western United States limit the power of local and municipal governments to pass local forestry ordinances. In the eastern United States, towns and local units of government commonly adopt ordinances regulating forest practices on private lands (Green and Siegel 1994; Ellefson *et al.* 1995). States in the South tend to have the least stringent forest practice codes; often voluntary compliance with approved 'best management practices' for protecting water quality is all that is required. Data suggest that state and local regulations have the most significant effects on private timber supplies on the Pacific Coast (12-14 percent reduction in softwood sawtimber harvests) and the least in the South – 3-4 percent reduction in softwood sawtimber harvests) (Green and Siegel 1994).<sup>17</sup>

No states impose restrictions or quotas on the volume of timber or other forest products that periodically can be harvested from private lands. In other words, there are no legally mandated harvest flows or annual allowable cut limitations on private harvest. Regulations are aimed at reducing adverse environmental impacts of harvest operations and requiring reforestation when needed.

### State forestry research and education

Most advanced forestry education and considerable forestry research occurs at state-run colleges and universities. Funding available for forestry research at universities that receive federal funding increased from US\$256 million in 2000 to US\$282 million in 2006 (2005 US dollars) (USDA/Forest Service 2008a, p. 2-90). Research at colleges and universities is typically funded from several sources, including the federal government, the states, industry and other sources, such as foundations (NAPFSC 1999).

### *Summary of federal, state and local responsibilities for regulating the forest operations*

Today the United States has a mixed bag of federal versus state and local responsibilities for forest regulation and governance which ranges from: 1) direct federal control of both standard setting and enforcement (e.g., Endangered Species Act, federal land management); 2) federal policy regulatory oversight, with state and/or local enforcement on private lands (e.g., Clean Water Act, pesticide labeling and enforcement); 3) indirect federal control of standards through cost-sharing leverage (e.g., wildfire protection standards, the federal cost-sharing of private reforestation); and 4) state and/or local control (e.g., regulation of private forest lands, except for Endangered Species Act listed species). At the state and local levels, there is also a range of responsibilities. For example, in many western states the state government regulates private land forest practices, while many northeastern states delegate forest regulation to local ordinances.

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<sup>17</sup> While this was a study of state and local regulations, some of these regulations are developed under guidelines provided by federal regulatory agencies, e.g., best management practices to protect water quality under the Clean Water Act.

### ***Roles of non-government entities in the forest sector***

In view of decentralized forest regulation and extensive private forest ownership, non-government parties – such as corporate forest owners, non-corporate forest landowners and environmental groups – are major actors in how forests are managed. Private entities of all types are part of the natural resource public and private forest sector discourse and decision-making at local, regional and national levels.

### ***Conservation and environmental NGO roles in forest management***

While some non-government conservation organizations have been existence since the late nineteenth century,<sup>18</sup> over the last four decades their numbers and political/social influence have increased dramatically. Currently, conservation and environmental non government organizations (NGOs) are involved in the forest sector at all geographic levels – local, state, national and international.

In the 1960s, many environmental NGOs tended to focus on national forest and other federal lands. This expanded in the late 1960s and 1970s when many NGOs were instrumental in the passage of the 1970s federal environmental legislation (for example, the Clean Air and Clean Water Acts, Endangered Species Act, and the National Environmental Policy Act). The 1970s environmental legislation was, in turn, used by many NGOs to challenge federal land management practices, both administratively and in the courts. Such challenges were instrumental in substantially reducing timber and other commodity outputs from these lands.

Over the last two decades, an increasing number of conservation NGOs became involved in the acquisition and management of environmentally sensitive land. For example, The Nature Conservancy (TNC) purchases and manages environmentally sensitive land for wildlife and biodiversity objectives. TNC has acquired more than 3.6 million hectares of wildlife habitat and manages over 1 500 reserves.<sup>19</sup>

NGOs may purchase and manage lands or may acquire property rights or ‘easements’ in land. These easements are generally designed to retain lands in their current use, such as forest or agriculture, but prevent development, such as residential or commercial uses. The use and acquisition of conservation easements has increased dramatically in recent years.

Some NGOs were established to focus on particular wildlife objectives. Examples include: Ducks Unlimited, the Wild Turkey Federation and the Rocky Mountain Elk Foundation. These NGOs seek to influence public attitudes and policy, but may also acquire and manage land or conservation easements to achieve their conservation objectives.

One of the most significant developments in the last 15 years is the emergence of non-governmental forest governance schemes. The Forest Stewardship Council (FSC), funded by the Worldwide Fund for Nature, emerged in 1993 with the objective of seeking to use markets to encourage improved management of forests. In the United States, the FSC is actively

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<sup>18</sup> For information on one conservation NGO that has been in existence since 1875 (American Forests), visit <http://www.americanforests.org/>

<sup>19</sup> More information about TNC can be obtained from <http://nature.org/aboutus/>

promoting the independent, third party certification of private and state-owned forests.<sup>20</sup> As of August 2007, the FSC had certified over 9.3 million hectares (23 million acres) of forest land in the United States and 75 million hectares (185 million acres) worldwide (FSC-US Web site: <http://www.fscus.org/>). Many environmental NGOs strongly support FSC certification and have brought pressure to bear on major United States retailers of forest products to carry FSC-labeled products. These efforts have changed the forest governance landscape in the United States and other countries (Cashore *et al.* 2004).

### **Corporate forest landowner role in forest management**

Forest lands owned by corporations tend to be concentrated on the west coast and in the South where the forests often are very productive for growing commercial timber.<sup>21</sup> As would be expected, many corporate forest lands tend to be managed on relatively short rotations, using high yielding species of trees, usually conifers.

In the last decade many publicly-held forest industry firms have divested themselves of most or all of their forest holdings. Most were purchased for investment purposes by pension funds and other institutional investors seeking conservative investments. These timber investment management organizations (or TIMOs) purchase forest land from both industrial and non-industrial private landowners. Corporate forest landowners, like federal agencies and non-corporate forest owners, generally harvest their timber using logging contractors and short-term contracts.

In spite of their emphasis on timber production, corporate forest landowners have been sensitive to the growing environmental awareness in the United States and have increased attention to addressing the environmental effects of their forestry operations. In October 1994 the American Forest and Paper Association (AF&PA), which at the time represented 95 percent of the industrial forest land in the United States, approved a set of Sustainable Forestry Initiative (SFI) Principles and Guidelines. These guidelines were developed as a response to FSC certification efforts and provide performance measures for reforestation and the protection of water quality, wildlife, visual quality, biological diversity and areas of special significance. Agreement to adhere to these standards was made a precondition for membership in the AF&PA. The SFI programme has since evolved into an independent certification programme involving the verification by independent, third party auditors of an established set of SFI forest management standards and guidelines.<sup>22</sup> Many corporate forest lands, TIMOs and real estate investment trusts (REITs) are SFI certified. As of 2007, over 21.4 million hectares (53 million acres) of forest land in the United States had been independently third party certified to the SFI standard (personal communication with SFI).

More than 60 years ago the forest products industry began what is now called the American Tree Farm System, designed to provide technical assistance, as well as encouragement and recognition for non-corporate landowners who manage their forest lands well for timber production, while protecting other values. In August 2008, the Tree Farm System was recognized as a forest certification body by the Programme for the Endorsement of Forest Certification schemes (PEFC).<sup>23</sup>

<sup>20</sup> Information on the FSC can be viewed at <http://www.fscus.org/>

<sup>21</sup> The State of Maine in the northeast also has a significant concentration of corporate forest lands.

<sup>22</sup> Information on SFI can be found at <http://www.sfiprogram.org/>

<sup>23</sup> Information on the American Tree Farm System can be found at <http://www.treefarmssystem.org/>

Many corporate forest landowners and other forestry interests finance and support state forestry associations that: 1) provide general education to the public and private landowners; and 2) seek favourable treatment of forestry by state legislatures and state natural resource agencies.

### ***Non-corporate private forest landowner role in forest management***

Individual and family forest landowners that are unincorporated are classified as non-corporate private forest landowners. These landowners own 49 percent of United States forest land. Most non-corporate forest land is in the eastern United States. Non-corporate landowners have various ownership objectives, which may include timber production, recreation, wildlife habitat, investment and others. For some, especially those with larger forest holdings, timber production is often one or even a primary objective. Others, especially those with smaller holdings, own forest land primarily for its wildlife, recreational, or environmental amenities and may not be interested in harvesting timber.<sup>24</sup>

While there are about 11 million non-corporate landowners in the United States, about 62 percent of non-corporate forest land is held by only 6 percent of the landowners, who own forest tracts larger than 40.5 hectares (100 acres) (Butler 2008, p. 55). The other 38 percent of non-corporate forest lands owned by the majority of landowners is in relatively small parcel sizes that can make forest management economically inefficient.

Many of the larger forest landowners employ professional consulting foresters to assist them in planning and carrying out forest management activities.<sup>25</sup> Others, especially those with smaller forest tracts, may not use or even be aware of the services provided by consulting foresters, and so deal directly with logging contractors. Experience demonstrates that landowners who employ professional foresters in planning and carrying out timber harvesting usually obtain both a higher price for their timber and their forest stands are left in better condition than those landowners who deal directly with logging contractors. In spite of the benefit to landowners of using professional foresters, more than 50 percent of non-corporate forest owners harvest their timber without their services (personal communication with Brett Butler).

The diversity of landowners' situations and objectives suggests the need for a programme of public education and outreach to non-corporate landowners. Over the years a variety of extension and public educational outreach programmes have been developed to address this need.<sup>26</sup>

Increasing fragmentation and parcelization are trends that appear to be threatening the future forestry and environmental benefits from private forest lands. This is caused by expanding urbanization and subdivision for residential use (Alig *et al.* 2003). Some tax codes, particularly federal inheritance taxes, may also be contributing to this fragmentation. Another contributor is weak or non-existent land-use planning and zoning regulations at the local and county level.

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<sup>24</sup> For information on US landowner characteristics and objectives, see: <http://www.treesearch.fs.fed.us/pubs/15758>

<sup>25</sup> For more information on consulting foresters and their services visit <http://www.acf-foresters.com/>

<sup>26</sup> Federal education and assistance programmes targeted to forest landowners can be viewed at <http://soforex.net/>

Several NGOs, such as the National Woodland Owners Association (NWOA), are organized to represent the interests of non-corporate and family forest owners.<sup>27</sup> This association sponsors the Private Landowner Network which provides relevant information to private forest landowners, including information on public assistance programmes available to them.<sup>28</sup> The NWOA also operates a small forest certification programme, called Green Tag for private landowners.

### **Box 1. Summary of Institutional roles of federal, state and private forest sectors**

#### **Role of the federal government in forestry**

- Manage the national forests, national parks and other federal lands.
- Provide financial assistance to the states for delivery to forest landowners (provide a portion of cost-sharing funding).
- Partially finance and set overall quality standards for national programmes designed to assist in protecting forests from fire, insects and disease.
- Directly carry out forest inventory and assessments on all forest lands.
- Directly carry out forestry research, as well as help finance research at state educational institutions.
- Set policy/standards for air and water quality, pesticide use, protection of endangered species and wetlands management on both public and private lands.
- Provide technical and financial assistance on soil conservation techniques and practices to farmers and forest landowners.
- Directly enforce federal wildlife laws and regulations (dealing primarily with migratory birds and endangered species).
- Establish and enforce worker safety rules for industrial facilities and forest operations (OSHA).
- Assess federal taxes on income derived from forests and federal inheritance taxes on the estates of deceased forest landowners.

#### **Role of state and local governments in forestry**

- Direct responsibility for programmes designed to protect forests from fire, insects and disease.
- Regulate use and management of private forests, including zoning, enforcing federal and state standards for air and water quality, etc.
- Direct delivery responsibility for providing financial and technical assistance to forest landowners.
- Manage state forests, state parks and other state, county and municipal lands.
- Enforce state wildlife laws (for resident game and non-game species).
- Forestry education.
- Forestry research through state natural resources colleges and universities.
- Assess state and local income and property taxes on private landowners and corporations.

#### **Role of conservation and environmental NGOs in forestry**

- Encourage and promote management of federal and other public lands for amenity and environmental values.
- Encourage sensitivity in timber harvesting to environmental and sustainability concerns (FSC certification).

<sup>27</sup> For more information on the NWOA visit <http://www.woodlandowners.org/>

<sup>28</sup> <http://privatelandownernetwork.org/yellowpages/resource.asp?id=9610>

- Advocate passage of legislation addressing biodiversity, air and water pollution and related environmental issues and assure its effective implementation by enforcing agencies.

**Role of the corporate forest landowners**

- Manage some of the most productive forests for timber production.
- Encourage improved management of non-corporate private ownerships, including certification (American Tree Farm System).
- Finance and support state forestry associations that: 1) provide general education to the public and to private landowners; and 2) seek favourable treatment of private forestry by state legislatures and state natural resource agencies.

**Role of non-corporate private landowners**

- Manage 49 percent of forests for a wide variety of management objectives, including timber, wildlife, recreation, watershed protection and other uses.

***Taxes on private forest landowners***

Along with stable and secure land tenure, taxes have a significant effect on management of, and investment in, private forests. The primary taxes in the forest sector include federal and state income taxes, inheritance taxes and state and local property taxes. Both corporations and individuals are subject to taxes assessed on income. Income taxes on individuals and households are progressive in that the marginal tax rate increases with income. Inheritance taxes are assessed on the estates or property of deceased individuals. Property taxes are collected locally on the assessed value<sup>29</sup> of forest land and, sometimes, of standing timber. Income tax codes and many local property tax codes give recognition to the long-term capital nature of timber expenditures by providing some preferential treatment for such investments.

Generally speaking, federal income tax treatment for forestry operations is the same as would apply to other business income and expenses. Income from the sale of timber is generally treated as a long-term capital gain that is taxed at a lower rate than ordinary income. Thinning and similar stand improvement expenses can either be deducted from the landowner's taxable income in the year incurred (as a current maintenance expense) or capitalized into the cost of the timber and deducted when it is sold (Haney *et al.* 2001). Federal law also provides for special treatment of up to US\$10 000 per year of expenses for reforestation, as well as other tax benefits from qualifying management expenses (Haney *et al.* 2001). This tax benefit seems to have performed as effectively as direct financial assistance to encourage private landowners to reforest their lands even though receiving technical assistance is not required to obtain its benefits (Moulton *et al.* 1993). One problem, though, is the apparent lack of awareness by many landowners as to the existence of this tax benefit (Sampson and DeCoster 1997).

Annual property taxes can have a significant effect on investment in private forest land because they are due every year, while income from forests is generally received periodically. In the past, local tax codes often based property taxes on the combined value of

<sup>29</sup> The 'assessed value' of land and timber is often a percentage of its actual value. That percentage varies according to taxing jurisdiction.

land and timber, and so landowners were implicitly encouraged to cut timber prematurely to reduce their tax burden. This situation, combined with the possibility that taxes might rise substantially during a managed forest rotation, created disincentives for reforestation and other investments in private forests. In response, many states and local units of governments have modified their tax codes to encourage investment and reduce the incentive for premature harvest. Some states now base timberland taxes on bare land values, taxing the timber only upon harvest. Other states tax forest land at fixed rates or based on its estimated productivity regardless of the value of the standing timber.<sup>30</sup>

There are some state and local tax provisions that encourage private landowners to make investments in their timberland. For example, most states encourage the maintenance of open space and rural and forested landscapes by providing special or preferential tax treatment for these uses. Many of these states have provisions that allow for taxing agricultural and forest lands on the basis of current use, rather than an assessed highest use value if subdivided as residential or commercial property. Most such tax-advantaged programmes contain substantial penalties if landowners enrolled in them decide to convert their land to residential or commercial uses.

### ***Historic investment climate in the forest sector***

The favourable forest situation summarized earlier has been the result of some fortuitous events over the past 100 years, but also is the result of public policies aimed at protecting forests and improving the climate for investments on private lands. Some of the primary factors include (but are not limited to):

1. Agricultural productivity per hectare increased more rapidly than population, which reduced or eliminated the need for additional agricultural clearing.<sup>31</sup>
2. Stable and well-defined institutional frameworks for land tenure and land rights systems, backed up by the rule of law.
3. Strong and relatively consistent markets for forest products discouraged conversion to non-forest land uses.<sup>32</sup>
4. Taxation and regulatory systems that recognized the long-term nature of investments in the forest sector.
5. Strong agricultural and forestry institutions supported information delivery at the national, state (provincial) and local levels including: a) research and extension on forest management; b) long-term commitment to forest inventory and assessment; and c) effective emergency response systems to address wildfire, insects, disease and other natural events.
6. Increases in per capita income and other measures of economic strength and diversity encouraged investment in the forest sector and resulted in citizens that value forests for their non-timber and environmental benefits.

<sup>30</sup> For online information on US income and property taxes on private forests visit <http://www.timbertax.org/>

<sup>31</sup> Between 1850 and 1910, US forests were being cleared for agriculture at the rate of almost 3 500 hectares, or over 13 square miles, per day.

<sup>32</sup> The real price of lumber (adjusted for inflation) has risen steadily since 1800, increasing four times since 1900 (Howard 1999); while the real prices of most competing materials were declining during this period. Since the 1970s, the real price for lumber has fluctuated, but the trend has generally been flat. Weak agricultural commodity prices have also encouraged the conversion of cropland and pasture back to forest (Howard 2007).

Stable and secure land tenure has encouraged investment on private lands to the extent that most forest products are harvested on such lands. The risk is low that forest products contain any significant proportion of illegal wood. For the past three years, the United States has ranked in the top tenth percentile of countries for regulatory quality, rule of law and control of corruption (World Bank 2008), helping to create a positive investment climate (Seneca Creek Associates 2008).

## **Factors affecting current investment attractiveness in the forest sector**

The forest sector currently faces a number of significant challenges. These include: 1) sustaining and enhancing the global competitiveness of the forest product industry; 2) addressing the loss and fragmentation of private forest land caused by urban expansion and seeking to create incentives for private forest landowners to maintain, protect and manage their forests; 3) addressing biological threats to forests from introduced exotic species and climate change; 4) forging a social consensus on the use and management of public forests, particularly federal forests, to assure that their environmental, social and economic values are protected; and 5) seeking to reconcile national consumption of resources with public preferences for protecting environmental values, addressing global climate change and managing forests and other natural resources sustainably.

The following paragraphs describe some developments over the past two decades that pertain to the challenges listed above.

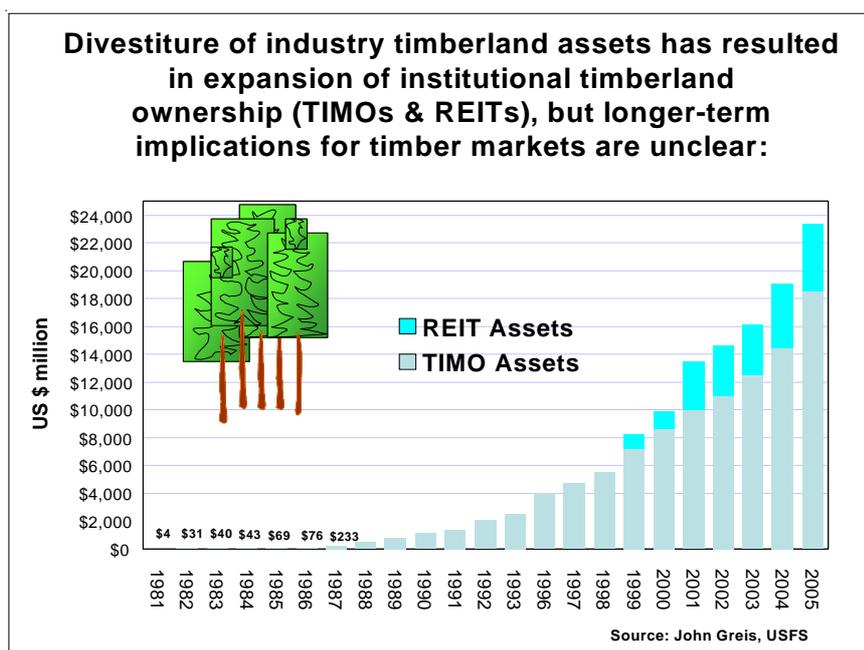
### ***Devolution of the integrated forest product industry***

Solid wood products and paper firms were formerly significant owners of privately held timberland in the United States, having built up their landholdings earlier in the twentieth century. For example, in 2000 the International Paper Corporation was the largest holder of American timberland, with 4.8 million hectares (12 million acres) (North American Pulp & Paper 2001 Factbook 2002). Since the mid-1990s, integrated forest product companies (industrial landowners) have sold most of their land and these large-scale timberland ownerships have been restructured into TIMOs or REITs, which are primarily managers and holders of timberland for institutional investors. This shift occurred, in part, due to changes in the tax code that: 1) are unfavourable toward integrated forest product industry ownership of timberland (by taxing both stumpage revenues and corporate dividends); and 2) provide favourable tax treatment to the new institutional owners – TIMOs and REITs – which are not enjoyed by integrated forest product companies (Binkley 2007; Mendell *et al.* 2008).

Institutional investors (e.g., pension funds) were attracted to timberlands in order to diversify their holdings and because timberland investments produce competitive rates of return and are considered low risk (Binkley 2007). Investors appear to prefer TIMOs and REITs over traditional integrated companies for industrial timberland investment, because they are ‘pure’ timberland investments (Mendell *et al.* 2008) that also offer substantial tax advantages.

Publicly available data on this ownership transition are hard to find, but industry sources suggest that large corporate timberland transactions amounted to 21.4 million hectares (53

million acres) from 1995 to 2008 (RISI) and were comprised mostly of acquisition by TIMOs or REITs. Figure 3 shows expansion of timberland assets held by TIMOs and REITs from the 1980s to 2005 (note that TIMOs represent the largest and most rapidly increasing share of this group). In 1997, integrated forest product companies, which owned 27 million hectares (67 million acres) of productive non-reserved forest land, as well as processing facilities, accounted for about 30 percent of timber harvest volume (USDA/Forest Service 2008b). Today, most of these lands have been sold and that timber harvest volume is produced by TIMOs and REITs.



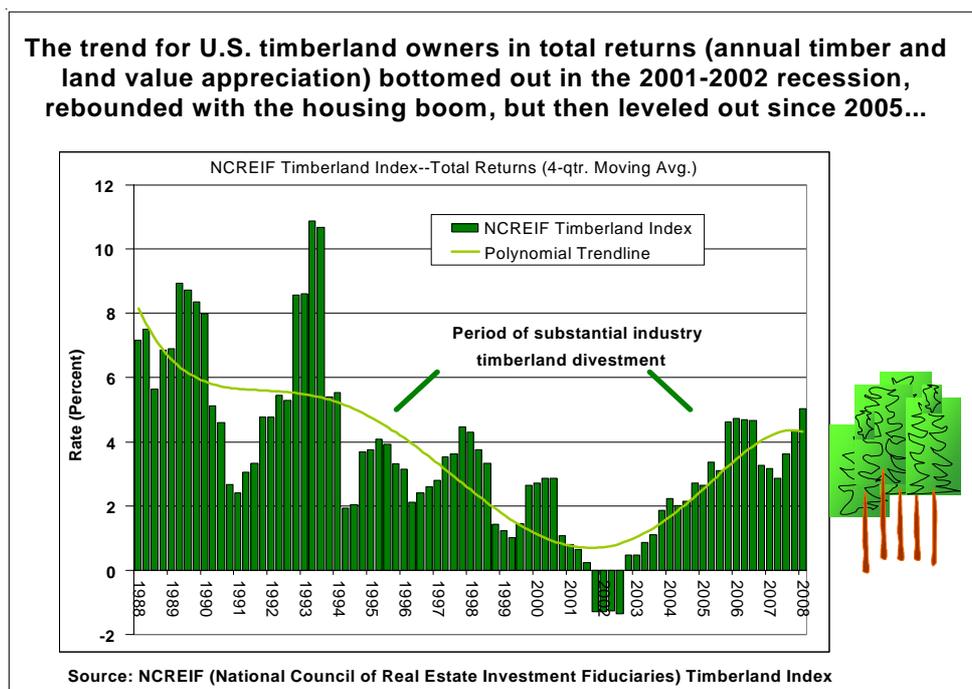
**Figure 3. Divestiture of forest land by integrated forest product companies**

This change in corporate structure affected the joint ownership of processing facilities and timberland. TIMOs do not directly own land; instead they manage land for their investors, often for investment periods that are less than a forest rotation in length. REITs own forest land but few processing facilities.

For TIMOs and REITs, fiduciary responsibility to their investors will generally focus their short- and long-term priorities on maximizing economic returns from land (this is the so-called ‘highest and best use’ concept commonly cited by TIMOs and REITs). The highest and best use approach does not necessarily result in the same timberland use that was realized under the former forest industry landowners whose primary interest was to sustain long-term timber supply to the wood mills of the parent company. Many TIMOs are required to turn over their properties every ten to fifteen years. When they do so, they usually sell in smaller parcel sizes to increase their returns. Over time, this practice is likely to become self-defeating because returns on managing smaller parcels for timber are inherently lower due to reduced economies of scale (Binkley 2007).

It remains unclear what the economic consequences of this massive ownership change will be in terms of sustaining timber supply or timber management in the long run. These changes have led to the widespread sale of productive timberland, including subdivision of land into small parcels for development, increasing forest fragmentation across the United States (Binkley 2007).<sup>33</sup> While conservation groups have acquired and protected some lands from these transactions, much of the forest land adjacent to urbanized areas is being developed or is vulnerable to development.

While the divestment of forest industry timberland was stimulated in significant measure by corporate tax regulations, it was also associated with a decade of downsizing in production capacity and corporate restructuring in the forest product industry. Economic globalization and structural changes (consolidations and mergers) resulted in refocusing or realignment of corporate objectives away from timberland management. Total timberland returns (both annual timber and land value appreciation) began to decline in the late 1990s along with wood fibre prices, and timberland returns bottomed out in the 2001-2002 economic recession (Figure 4).



**Figure 4. Trends in returns for timberland owners**

Thus, changed tax regulations, diminished forest product demands and prices and diminished timberland returns, were all elements in the massive shift of timberland ownership and investment.

<sup>33</sup> The TIMOs and REITs often have contractual obligations to supply timber to the mills of the former industrial timberland owners, but those contractual obligations usually have term limits and also are not attached to the land title (so the land, in many cases, can be subdivided and sold to new owners without contractual timber supply obligations).

### The forest products processing sector

The restructuring of integrated forest product companies discussed in the previous section affected the forest products processing sector. Another significant effect was the substantial decrease in timber production from federal lands. A major influence on national forest product processing is the increasing globalization of commerce. The United States domestic processing industry is a relatively high cost producer compared to growing international processing capacity, reflecting higher wages and increased expenses associated with environmental compliance.

Overall, the United States share of domestic markets fell by 29 percent from 1995 to 2001 (Collins *et al.* 2008). Import competition has the greatest effect on labour-intensive processing facilities, such as furniture manufacturing (see Figure 5; Ince *et al.* 2007). Between 1989 and 2002, Chinese wood furniture exports to the United States grew at a compound rate of more than 30 percent per year (Buehlmann *et al.* 2003). Between 1997 and 2006, employment in the national non-upholstered wood furniture industry decreased 44 percent from 127 703 to 71 544 workers (USDA/Forest Service 2008a; p. 2-92). What remains of the furniture sector is implementing changes, such as outsourcing and increased use of automation, in order to remain competitive (Ince *et al.* 2007).

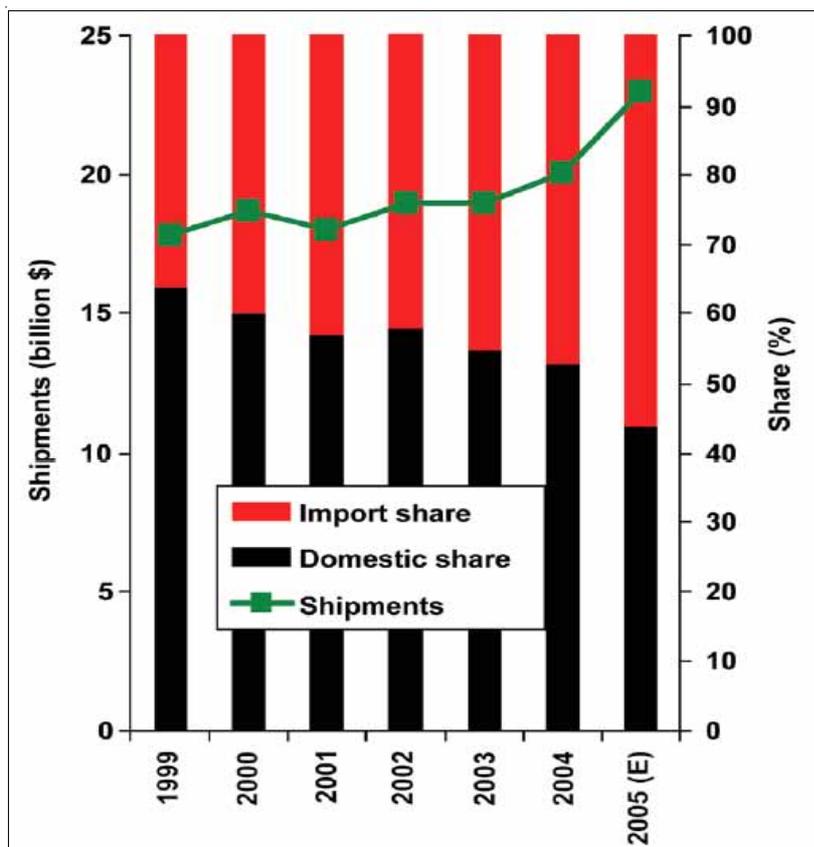
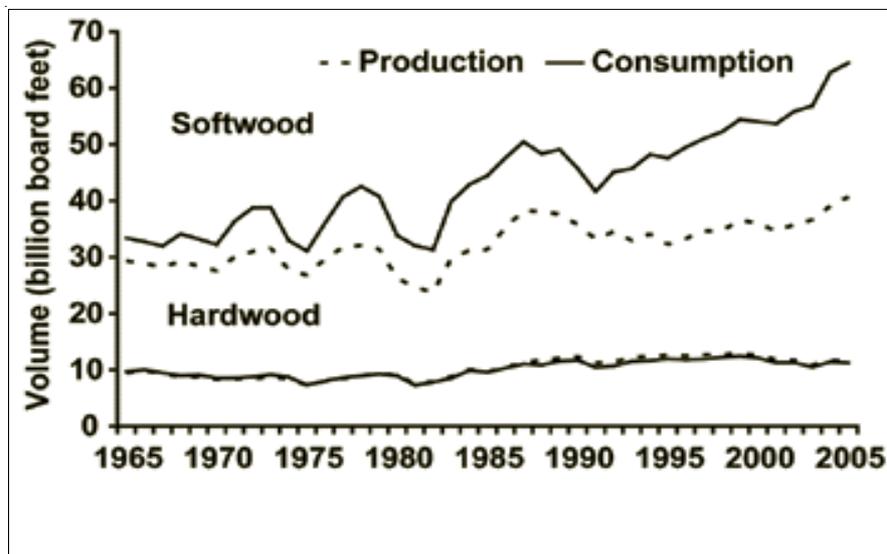


Figure 5. Decline in the domestic wood furniture industry (Ince *et al.* 2007)

Changes in the forestry sector due to globalization are expected to continue into the future (Bael and Sedjo 2006). Figure 6 shows the decline from 1965 to 2005 in the share of lumber consumption that was produced domestically. Timber harvest across the United States is expected to increase in the coming decades less than in recent decades (prior to the 1990s) due primarily to increased use of imported forest products and an increase in paper recycling (Ince *et al.* 2007). Although timber harvest in the United States increased steadily for decades in the latter half of the twentieth century, it has not increased significantly since 1989. Indeed, United States timber production (or annual harvest) has been estimated to have reached an historical peak at 444 million m<sup>3</sup> (15.7 billion cubic feet) in 1989 and has remained on a plateau lower than that peak, at around 425 million m<sup>3</sup> (15 billion cubic feet) through 2005 (Howard 2007; Table 5a).



**Figure 6. Domestic lumber production and consumption by wood type (Howard 2007)**

Even growth in the more capital-intensive pulp and paper sector has shifted from the United States to Europe and Asia. Figure 7 illustrates the growth by decade in paper and paperboard output for North America, Europe and Asia, which collectively account for 92 percent of global paper and paperboard production (based on FAOSTAT data<sup>34</sup>). While over the past decade growth subsided in North America (the United States and Canada), growth continued in Europe and Asia.

In spite of this shift, private industry is still making capital expenditure investments, which are necessary to remain competitive. Forest product facilities which rely more on capital-intensive infrastructure and less on labour, such as pulp and paper or larger forest product mills, have been better able to weather the increase in import competition (Ince *et al.*

<sup>34</sup> [http://faostat.fao.org/Default.aspx?404&eid=faostat\\_rb\\_error\\_172c6c2a66bd4ed0a4db6b9301b87f46](http://faostat.fao.org/Default.aspx?404&eid=faostat_rb_error_172c6c2a66bd4ed0a4db6b9301b87f46)

2007).<sup>35</sup> While the number of softwood lumber mills decreased overall in the last decade, the average capacity of surviving mills increased by 60 percent (Ince *et al.* 2007).

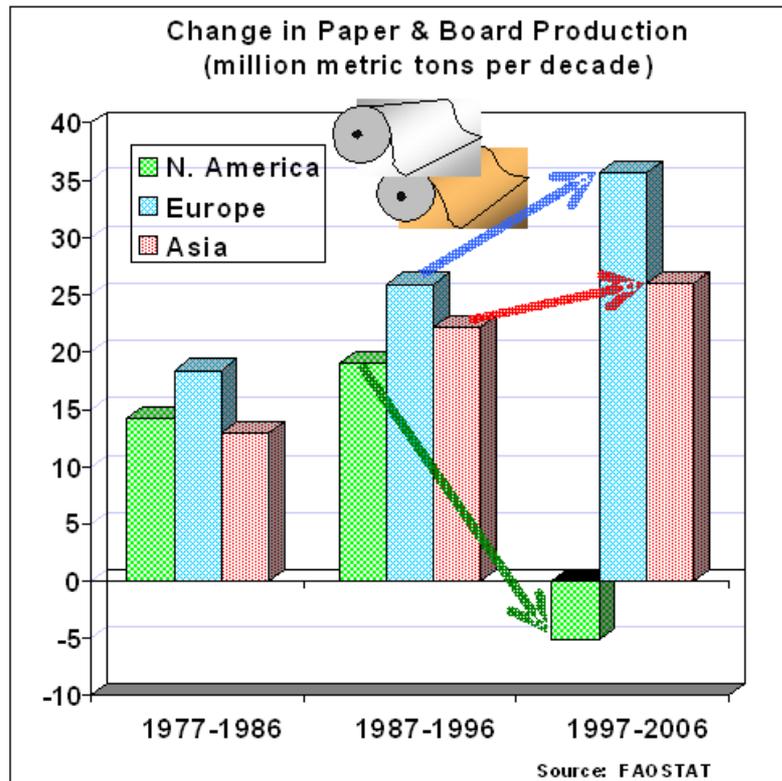


Figure 7. Change in paper and board production (FAOSTAT)

### Private forests

Private companies and individuals own 69 percent of productive forests in the United States but produce 92 percent of the timber harvested (Table 1) (USDA/Forest Service 2008b). In the future, a high proportion of current and projected timber harvest will come from the relatively smaller area of forest land that consists of managed plantations. While the area of private forest land has been stable since the 1930s, this is not likely to continue. The total private forest land area is expected to decrease by 2050 by up to 9.3 million hectares (23 million acres) due primarily to property fragmentation and conversion to other uses (Alig *et*

<sup>35</sup> Capital investment in wood product industries decreased from US\$3.4 billion in 1997 to US\$2.2 billion in 2003, but increased to US\$3.5 billion in 2006 (all in 2005 US dollars). Capital investment in paper product industries declined more – from US\$10.2 billion in 1997 to US\$5.3 billion in 2004, but increased to US\$7.4 billion in 2006 (all in 2005 US dollars). Capital investment in the wood furniture industry was US\$837 million in 1997 and US\$873 million in 2002. Capital investment in the logging industry was US\$0.9 billion in 1997 (2005 US dollars). (Quoted from USDA/Forest Service 2008a, pp 2-88.)

al. 2003). This trend is magnified in certain regions, especially the southeast (Southern Forest Resource Assessment 2002).

Though there is much diversity in the types and motivations of private landowners, they can be divided into two general categories: corporate forest landowners and non-corporate forest landowners.

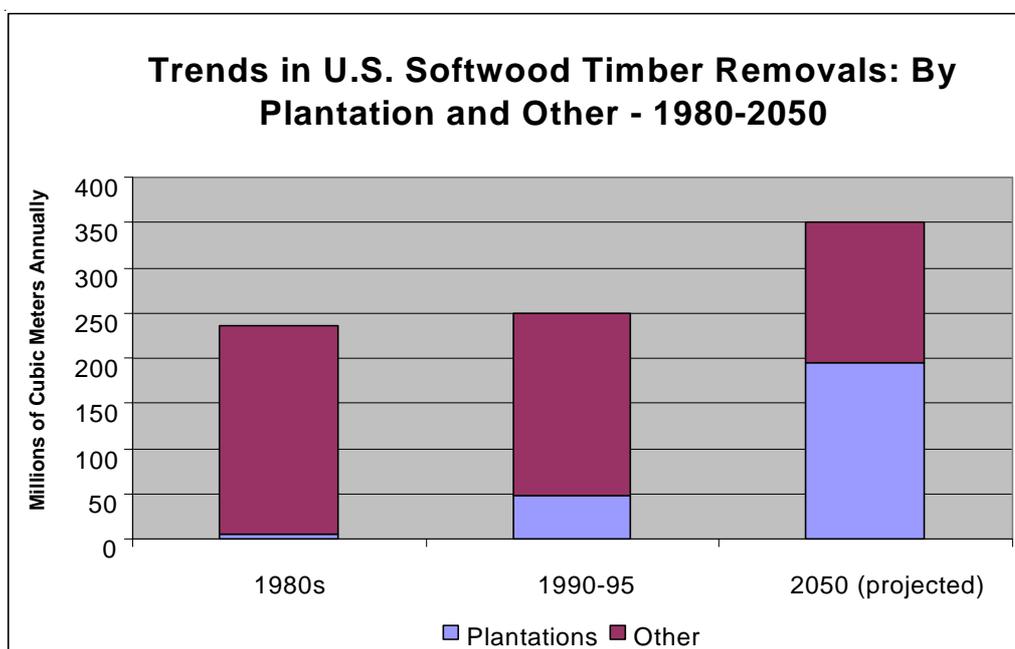
### *Corporate forest landowners*

Corporate forest landowners include TIMOs and REITs, as well as land owned by family corporations. Many, if not most, corporate forest lands are managed to produce commercial timber, but management intensity and land productivity vary among these owners.

The acreage of industrial plantations has increased dramatically in the past few decades as intensively managed plantations become more profitable than forestry operations in natural forests. Plantations are generally composed of native trees grown on shorter rotations. This shift is exemplified by the movement, in the 1980s, of the focus of timber production from natural forests in the Pacific Northwest to plantation-based timber production in the southeast and Pacific Northwest. Between 1990 and 2005 the United States went from having 10 percent to just over 15 percent of worldwide forest plantations (Bael and Sedjo 2006). About 45 percent of the tree planting is done by corporate landowners (Sedjo 2008). The focus on plantations has encouraged more systematic genetic selection and breeding of native tree species and has reduced the footprint of land needed to produce an equivalent amount of forest products, possibly reducing the total acreage used for production of forest products (Sedjo 2008).

The Forest Service projects that plantations, which produced about 4 percent of softwood timber harvest in the 1980s, will be the source of over 55 percent of domestic softwood timber harvest by 2050 (Figure 8) and will constitute about 9 percent of national forest land at that time (USDA/Forest Service 2003). This assumes that the area of managed plantations will continue to increase in the future as it had in the past. Most of the significant capital investment in expanding the area of managed plantations since the 1950s took place in the period when the corporate timberlands were owned primarily by integrated forest product firms (e.g., prior to the mid1990s). It remains to be seen whether the new class of corporate timberland owners (TIMOs and REITs) will make investments in timber production as was done by integrated forest product companies. It is unclear whether they will have sufficient capital resources or the inclination to continue expanding or maintaining plantation-based timber production, including private investments in silviculture and tree genetics that were funded largely by integrated forest product companies.

As existing processing facilities increasingly become specialized and concentrated in a few locations associated with plantations, the economic viability of managing natural forests for wood products could be adversely affected. Indeed, the latest Forest Service assessment indicated that growth in timber demand would slow down relative to the growth of past decades and also there would be continued expansion in plantation-based timber supply. Thus, the harvest of softwood timber is projected to be reduced on the remaining bulk of timberland, i.e., softwood timber harvest from natural forests will likely decline in the decades ahead (USDA/Forest Service 2007b).



**Figure 8. Trends in softwood timber removals (USDA/Forest Service 2003)**

In this context, it is likely that existing processing infrastructure in areas once served by a more decentralized forest industry based on timber from natural forests will deteriorate. This is likely to drive down the value of timber from natural forests, especially those distant from processing facilities, and reduce economic incentives for managing natural forests for wood products.

#### *Non-corporate landowners*

Development pressures affect small private landowners, many of whom are increasingly under financial pressure to sell their parcels for development. Fourteen percent of family forest owners are considering selling or transferring some or all of their land in the next five years (Butler 2008).

Over the years there have been a variety of federal and state programmes designed to assist non-corporate landowners. These range from education and technical assistance to financial assistance, quite often in the form of sharing the cost of qualifying activities, such as reforestation or erosion control (Ellefson *et al.* 2005). The large number and complexity of public assistance programmes and their qualifying criteria can be confusing to landowners. The U.S. Forest Service provides online information on assistance available to private forest landowners,<sup>36</sup> as do most states.<sup>37</sup> The Private Landowners Network is an example of an NGO effort to provide online information to landowners about the public assistance available to them in their specific states.<sup>38</sup>

<sup>36</sup> <http://www.fs.fed.us/spf/coop/programs/loa/index.shtml>

<sup>37</sup> <http://www.stateforesters.org/>

<sup>38</sup> <http://www.privatelandownernetwork.org/>

Non-corporate landowners consistently identify taxes as significant factors in their management decisions. The tax code contains some preferential treatment for forestry investments. States generally understand the role of taxes in sustaining a viable forest-based economy and every state has at least one tax benefit that attempts to keep private forest land forested (USDA Forest Service 2004).

As the average age of non-corporate forest land owners increases, estate or inheritance taxes become an issue when passing the land on to the next generation. If the next generation is not interested or is unable to afford to manage the land as forest, an increasing amount of private forest land will be developed. Many landowners view federal estate taxes as contributing to the fragmentation of private forests. In addition, 29 states impose an estate or inheritance tax (Kilgore and Ellefson 2002). When a landowner dies, the heirs are often forced to sell off portions of the forest holding or to prematurely harvest the timber to pay the inheritance tax obligations (Sampson and DeCoster 1997).

Major changes in federal estate tax provisions were made in 1997 and 2001, which, among other things, raised the value of an estate that would be subject to estate taxes and reduced the applicable tax rates (Ellefson *et al.* 2005). These changes likely substantially reduced the effects of estate taxes in leading to premature harvest or land sales. However, at the end of 2010, these provisions are scheduled to sunset (Ellefson *et al.* 2005). While Congress is expected to intervene in some manner, the details are yet to be written. Even so, careful planning is needed for a landowner to navigate the complexities of the federal, state and local tax codes. Here again, online help is available to non-corporate forest landowners (<http://www.timbertax.org/>).

## Public forests

Between 1950 and 1960, the Forest Service, the BLM and many state forest agencies began to gear up to meet exploding demands for timber in response to a post Second World War housing boom in the United States. From 1960 to 1985, these public lands were managed with a substantial emphasis on producing timber to support both local communities and American wood consumers (about 20 percent of softwood timber production originated from federal lands during this period).

But the demands for other uses and values of public lands also exploded during this period, creating a climate of intense controversy, especially after 1970. Since 1985, there has been a dramatic shift in the mission of many of these lands, and the managing agencies are now largely focused on restoring and maintaining healthy ecological conditions and meeting the recreational and amenity preferences of local and national stakeholders.<sup>39</sup> National forest timber sales have declined by more than 80 percent since 1985 and now provide less than 2 percent of timber consumption (Figure 9). Currently, all public lands combined provide about 8 percent of the timber harvest.

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<sup>39</sup> For a discussion of the various factors leading to this change, see the US paper in the APFC publication *Re-inventing forestry agencies: experiences of institutional restructuring in Asia and the Pacific*. RAP Publication 2008/05. Asia-Pacific Forestry Commission (<http://www.fao.org/docrep/010/ai412e/ai412e00.htm>).

Although there was a great national debate in the 1980s about harvesting timber on the federal forests at the expense of other amenity values, that debate has now shifted largely to areas adjacent to federal lands. Former Forest Service Chief Dale Bosworth recently wrote that “structural shifts in timber production and markets were quietly bypassing the public debate” by reducing the economic attractiveness of national forest timber, citing the most recent Forest Service timber assessment (Haynes *et al.* 2007) and impacts of economic globalization on timber demand (Bosworth and Brown 2007).

In areas with a large proportion of public land, the reduction in federal timber sales in the 1980s substantially affected the forest products industry and economic foundation of communities adjacent to these lands, and led to a substantial loss in timber-processing facilities. Thousands of jobs were lost as processing mills closed across the West, especially in the Pacific Northwest, and timber production moved to Canada and the southeastern United States.

About the same time as the timber harvest reductions, federal lands in the western United States experienced an increase in uncharacteristically severe wildfire and insect and disease epidemics due to droughts and overly dense forest stands (GAO 1999; Arno and Allison-Bunnell 2002; Schmidt *et al.* 2002; Allen 2004). Federal land managers estimate that over 40 million hectares (100 million acres) of federal forest lands are at unnaturally high risk of catastrophic wildfires and large-scale insect and disease outbreaks because of unhealthy forest conditions (Senate Agriculture Committee 2003). A major expansion of residential development into rural areas, often adjacent to national forest lands, has increased the level of risk associated with wildfires. An increasing awareness in local communities has created growing local constituencies supporting active thinning and restoration of forests to reduce the risk of uncharacteristically severe wildfires.

Thinning and controlled burning are critical management tools to restore and improve the ecological resiliency of many forests on federal lands (Arno and Fielder 2005). Yet the decline in the forest industry adjacent to many federal lands has substantially diminished the capacity to treat these stands through commercial operations. That decline and loss of capacity continues and is adversely affecting both the ability of federal land managers to maintain healthy forest conditions and the economic viability of local communities adjacent to these lands.

Re-investment in efficient processing facilities adjacent to federal lands in the West is hampered by the fact that: 1) many of these lands are in remote areas; 2) the material now being harvested from these lands is largely small diameter, low value material from thinnings; and 3) the flow of this small diameter material tends to be inconsistent and unreliable.

### **Lessons learned, recent developments and recommendations on policies that could improve the investment climate in the forest sector**

With respect to private lands, experience in the United States suggests that the most important factors leading to sustainable management include: 1) reliable and relatively consistent markets for forest products; 2) secure and stable land tenure policies; 3) tax policies that reflect the long-term nature of forestry investments; 4) effective programmes

to reduce the risk of losses from insects, disease and wildfire; 5) the availability of technical and (sometimes) financial assistance to small landowners; and 6) a regulatory context that is sensitive to the needs of forest landowners.

Experience suggests that, in addition to consistent markets for forest products, one of the most important policy elements affecting investment in, and management of, private sector forests is land tenure rights and stability. Forest investments are, by their nature, long-term commitments, and are secured primarily by the promise of future return. Land tenure rights that protect the ability of private landowners to realize financially competitive returns from those investments have been critical to attracting private forest investments in the United States and other countries with significant private forestry sectors. In addition to clear forest tenure rules, it is critical that landowners have a perception of forest tenure stability as well as security.

It is also clear from experience that forest protection (from wildfire, insects and disease), research and extension, and forest inventory and assessment are key government roles that set the stage and conditions that enable and encourage private investment in forests. In recent years, the U.S. Forest Service has spent about US\$2 billion annually in a variety of forest protection activities. The bulk of this (averaging US\$1.8 billion annually) is wildfire management (fire preparedness, suppression, thinning, fire research and related activities), with the remaining amount devoted to insect and disease protection on federal and non-federal lands. About US\$600 million is spent annually on forest-related research in the United States (federal and state levels) (USDA/Forest Service 2008a p. 2-90).

Information on the area and condition of forests is also important both to sustainable management and to private investment. The U.S. Forest Service has conducted a national forest inventory system on all forest lands since the 1930s. This system has improved over time to obtain information on an ever larger suite of conditions and measurements. This Forest Service responsibility was expanded in the 1970s by a Congressional statutory charge to carry out periodic national assessments of renewable resource conditions and their demand and supply situation.

Experience suggests that policy centralization at the federal level does not necessarily mean effective coordination, especially when it is not coordinated with market-based policies nor focused on sustaining competitiveness of the forest sector in the global economy. The new federal agencies created out of the 1970 environmental legislation, and the existing agencies that were given additional responsibilities from it, sometimes have had substantial difficulties in developing coordinated environmental and natural resource policies. This has resulted in sometimes cumbersome and redundant process requirements imposed by environmental regulatory agencies on federal land management agencies, state governments and private landowners.

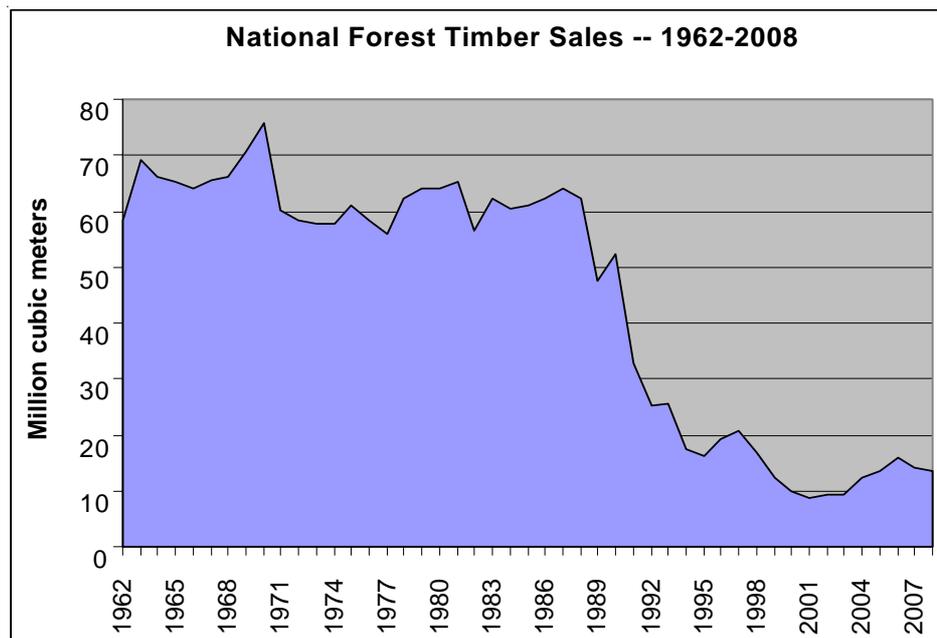
### ***Challenges facing the forest sector***

Even though the forest sector is the beneficiary of strong domestic markets for forest products and a generally favourable institutional environment, the long-term future of the forest products industry in the United States is far from certain. The positive effect of strong property rights and other institutional benefits is offset by high labour and environmental compliance costs and the loss of forest land to alternative uses. Significant

challenges exist, including the difficulty of profitably providing products from domestic forests to domestic markets which are also supplied by low-cost products from abroad.

Since 1989 annual timber production has essentially stagnated at around 425 million m<sup>3</sup> (15 billion cubic feet), although the forests are certainly capable of supplying much greater volumes. In addition to high labour and environmental compliance costs, factors potentially leading to a decline in the forest product sector in the United States include:

1. A sharp decrease in timber supply from public lands (Figure 9).
2. The re-organization of the integrated forest product industry, which over time will likely reduce the area managed for timber production and is likely to result in substantial acreage of forest land moving into second homes and other non-timber uses.
3. Increased urbanization and parcelization of private forest lands, which reduces the likelihood that the property will be managed for timber production.
4. A decline in research focused on maintaining a globally competitive forest sector.
5. The unintended effects of agricultural subsidies acting to maintain marginally productive lands in agricultural uses rather than moving to forest uses.



**Figure 9. USDA forest service timber sales, 1964-2008 (Cut and Sold Reports 2008)**

There is virtually no establishment of new forest plantations on agricultural or other non-forest land in the United States. In contrast, both Asia and South America are rapidly establishing high quality, fast-growing plantations and making significant investments in state-of-the art processing facilities (Binkley 2007).

The United States invests a relatively small amount in research designed to support a globally competitive forest sector, compared to other developed countries with a significant forest sector such as Canada, Finland and Sweden (USDA/Forest Service 2008a; Dovetail Partners 2008). This is a significant barrier to forest sector competitiveness. In the past, the forest products industry engaged in research and development, aimed mostly at increasing the yield and productive capacity of forest lands, but also at mitigating soil, water and other environmental effects of management activities. In 2002, the forest industry employed about 124 full-time equivalents in research and extension personnel (90 percent in research). This represented about 6 percent of all forestry research personnel and a much larger percentage of the research aimed at solving practical problems (unpublished Forest Service report). With the disintegration of the integrated forest products industry, much of this research capacity has collapsed. In addition, publicly funded research has moved into areas not related to maintaining a competitive forest products industry (Binkley 2007).

Some of the research devoted to developing fast-growing commercial trees that was formerly carried out by integrated forest products companies is now being done by Arborgen. Arborgen, headquartered in Summerville, South Carolina (formerly the site of Westvaco's tree genetics research laboratory), was formed out of the American-based nursery and seed orchard operations of International Paper and MeadWestvaco, and that of Rubicon Limited in New Zealand and Australia.<sup>40</sup>

Currently, considerable public and private research is conducted on cellulosic ethanol. Although cellulosic ethanol has garnered much attention, it is not the only biofuel that could be produced from wood. Indeed, a recently completed, major European study of biofuel alternatives, funded by the EU, concluded that it would be more competitive in the long run to produce diesel or similar fuels via biomass gasification and Fischer-Tropsch synthesis.<sup>41</sup>

More broadly, there are other forest products offering yet higher revenue that can be produced from small-diameter trees, such as mechanical pulp and oriented strand board (OSB). However, there is little if any coordination or focus of efforts on identifying technology development pathways that afford the greatest economic returns to forestry or the greatest good in terms of sustaining global competitiveness of the forest sector. Currently, wood pellet, pulp and OSB producers all use wood residues. Mill capacity in the United States has decreased causing these industries to compete for a limited supply. Significant expansion of biomass for energy will require the use of additional sources of woody biomass (such as biomass produced from fuel treatments), which may make the feedstock more expensive.

A major problem is that forest sector competitiveness has not been subject to systematic policy attention in the United States, whereas it is a prominent focus of public policy in other competing countries, particularly in Europe, Asia and Canada, and for agriculture in the United States.

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<sup>40</sup> Arborgen's Web site is at <http://www.arborgen.com/>

<sup>41</sup> <http://www.RENEW-fuel.com>

### ***Potentially positive factors***

The factors described in ‘challenges facing the forest sector’ could well portend a long-term decline in the level of wood product harvest and a further decrease in the American forest products industry. These factors could be partially offset by: 1) increasing the productivity of intensively managed timber plantations in the United States (Figure 8); 2) the proximity of forest land to significant population centres and the markets for forest products that they provide; and 3) expanding opportunities for globally competitive products, such as biofuels, engineered wood products and energy-efficient materials.

Emerging issues that could improve the investment climate in the forest sector include: 1) expansion of the certified land base; 2) the role and effect of ecosystem services markets (including carbon credits); 3) the use of woody biomass as an alternative energy source; 4) more information about the energy and other environmental benefits of using wood products compared to alternative materials; and 5) the expansion in the use of conservation easements as a tool to maintain working forests.

### ***Certification***

Forest products certification emerged in the United States in the 1990s. There are two main certification systems operating nationwide – the FSC and the SFI. The area of forests certified by the FSC and SFI has increased from virtually zero in 1998 to over 24 million hectares (60 million acres) (USDA/Forest Service 2007c). About 5.7 million hectares (14 million acres) of state-owned lands have been certified, mostly to both FSC and SFI standards. In addition, about 11 million hectares (27 million acres) are certified under the American Tree Farm System, a certification programme tailored to family forest owners (USDA/Forest Service 2007c). Because a price premium is only now beginning to emerge in some markets for certified wood, certification systems are not as popular in the United States as they may one day become (Sedjo 2008).

Interest in certification programmes has recently increased due to green building rating systems and purchasing policies that favour certified products. In addition, forest certification is a component of some protocols to participate in emerging carbon markets for forest land. Price premiums are beginning to emerge with this increased demand for certified products and some producers are finding certification necessary to maintain a presence in certain markets. Whether or not price premiums can be sustained as more certified products are produced is still an open question.

### ***The role of forests in addressing global climate change***

Rising concerns for addressing climate change could affect the forest sector in a variety of ways. The Society of American Foresters recently released a major report on the implications of climate change to the U.S. forest sector (Malmsheimer 2007).<sup>42</sup> In October 2008, the U.S. Forest Service released its strategic framework for responding to climate change (USDA/Forest Service 2008d).<sup>43</sup> The forest products industry should be well positioned in an era in which a low carbon footprint could become a competitive advantage (Minor and Perez-Garcia 2007).

<sup>42</sup> The SAF Climate Change Task Force Report can be viewed at [http://www.safnet.org/jof\\_cctf.pdf](http://www.safnet.org/jof_cctf.pdf)

<sup>43</sup> <http://www.fs.fed.us/climatechange/documents/strategic-framework-climate-change-1-0.pdf>

Three of the several emerging issues related to addressing climate change are: 1) the role of forests in sequestering carbon; 2) expanding the use of wood for energy; and 3) the use of wood as an energy-efficient building material.

### Forests and carbon sequestration

As forests are a large carbon sink, climate change may present opportunities for the forest sector (Aulisi *et al.* 2008). Because forest growth exceeds removals, forests nationwide currently sequester about 10 percent of United States greenhouse gas emissions (Birdsey *et al.* 2006). This could be increased somewhat through forest management activities. Even with an increase in sequestration in forests and increased use of biofuels, a significant reduction in United States carbon emissions will be needed to reduce overall national contributions to global atmospheric carbon, as well as to achieve other desirable social objectives (Bowyer 2007).<sup>44</sup>

Currently, the United States does not have a national carbon tax or mandatory cap-and-trade system for CO<sub>2</sub>. In the absence of a national mandatory cap-and-trade system, several state, regional and voluntary cap-and-trade systems have emerged, for example: 1) the Chicago Climate Exchange is a market in which numerous corporations have made voluntary, but legally binding commitments to reduce their emissions; 2) California is developing a cap-and-trade system for the state; and 3) the Northeastern states launched a cap-and-trade system called the Regional Greenhouse Gas Initiative. Each of these markets trade in carbon credits, though accounting rules, verification standards, and inclusion of forest-based offsets vary from system to system.

The real effects of carbon markets on the United States forest sector cannot be evaluated until federal legislation is enacted. If cap-and-trade legislation is passed, many technical challenges will remain. Dealing with issues of additionality and leakage in forest-based carbon protocols will be complex and difficult (Ruddell *et al.* 2007). There are also potential conflicts between carbon sequestration objectives and other resource management objectives (Ray *et al.* 2009).

### Use of wood for energy

From the early 1600s until the 1880s, when it was superseded by coal, wood was the primary energy source in the United States. Today, biomass provides about 3 percent of energy production – more than hydropower (Energy Information Administration). In recent years, there has been enormous interest in expanding the use of wood and other biobased fuels, both to reduce dependency on imported oil and to reduce overall carbon emissions (Sample 2008; Malmshiemer 2008).

Studies have shown that there is a substantial forest biomass resource potentially available (Perlack *et al.* 2005). In addition, there is a potential synergy in restoring healthy forests on both public and private forest lands by thinning, removing small diameter material and producing carbon neutral energy from biomass (BRDB 2008; Polagye *et al.* 2007).

<sup>44</sup> Various information on carbon and other ecosystem services markets in the US is available at <http://www.fs.fed.us/ecosystemservices/carbon.shtml>

Major technical, economic and feedstock challenges exist regarding a substantial expansion of wood energy. The most energy-efficient use of wood remains direct combustion processes (Roberts and Nilsson 2008). Most forest products processing facilities already utilize wood residues for heat and power. There are also other industrial uses for mill residues (i.e., OSB production). Wood is a low density energy product that has relatively high harvest and transportation costs. Therefore, very little additional material is leaving the woods for the purpose of energy production. As fossil fuel costs increase, so does the cost of wood gathering and transport. Expanding the use of biomass for energy could tighten the supply for all users of woody biomass, causing prices of raw material to rise (Bratkovich *et al.* 2009).

There is substantial interest in cellulosic ethanol, which is more energy efficient and has lower environmental impacts compared to maize ethanol, which currently dominates the ethanol fuelmarket in the United States (Hill *et al.* 2006). Cellulosic ethanol faces a variety of economic and technical issues (Hill *et al.* 2006). Even if these can be overcome, it is likely that cellulosic ethanol will draw primarily from agricultural and municipal waste feedstocks. Of the six cellulosic ethanol prototype plants funded by the U.S. Department of Energy, only one will be based on forest biomass (Spelter and Zerbe 2008).

A variety of subsidies is in place or proposed for encouraging more use of biofuels. Such subsidies could act to spur technological innovations and could increase the amount of wood being harvested for energy. They could also have negative consequences. For example, if biobased fuels are given preferential treatment through public subsidies or mandates, that could very well act to displace higher value uses of wood, such as paper or panel products.<sup>45</sup>

The Energy Independence and Security Act of 2007 contains a definition for renewable fuels eligible for federal subsidies. However, wood from public lands and non-plantation private forests does not meet the definition. Currently, Congress is debating a national cap-and-trade bill that may include a renewable energy standard governing electrical utilities. The definition of 'renewable energy' under the bill could substantially affect how much woody biomass is used to produce electrical energy in the near future.

A number of projections indicate that public policy-driven demand for bioenergy could transform the American forest products industry. The 2009 Annual Energy Outlook Report prepared by the Energy Information Administration<sup>46</sup> makes predictions out to 2030 based on the laws in place as of November 2008. This report predicts biomass energy generation increasing from 39 billion kilowatt-hours in 2007 to 231 billion kilowatt-hours in 2030 (Energy Information Administration 2009a). The Energy Information Administration (EIA) also analysed future biomass energy generation if a 25 percent federal renewable electricity standard is enacted. Depending on the scenario, the EIA predicts increases in biomass generation in 2030 from between 438 billion kilowatt-hours and 577 billion kilowatt-hours (EIA 2009b). Resources for the Future, a Washington, DC-based natural resource think tank, projected that federal mandates and subsidies for wood-based biofuels and bioenergy could increase national wood consumption by 60 percent by the 2020s, increasing wood prices by 20 percent or more (Sedjo and Sohngen 2009). It should be noted that such projections are based on federal subsidies and mandates both in existing laws and pending legislation which could be modified and likely will be.

<sup>45</sup> Information on wood-based bioenergy can be viewed at <http://www.pinchot.org/>

<sup>46</sup> The Energy Information Administration is an independent agency within the U.S. Department of Energy, which collects and analyses data on energy generation across all sectors and publishes analytical reports.

### Wood as an energy-efficient building material

Buildings in the United States are responsible for 40 percent of total carbon emissions (U.S. Green Building Council 2007). As interest in 'green' building materials and practices grows, wood may be increasingly used in the green market place. Wood-based building materials typically can be produced with a much lower environmental footprint than alternative materials (Malmshheimer 2007; Bowyer 2005a; Lippke *et al.* 2004).

Leading green building rating and certification programmes are only now beginning to incorporate rating elements based on the environmental footprints associated with the manufacturing, transportation, use and disposal of major building materials (Bowyer 2006). As a matter of public policy the environmental footprint of building materials should be a key rating factor in green building programmes. Some progress has been made in this regard, but much more is needed (Bowyer and Lindburg 2008).

Environmental life cycle assessment (LCA) can provide an effective mechanism for evaluating the energy and other environmental impacts associated with raw material and building product choices and postconstruction maintenance and end-of-product-life strategies. Over the last few years, LCA has become an ever more sophisticated and powerful tool that has also become easier to use. One example is the Athena Eco-Calculator, which can be used to inform architectural design and building material selection.<sup>47</sup> Today, LCA data for a vast array of building products and assemblies are easy to access and use, with user-friendly, free or low-cost online and other software tools readily available to architects, civil engineers and others.

The use of wood products should benefit from expanded use of LCA tools and the associated LCA-related credits available through various green building programmes. A key challenge is to develop acceptable standards and protocols for life cycle analysis that are both technically sound and also accepted by advocates of building materials, which often fiercely compete in the marketplace (Bowyer 2005b).

### ***Expansion in the use of conservation easements to protect forest land***

Over the past few decades, public and private entities have shown a willingness to purchase conservation easements, which has been a positive factor in maintaining a private forest land base (Fernholtz 2006). Conservation easements are legally binding instruments under which a landowner relinquishes the right to develop a parcel of land for commercial or residential or other use specified in the agreement.

Conservation easements have become increasingly popular in the United States and Canada where local zoning ordinances limiting uses of land tend to be less restrictive than in European countries. A conservation easement typically allows the land to be managed for its current use.<sup>48</sup> An easement may be purchased by a government entity or conservation NGO. Landowners generally receive tax benefits if they donate an easement.

<sup>47</sup> <http://www.athenasmi.org/tools/ecoCalculator/>

<sup>48</sup> For an overview on conservation easements, see <http://attra.ncat.org/attra-pub/PDF/coneasements.pdf> and <http://www.dovetailinc.org/reportView.php?action=displayReport&reportID=48>

Between 1992 and 2009, the U.S. Forest Service, under its Legacy Program, has provided individual states a total of US\$392 million for public acquisition of land for conservation purposes. About 75 percent of this was used for purchase of conservation easements. States combined these funds with US\$517 million of funds from other sources to acquire land and easements amounting to 727 000 hectares (1.8 million acres).<sup>49</sup>

Information on the total area covered by conservation easements and their locations is elusive. The National Land Trust Alliance estimates that conservation easements on 2.5 million hectares (6.2 million acres) of land have been acquired by conservation groups and land trusts.<sup>50</sup>

There are a variety of public and private actors involved in the acquisition of conservation easements. The long-term effectiveness of these efforts would be enhanced by better coordination and development of strategic approaches for the acquisition of easements and land for conservation purposes.

## **Public policy recommendations to improve private sector investment in the forest sector**

### *Reform tax policy*

Because the United States relies so heavily on privately-owned forests for timber and a wide variety of environmental services, there is a public value and interest in seeking to keep private forests as working forests. The tax code is a key element in achieving this goal. Both the federal government and many states have created tax provisions that encourage forest ownership (Ellefson *et al.* 2005). Nevertheless, the existing federal and state tax codes are extremely complex and, for many forest landowners, often difficult to comprehend and apply.<sup>51</sup>

Current federal tax policy strongly discriminates against integrated forest product companies which own forest land. These tax law changes lead to the creation of a new class of forest owners interested primarily in return on investment, whether it comes from harvesting trees or subdividing land for commercial or residential use. Even if the land stays under forest use, this class of investors tends to periodically sell their land in units smaller than were purchased, which will lead over time to a decline in the economic attractiveness of managing the land for the production of forest products (Binkley 2007). Another result of this ownership shift has been a substantial reduction in research and development designed to maintain a globally competitive forest products industry. Should this situation persist, long-term negative effects on the forest sector are inevitable.

The change in the industry from one type of company (integrated) to another type of company (TIMOs, REITs) was an unintended effect, driven mostly by changes in federal tax policy. The consequences have been profound and are now essentially irreversible. The take home message is that tax policy changes can have profound and often unintended effects on

<sup>49</sup> <http://www.fs.fed.us/spf/coop/programs/loa/flp.shtml>

<sup>50</sup> <http://www.landtrustalliance.org/about-us>

<sup>51</sup> Various efforts have been made to provide usable information to private non-corporate landowners to increase awareness of the tax implications of forest management (see the National Timber Tax Web site at <http://www.timbertax.org>).

investment and the very structure of an industry. Such changes should be thoroughly examined before their adoption.

There is no single public or private institution in the United States which has a charge of systematically evaluating federal and state tax laws, or proposed changes to them, as to their implications to sustainable forest management or the global competitiveness of the United States forest sector. If such an institution were to exist, Ellefson *et al.* (2005) suggest it should seek to address the following questions:

1. How do tax policies affect investments in long-term forest productivity?
2. How do they affect the propensity of private forest land owners to apply ecologically sound forest management practices?
3. How do they encourage retention or expansion of the forest land base?
4. How do they protect and increase the production of wildlife habitat and other important non-timber benefits?

The current tax code for the forest sector, which is so important to sustainable forest management, as well as to maintaining global competitiveness, has not been periodically or systematically evaluated yet as to how it addresses the four questions listed above; this suggests a substantial institutional void.

**Recommendation: Consideration should be given to establishing new institutional arrangements (for example, a public/private entity) whose mission is to comprehensively evaluate federal, state and local tax codes, assess their effects on the United States forest sector and propose principles and appropriate modifications to enhance the sustainable management of forests and the global competitiveness of the forest sector.**

*Evaluate programmes and research and development priorities to enhance the global competitiveness of the forest sector*

The U.S. Forest Service is by far the largest manager of funds for forest and rangeland research in the world, utilizing US\$286.9 million of enacted funding in 2008 (US\$225.6 million for forest and rangeland research plus US\$60.4 million for forest inventory and analysis) (USDA/Forest Service 2008c). However, despite this large research programme (and also other forestry programmes that focus on state and private forestry matters), the Forest Service does not promote sustaining the global competitiveness of the forest sector as one of its mission areas.

This stance is quite unlike that of other USDA agencies, such as the USDA Agricultural Research Service and USDA Economic Research Service, which both identify sustaining a competitive agricultural economy or the goal of a competitive agricultural system among top agency research priorities.<sup>52</sup> This stance is also different from that of Canada and many European countries which have maintaining the competitiveness of the forest sector as a mission goal.

<sup>52</sup> <http://www.ars.usda.gov/aboutus/docs.htm?docid=2> ; and <http://www.ers.usda.gov/Emphases/>

Although the Forest Service has a large and broad research programme, the agency has no permanent staff dedicated to focusing research, development or forestry programmes on sustaining global competitiveness or investment in the forest sector. Most state forestry agencies also lack sufficient staffing in economics to focus their programmes on global competitiveness issues. With few exceptions, no other federal agencies (including the Commerce Department) have any staff permanently dedicated to analysing or resolving forest sector competitiveness issues, apart from staff who are occasionally assigned to handle tariff or trade disputes. The USDA Foreign Agricultural Service (FAS) is engaged in promoting the use of American wood products in other countries that, in many cases, impose barriers to entry for American wood products.

There have been some industry, professional and non-governmental efforts to identify research priorities. Agenda 2020 focuses on research in energy and biofuels.<sup>53</sup> The Society of Wood Science and Technology is working on a strategic plan for wood product research.<sup>54</sup> But it is an open question whether these ad hoc efforts can realistically sustain the research capacity needed to maintain a globally competitive forest sector without active government involvement and commitment.

**Recommendation: Assess the potential benefits of a collaborative public and private forest research structure designed to foster the global competitiveness of the United States forest sector.**

**Recommendation: In order to support the long-term sustainability of forests, both public and private, for a wide variety of values and ecosystem services, the federal government should assess the potential benefits of adopting as a public policy objective the goal of fostering the global competitiveness of the forest sector.**

#### *Expand use of conservation easements and improve coordination*

Conservation easements are a very popular tool to maintain land under forest uses. Corporate and other financially driven landowners, such as TIMOs, tend to be receptive to selling easements as a way to boost returns on the land. Conservation easements can be a cost-effective policy tool to maintain the production of environmental services and retain land in forests. The most cost-effective time to acquire an easement is before development is imminent. There is a need, however, for better information on the area and location of land that has easements. There is also a need for better coordination among conservation NGOs and public agencies so that acquisition of easements can be strategic and minimize acquisition costs.

**Recommendation: Initiate a public/private cooperative effort to address the following:**

- 1. Assess the current extent and effectiveness of conservation easements.**
- 2. Evaluate the full range of associated public costs and benefits.**
- 3. Develop strategic approaches to maximize the effective use of easements.**

<sup>53</sup> <http://www.agenda2020.org/default.htm>

<sup>54</sup> <http://www.swst.org/meetings/NR08/NR08.html>

### *Develop and promote effective approaches for life cycle analysis of building materials*

Green certification programmes for building construction that recognize the lower life cycle impacts for wood products versus alternate materials could strengthen markets for structural wood products (Bowyer 2006).

The quality and ease of use of life cycle assessment has improved dramatically in recent years.<sup>55</sup> Improving existing tools for life cycle analysis and promoting their use by green building programmes should improve the position of wood compared to other building materials.

Life cycle analysis must be a key element in evaluating the carbon and environmental footprints associated with alternative building materials (Bowyer 2005a; Bowyer 2005b). Material selection is presently largely based on intuition and immediate cost, rather than science and total costs, leading to environmentally poor choices in many cases (Bowyer and Lindburg 2008).

**Recommendation: A major effort should be made to work with appropriate standard-setting bodies and technical experts to refine approaches and appropriate protocols for assessing the life cycle environmental footprint of building materials. These studies then should be incorporated into the rating systems for green building standards. Continue and expand efforts to promote the use of life cycle assessment and improve its ease of use, sophistication and utility for builders.**

### *Improve the reliability of federal forest product offerings*

Since 1985, there has been a dramatic shift in the mission focus of federal lands, which is now largely on restoring and maintaining healthy ecological conditions and meeting the recreational and amenity preferences of local and national stakeholders. Thinning and controlled burning are critical management tools needed to restore and improve the ecological resiliency of many forests on federal lands. Yet the decline in the forest industry adjacent to many federal lands has substantially diminished the capacity to treat these lands.

Re-investment in efficient processing facilities adjacent to federal lands is hampered by the fact that: 1) many of these areas are quite distant from established markets, 2) the material now being harvested from these lands is largely small diameter, low value material from thinnings; and 3) the flow of this material tends to be both at low levels and inconsistent and unreliable over time.

In recent years, efforts have been made to provide information on the nature and timing of material being offered from federal and state lands in logical supply areas. This project, called Coordinated Resource Offering Protocol (CROP), has several objectives: 1) to facilitate coordination of biomass removal between public agencies; 2) facilitate the use of long-term multi-agency stewardship contracts to achieve biomass removal; 3) increase the certainty of 'levelized' biomass supply offerings from public agencies; 4) invite investment back into a

<sup>55</sup> One example is the Athena Eco-Calculator, which can be used to inform architectural design and building material selection (<http://www.athenasmi.org/tools/ecoCalculator/>)

sustainable forest management landscape; and 5) heighten public trust and support for biomass removal from public lands operating within a transparent process (Mater 2007).<sup>56</sup>

**Recommendation: The CROP programme should be evaluated for effectiveness and, if appropriate, expanded. In addition, other barriers to attracting appropriate investments in processing capacity adjacent to public lands should be systematically assessed and addressed.**

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<sup>56</sup> [http://www.forestsandrangelands.gov/Woody\\_Biomass/supply/CROP/index.shtml](http://www.forestsandrangelands.gov/Woody_Biomass/supply/CROP/index.shtml)

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### ***Useful Internet sources***

- Forest inventory data for the United States: <http://www.fia.fs.fed.us/>
- Forest Service research publications: <http://www.fs.fed.us/links/pubs.shtml>
- RPA Assessment documents: <http://www.fs.fed.us/research/rpa/assessment-pub.shtml>
- Information on United States income and property taxes on private forests: <http://www.timbertax.org/>
- For the EPA site with forest water quality and state best management practices (BMPs) rules: <http://www.epa.gov/owow/nps/forestry.html>

## **Appendix 1. Brief summary of the 1970 environmental laws that had the most significant effect on the US forest sector<sup>57</sup>**

### **Clean Water and Clean Air Acts**

Under both the Clean Water Act and Clean Air Acts, the Environmental Protection Agency (EPA) establishes overall standards for protection of air and water quality. States are responsible for implementing these standards and receive some federal funding to do so. All states have passed laws and issued implementing regulations to govern compliance with the federal regulations under the Clean Air and Clean Water Acts. The focus in the 1970s of both of these federal environmental laws was to address the substantial pollution levels that were coming from industrial and manufacturing facilities and municipal sewage sources.

Although the states have the primary responsibility to implement these acts, the federal government retains the authority to step in directly to require compliance of industrial and municipal sources of pollution if the state regulatory performance is inadequate. This federal intervention has occurred on a number of occasions.

Under the Clean Water Act, forestry and farming operations are considered ‘non-point’ sources of pollution. Prevention of soil erosion from forest lands is done indirectly through the use of best management practices (BMPs) that guide forestry operations, including road building, to reduce soil movement to streams. States are responsible for developing and implementing BMPs for logging operations.<sup>58</sup>

Under Section 404 of the Clean Water Act, landowners wishing to drain or fill all or a portion of a wetland must obtain a federal permit from the U.S. Army Corps of Engineers (COE). Notice is issued on permit applications and the public may provide comments. In issuing the permit, the COE must consider any comments received, the importance of the wetland values involved and options to minimize the environmental impacts of the proposed action. The permit applicant may be required to mitigate the effects of the proposed action by restoring or creating wetlands elsewhere. General permits are issued to cover certain categories of relatively routine activities, such as minor road crossings. The EPA can override a COE decision to grant a dredge or fill permit.<sup>59</sup>

Under the Clean Air Act, forestry and farming operations are considered ‘area’ sources of pollution. Many states have excluded agriculture from regulation. In many states, the use of prescribed burning from forestry operations must be coordinated through responsible state air quality agencies and/or the state forestry agency to minimize smoke emissions through the timing of burning operations and other techniques. Smoke management requirements are generally tailored to the existing ambient air quality. If air quality from other sources is poor, smoke management requirements on forestry operations can be significant.<sup>60</sup>

<sup>57</sup> Additional summary information on some of the 1970s environmental laws: <http://ceprofs.tamu.edu/rhann/links/law.asp>

<sup>58</sup> Information on state level BMPs for protecting water quality: <http://www.epa.gov/owow/nps/forestry.html>

<sup>59</sup> Information on Section 404 requirements can be obtained from: <http://www.epa.gov/owow/wetlands/facts/fact10.html>

<sup>60</sup> Information on smoke management requirements can be obtained from: <http://www.epa.gov/agriculture/tburn.html>

## **Endangered Species Act**

The Endangered Species Act of 1973 (ESA) is one of the most far reaching of United States environmental laws. Section 7 of the ESA prohibits federal agencies from carrying out actions that might jeopardize the continued existence of any species listed as threatened or endangered by the U.S. Fish and Wildlife Service (F&WS) or National Marine Fisheries Service (NMFS). Under the law, this obligation of federal agencies to protect listed species is absolute and cannot be mitigated or reduced by considerations of the adverse social or economic impacts of doing so.<sup>61</sup> In 2002, 517 species of animals and 745 species of plants were listed as threatened or endangered in the United States.

The ESA requires federal agencies to be proactive in conserving threatened and endangered species and the ecosystems upon which they depend. Also, the F&WS and NMFS, through the 'consultation' process required by the act, must review projects and activities proposed by federal agencies that would affect listed species or their habitat and concur with or issue a biological opinion on such projects.

The ESA has had less effect on private landowners than it has had on federal land-managing agencies. Nevertheless, under the ESA it is a federal offence for private parties to 'take' listed animal species. Over the years, some courts have interpreted this to encompass not only direct purposeful actions that harm listed species, but indirect actions by private landowners resulting in modification of habitat to the detriment of a listed species. The F&WS directly enforces the ESA on private lands, rather than working through the states, as is the case for most other federal environmental laws.

The ESA has been viewed as sometimes having a perverse effect on private landowner behaviour, in that it is generally accepted that some landowners, in order to avoid federal regulation, harvest their trees before the stands reach a condition that they could become attractive to a listed species, such as the red-cockaded woodpecker (Zhang 2000). In response, under Section 10(a)(2) of the ESA, the F&WS has sought to allay landowners' fears by entering into agreements, called Habitat Conservation Plans, that reduce landowner financial and regulatory risk if private forests are managed in part as habitat for endangered or threatened species.<sup>62</sup>

## **NEPA**

Along with the ESA, the National Environmental Policy Act (NEPA) was another significant piece of 1970s era environmental legislation that has substantially affected federal agencies. NEPA established the Council on Environmental Quality, a White House agency, to give executive advice and coordination on environmental matters.

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<sup>61</sup> The only provision in ESA for considering the economic and social trade-offs involved in a proposed federal action that would jeopardize a listed species requires convening a cabinet-level committee. This has seldom been done.

<sup>62</sup> Information on HCPs can be found at: <http://endangered.fws.gov/hcp/>

NEPA also required federal agencies proposing actions that would have a significant effect on the environment to examine and disclose in an Environmental Impact Statement (EIS) the anticipated environmental effects of the proposed action and of a reasonable range of alternatives to it. Although a procedural requirement, over the years (and shaped by myriad court decisions interpreting what federal agencies must do) the requirement to prepare EISs, and seek public input on them, has evolved into a significant obligation of federal land-managing agencies.<sup>63</sup> Many states have adopted NEPA-like obligations on state-level agencies, as well.

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<sup>63</sup> For additional information on NEPA and its implementation, go to: <http://ceq.eh.doe.gov/nepa/nepanet.htm>

# Private sector financing for forestry in Viet Nam

Pham Quang Ha<sup>1</sup> and Le Trong Hung<sup>2</sup>

## Introduction

Viet Nam's forestry sector is undergoing many important changes as the country becomes increasingly integrated into the global economy. These changes are reflected in the new Vietnam Forestry Development Strategy, 2006-2020 (MARD 2007a). This strategy sketches out medium-term strategic directions for the overall sector aimed at ensuring wider participation from various economic sectors and social organizations to make more meaningful contributions to national socio-economic development, poverty reduction and improvement of rural livelihoods and environmental protection. Achieving these objectives will require the active engagement of all relevant stakeholders as well as the mobilization of other resources and investment financing, especially from the private sector – both domestic and foreign.

In the last few years, the forestry sector in Viet Nam has achieved significant results. Forest area increased from 9.3 million hectares in 1995 to 12.73 million hectares in 2007 (on average by around 0.3 million hectares/year) (MARD 2007a). The forest plantation area reached 2 551 400 hectares by 2007. Yield from plantation forests is now around 2 million m<sup>3</sup>/year and can partially supply material to the paper and mining industries, wood chips for export and fuel wood, thus reducing pressure on natural forests (MARD 2008).

The timber-processing industry and export of forest products have been vigorously developed in recent years (export of wood products increased from US\$61 million in 1996 to US\$1 570 million in 2005 and an estimated US\$2 700 million in 2008) (MARD 2008), which has significantly contributed to the export turnover of the entire country and created opportunities for the development of forest plantations supplying raw materials to industry.

Forestry production activities have shifted from state-owned enterprises (that followed central planning mechanisms) towards multisector-based socialized forestry, which favours commodity production.

However, the forestry sector still faces many challenges, such as:

- The productivity and quality of plantations and natural forest is still low.
- Although there has been an increase in forest area, the quality and biodiversity of natural forest in many locations has steadily declined.
- The growth of the forestry sector is limited and unsustainable.
- In addition to low levels of competitiveness there is a failure to properly and effectively use forest resources, including non-wood forest products (NWFPs) and environmental services. As a result the forestry sector has not yet met the demands for socio-economic development, especially for processing industries and export.

<sup>1</sup> Institute for Agricultural Environment (Hanoi, Viet Nam).

<sup>2</sup> Ministry of Education and Training (Viet Nam).

- The forest product processing industry has developed unsustainably due to a lack of long-term planning and strategies for growth. This has been exacerbated by low competitiveness as well as inadequate investment funds for technology development and modernization. Furthermore, raw material sources are unstable and dependency on imports remains.

## **Demand for forest products**

Demand for forest products in Viet Nam is increasing. Key factors that put this into perspective are: the population is expected to expand by 20 million to 100 million in 2020; GDP growth at 7-8 percent *per annum*, trebling real GDP per capita by 2020; growing international demand and improved market access will stimulate export demand; economic development and urbanization will increase demand for environmental services.

Significant growth is expected in demand for industrial forest products. An increase in demand for environmental services such as outdoor recreational activities is also expected (MARD 2005). Demand for forest products is expected to increase by around 7-9 percent *per annum* over coming years.

### ***International demand trends***

According to Katila (2007), international demand is growing, but less so in North America and Western Europe compared to Asia, especially the People's Republic of China, where demand is growing rapidly. The increase in demand in the Asian region is also driving international demand. The characteristics of wood product demand from an international perspective are primarily:

- Demand for wooden furniture, secondary processed wood products and panels will increase.
- Demand prospects for paper and paperboard are highest in Asia, especially in the People's Republic of China and India.
- Demand for paper-making fibre is expected to increase by 126 million tonnes by 2020.
- Japan will remain a major importer of wood chips in the foreseeable future.
- Most of the new fibre in Asia will be supplied by fast-growing plantations (e.g., *Acacia*, *Eucalyptus* spp.).
- Increasing demand for certified wood products and demonstration of legal origin (e.g., Forest Law Enforcement Governance and Trade [FLEGT]).

## **Overview of the forestry and wood-processing sectors**

### ***Current status of forestry and forest land in Viet Nam***

Forest land occupies about 38 percent of the total land area of Viet Nam. It is concentrated mainly among state-owned forest companies (19 percent), households, individuals (22 percent), protection forest management boards (17 percent) and commune committees (20 percent). Thus, the development of production forestry depends mainly on state-owned forest

companies, households and individuals. The area under joint-venture production between households and organizations occupies only 1 percent of the total current forest area (Table 1). The main thrusts for enhancing forest production efficiency focus on three forest management targets: state-owned forest companies; households; and joint-venture units. It is widely acknowledged that private investment in forestry will play an important role in the future (Dawson 2007).

**Table 1. Forestry structure under management groups**

Forest owner	Area (ha)	%
State-owned forestry companies	2 505 000	19
Protection forest management boards	2 156 000	17
Special-use forest management boards	1 743 000	13
Households, individuals	2 866 000	22
Communities	592 000	5
Military units	361 000	3
Joint-venture units	98 000	1
Commune committees	2 553 000	20
<b>Total</b>	<b>12 874 000</b>	<b>100</b>

Source: MARD (2007a).

### **Wood processing**

There are about 2 500 wood-processing plants in Viet Nam. They comprise:

- 26 wood-chipping plants (with production capacity of 25 000 to 180 000 tonnes dried chips per year) and small chip plants with total production capacity of about 2 million tonnes dried chips per year, equivalent to about 4 million m<sup>3</sup> of logs from plantation forest.
- 11 particle board-processing facilities and small-scale production plants (in 2006, particle board production in Dong Nai Province was about 20 000 m<sup>3</sup>). Their total production capacity is about 55 000 m<sup>3</sup> per year.
- Five medium density fibreboard plants with total production capacity of about 140 000 m<sup>3</sup> per year.
- About 20 laminated timber plants with total production capacity of about 180 000 m<sup>3</sup> per year.
- About 15 plywood plants with total production capacity of about 34 000 m<sup>3</sup> per year.

Industrial production capacity is estimated to be above 7 million m<sup>3</sup> of logs. Currently, Viet Nam has to import 70-80 percent of its wood raw material; therefore, there is no professional sawing industry.

There are about 300 Foreign Direct Investment (FDI) enterprises that conduct large-scale production; they account for 50 percent of the total export value of wood products for Viet Nam. The remainder is small and medium domestic enterprises.

There are 108 state-owned enterprises, 401 limited companies, 189 joint stock companies, 418 private companies and 300 FDI enterprises; the figure for joint-venture enterprises is unknown. There are 687 other businesses.

The paper and pulp mills are mainly located in northern and southern Viet Nam. Large-scale wood-processing enterprises are mainly located in eastern South Vietnamese provinces such as Binh Duong (370 large-scale enterprises [in total 650 enterprises], of which more than 50 percent have FDI support), Ho Chi Minh City, Dong Nai (219 large-scale enterprises [in total 706 enterprises], of which about 50 enterprises have FDI support) and Binh Dinh.

Wood-chip plants are mainly located in northeastern, northern central and coastal areas of the southern central region, near deep-water ports and plantation forests or where there is good water transportation infrastructure.

### ***The export market for wood products (2000-2007)***

In recent years, the wood-processing industry and its export value have increased dramatically with export turnover reaching US\$2.5 billion in 2007, 3.4 times higher than in 2003 (US\$567 million) and more than ten times compared to 2000 (US\$219 million). Wood products are ranked 4 in the top ten main export products of Viet Nam and are now exported to more than 120 markets worldwide; the main markets are the United States, the European Union and Japan. Tables 2 and 3 show export turnover of wood products in recent years:

**Table 2. Turnover of wood products, 1996-2007 (US\$ million)**

Year	1996	1998	2000	2001	2002	2003	2004	2005	2006	2007
Turnover	61	108	219	334	435	567	1 154	1 562	1 930	2 500

Source: Le Trong Hung (2006a).

**Table 3. Turnover of wood products in main export markets, 2003-2007 (US\$ million)**

Market \ Year	2003	2004	2005	2006	2007
United States	115.4	318.	566.9	744.1	930
European Union	160.7	379.1	457.6	500.2	
Japan	137.9	180	240.8	286.8	

Source: Le Trong Hung (2006a).

### ***Investment in the forestry sector from 2001-2005***

From 2001 to 2005, investment in the forestry sector was used by different stakeholders for activities such as forest plantations, wood processing and infrastructure development. During this period, 88.4 percent of the capital used in the forestry sector came from investment sources and 11.5 percent from administrative expenditure (Le Trong Hung 2006b). Table 4 shows the total annual investment in the forestry sector from 2001 to 2005.

**Table 4. Annual investment in the forest sector 2001-2005 (US\$ million)**

Item	2001	2002	2003	2004	2005	Total
<b>Total investment</b>	<b>165.3</b>	<b>179.1</b>	<b>206.3</b>	<b>208.0</b>	<b>214.0</b>	<b>972.7</b>
State budget for the 661 programme*	20.7	21.7	24.5	31.3	40.6	138.8
Infrastructure investment	24.5	35.2	45.7	34.9	42.6	182.9
Credit	43.1	49.5	42.4	42.5	39.2	216.7
Capital of enterprises and state forest enterprises	0.7	1.0	4.4	4.3	4.4	14.8
FDI	7.1	18.1	35.1	40.0	40.3	140.6
Household investments	4.7	4.8	5.2	5.4	5.8	25.9
ODA	63.7	47.0	48.5	47.2	38.6	245.0
Other	0.8	1.8	0.5	2.4	2.5	8.0

\*State-funded 5 million hectare reforestation programme.

Source: MARD (2007a).

### ***Expected investment requirements for 2006-2020***

Anticipated investment requirements for 2006 to 2010 and 2011 to 2020 are given in Table 5.

**Table 5. Expected investment requirements for 2006-2020 in US\$ million**

Programmes	2006-2010	2011-2020	Total	%	Govn't budget (%)	From other sources (%)
<b>Total</b>	<b>1 879.0</b>	<b>4 024.2</b>	<b>5 903.2</b>			
Sustainable forest management	953.7	1 660.0	<b>2 613.7</b>	44	30	70
Forest protection, biodiversity conservation and environmental services	227.7	603.7	<b>831.4</b>	14	60	40
Timber and forest product processing and trade	613.4	1 568.4	<b>2 181.8</b>	37	5	95
Research, education, training and extension	32.1	49.9	<b>82.0</b>	1.4	80	20
Renovation of institutions, policy, planning and monitoring	52.1	142.2	<b>194.4</b>	3.3	100	0

Source: MARD (2007a).

## **Review of investment attractiveness**

### **Key government policies to promote investment in the private sector for forestry development**

The main components of the current state laws, policies and regulations on promoting the private sector to invest in the forestry sector are summarized as follows (Dinh Ngoc Minh 2007):

According to the 2005 Law on Enterprises:

- The state recognizes the long-term existence and development of all kinds of enterprises as regulated by the law; ensures equity among enterprises without any discrimination in terms of ownership and economic entity; and acknowledges the legal revenue generation of all business operations.
- The state admits and reserves rights on asset ownership, investment capital, income and other rights and legal interests of the enterprise and enterprise owner.
- Assets and legal capital invested by the enterprises shall not be nationalized and confiscated by administrative measures.

Decree No. 88/2006/ND-CP dated 29 August 2006 specifies the procedures and steps for enterprise registration and the licence shall be issued within ten days from the date of receipt of an eligible set of documents. Provisions on the eligibility of the dossier, procedures, principles, steps and maximum duration required for dealing with the registration and establishment of enterprises are specified clearly. Such provisions actively support enterprises, particularly small- and medium-sized enterprises, including private enterprises working in the forest sector, to reduce the duration and costs attached to these steps.

The Ministry of Planning and Investment, the Ministry of Finance and the Ministry of National Security jointly issued Circular No. 02/2006/TTLT-KHDT-TC-CA. This circular provides for a 'one-stop shop' mechanism applicable to procedures on registration of business operations, tax codes and official stamps. Thus, the investor spends less time on accomplishing these matters.

The spirit of the 2005 Law on Tendering also aims at securing equal competition among economic sectors in terms of utilizing state sources while creating favourable conditions for the private sector for development.

#### *Policy on investment and investment support*

##### Investment policy

The investment policy in general, and for the forest sector in particular, is specified in the Investment Law approved by the National Assembly on 29 November 2005 and effective from 1 July 2006. Details include:

- The investor is permitted to invest in fields that are allowable by state laws; to be self-controlled and to have the right to take the initiative in making decisions on investment in accordance with state laws.
- The state treats all investors from different economic sectors, both local and foreign investors, on an equal legal basis; it encourages and creates favourable conditions for investment operations.
- The state admits and reserves rights on asset ownership, investment capital, income and other legal rights and interests of the investor; it recognizes the existence and long-term development of the investments.
- The state is committed to the international investment conventions to which Viet Nam is a signatory (member).

The 2004 Forest Protection and Development Law also identifies investment policy in forestry. Some of the specific details are:

- The state issues investment policy on forest protection and development that is in line and consistent with other socio-economic policies with preference for investment in infrastructure, human resources, fixed settlement and cultivation, and stable and improved livelihoods of rural and mountain-dwelling people.
- The state invests in forest protection, development for special-use, protection and seedling forests; protects and develops rare, precious and endangered species; studies and adapts scientific and technological outputs and provides training for human resources on forest protection and development; develops advanced forest management systems, forest inventory and statistics compilation and monitors forest resource development; establishes specialized forces for forest fire prevention and fighting; and invests in facilities, techniques and other tools and equipment to support prevention and fighting of both forest fires and insect attacks.
- The state has policies for encouraging protection and enrichment of degraded natural forests, production forests providing large, rare wood and exotic species; supporting infrastructure construction in areas providing raw material supply; and promoting forestry extension and support for disadvantaged people to develop forests, production, processing and forest product utilization.
- The state encourages organizations, households and individuals to accept barren lands and denuded hills for forest development purposes; gives priority to plantation forests supplying materials to economic sectors; expands forest and land contract types for afforestation purposes; offers preferential tax and tax exemption for those working in forestry activities; and issues policies applicable to credit agencies that provide investment funds with preferential interest for afforestation purposes.
- The state has issued a policy on developing markets for forest products, encouraging organizations, households and individuals in all economic sectors to invest in processing industries and in trade villages engaged in processing forest products.
- The state encourages the provision of insurance for plantation forests and other production activities.

### Investment support

In the context of support for technology transfer:

- The state creates favourable conditions and secures the rights and legal interests of parties involved in technology transfer, including contributing capital through technologies, in order to implement investment projects in Viet Nam under state laws on intellectual property and laws on technology transfer.
- The state encourages the transfer of advanced technologies and technologies to Viet Nam regarding manufacture of new products, improved production capacity, competitiveness, product quality, cost and energy effectiveness.

In the context of support for training:

- The state encourages the establishment of funds, with contributions from counterpart funds and donations from local and foreign organizations and individuals, for training human resources.
- Training costs paid from the enterprise's budget are eligible costs in calculating the taxable income of the enterprise.
- The state uses the state budget to upgrade enterprises' human resources through training programmes.

In the context of support and encouraging investment in service development: The state encourages and supports organizations and individuals to provide investment support services in the following cases:

- Investment and management consultation services.
- Consultation on intellectual property, technology transfer.
- Vocational, technical and management training.
- Providing information on market, scientific and technological information, and socio-economic information requested by investors.
- Marketing and trade promotion.
- Establishing and participating in civil society associations, socio-vocational organizations.
- Establishing centres for design and experimentation to support the development of small and medium enterprises.

In the context of investment in infrastructure for industrial zones, processing zones, high technology and economic zones:

- Support to invest in socio-technological infrastructure outside industrial, processing, high technology and economic zones.
- For localities facing difficult socio-economic conditions and those with particular disadvantages, the state partly provides capital for these localities, apart from the investor, for infrastructure development within the boundaries of the industrial and processing zones.
- The state spends investment funds from the state budget and offers preferential credit to invest in socio-technical infrastructure development within the boundaries of high technology and economic zones.

In the context of visa processing: Foreign investors, experts and skilled workers working regularly with investment projects and their family members are issued renewable visas according to their needs.

### Preferential investment

Decree No. 108/2006/ND-CP, issued on 22 September 2006 specifies provisions and guidelines for enforcing Investment Law provisions. It specifies that investors operating investment projects, including expansion of existing projects, under the framework of preferential fields and localities, are offered:

- Preferential income tax rates, as specified by the state laws on enterprise income tax:
  - For respective fields and localities, investors may receive preferential income tax rates with three levels: 10, 15 or 20 percent applicable to periods, respectively, of 9, 12 or 15 years, or for the whole project duration. (The regular income tax rate applied to enterprises is 28 percent.)
- Tax exemption is applicable to enterprises for a maximum of four years, with the reduced rate of 50 percent for a maximum of the following nine years (applicable to projects under preferential treatment and those operating in high technology zones).
- Preferential import taxes are applicable to goods imported in accordance with the import-export laws. Import tax exemption is applicable to goods imported to establish fixed assets (machinery, specialized transportation facilities and materials that cannot be manufactured locally) and materials under specified circumstances.
- Tax exemption and reduction are applicable to land-use taxes, land-use costs, land rent and water surface taxes, in accordance with the state laws and regulations on land and taxation.

### Investment procedures

Decree No. 108/2006/ND-CP specifies that the investment licence issuing authorities, the agencies receiving investment project dossiers and investment procedures are decentralized to the Provincial Peoples' Committees (PPCs) and management boards of industrial zones, processing zones, high technology and economic zones, in terms of review for issuance of investment licences for investors in general, and forestry investment projects in particular. Decree 108/2006/ND-CP specifies investment registration procedures applicable to projects valued under US\$17 647 000 and projects that are not listed under the conditional investment fields; procedures on verifying investment licence issuance applicable to projects valued at US\$17 647 000 and above; and projects listed under the conditional investment fields.

### Land laws

Land policies are specified in the 2003 Land Law and other guiding documents, including: Decree No. 181/2004/ND-CP dated 29 October 2004 on the implementation of the Land Law; Decree No. 182/2004/ND-CP dated 29 October 2004 on dealing with land-related violations; Decree No. 198/2004/ND-CP dated 3 December 2004 on collecting land-use fees; Decree No. 197/2004/ND-CP dated 3 December 2004 on compensation and support for resettlement once lands are reclaimed by the state; Decree No. 17/2006/ND-CP dated 17 January 2006 on the

revision and supplement of some provisions of the decree guiding implementation of the Land Law; and Decree No. 187/2004/ND-CP on transforming from a state company into a joint stock company..

The procedures for land allocation, land lease and issuance of land-use certificates, including land for forestry development purposes, are specified in the 2003 Land Law and Decree No. 181/2004/ND-CP. The Investment Law also states that the investor has the right to be treated equally in terms of accessing and using credit, land and resources in accordance with state laws and regulations.

### ***Policy on timber harvesting and forest product transportation***

Decision No. 40/2005/QD-BNN dated 7 July 2005, issued by MARD, specifies the regulations on harvesting timber and other forest products. With respect to this decision, organizations, enterprises or individuals that have invested in plantation forests are free to decide upon the harvesting period and harvest volume, and harvested products may be freely transported. For cases in which the plantation forest was developed through investments financed by state loans or guaranteed by the state, and for natural forest, the harvesting must be licensed by the appropriate authority. The harvesting licence application process is complex and this contributes significantly to increasing the production costs of the sector.

### ***Competitive advantages of the forestry industry vis-à-vis new markets***

Investments in forestry and wood production in the future should focus on products that Viet Nam could produce with high competitive prices in new markets. Traditionally, free trade provided advantages to Viet Nam via market access within the Asia-Pacific Economic Cooperation (APEC) framework and agreements for most favoured nation status within the framework of the European Union. Free trade in the future will facilitate greater market access for Viet Nam, providing new opportunities for forest products. On the other hand, free trade will also create stronger competition for the forest industry of Viet Nam, particularly wood-based panel and paper products. The production cost per unit must be reduced to 30 percent in the biggest paper factory (Bai Bang) and more than 30 percent in smaller factories to compensate for the reduction in import tariffs that until recently have protected the paper industry. This is a major challenge that inefficient factories are facing as import tariffs are to be reduced on all products across the forestry sector.

The main obstacle to the expansion of wood products and other refined forest product exports is the shortage of raw materials. The increased price of imported wood and higher salaries may affect the current competitiveness of the Vietnamese wood product industry that offers:

- A low industrial wage structure and a diligent workforce.
- Competitive production costs: the wood-processing sector is labour-intensive, so production costs are highly competitive.
- Good value: service, product quality and competitive prices compared to equivalent products from other Asian countries.
- Expanding and diverse markets: accession to the World Trade Organization (WTO) and free-trade agreements that extend export markets; economic growth fuelling domestic demand.

- Access and infrastructure: nine sea ports provide access to international shipping lines and facilitate export of wood products and import of raw materials and equipment.

### *Land availability*

The forest land structure has changed in accordance with the National Forestry Development Strategy (2006-2020) (Table 6). The area of production forest has increased from 5.43 million hectares in 2005 to 8.4 million hectares in 2010. The objectives of the forestry sector are:

- To stabilize the area of protection and special-use forest areas and to promote production forest to address the basic issues in the sector such as job creation and income generation, development of forest based on intensive cultivation and agroforestry techniques and promotion of ecotourism and other environmental services.
- To establish a stable 6.58 million hectares of production forest focusing on a concentrated regional supply of materials and sustainable forest-use management with multiple objectives. The remaining 1.82 million hectares are to be used for forest rehabilitation and agroforestry.
- To promote afforestation via intensive cultivation techniques to meet the needs of the wood-processing and furniture industry, generate multipurpose and non-timber species plantations and supply high quality seed stock to increase forest plantation productivity.

**Table 6. Structure of forest and forestry land up to 2020 (million hectares)**

Status in 2005		Planned orientations		
Categories	2005	Categories	2010	2020
<b>Total forest land area</b>	<b>14.67</b>	<b>Total forest land area planned for forestry development of Viet Nam</b>	<b>16.24</b>	<b>16.24</b>
Forested land	12.28	Forested land	14.12	14.42
Unforested land	2.39	Plantations	0.30	0
		Land for forest rehabilitation and agroforestry	1.82	1.82
<b>a. Protection forest</b>	<b>7.17</b>	<b>a. Protection forest</b>	<b>5.68</b>	<b>5.68</b>
Forested land	5.86	Forested land	5.68	5.68
Unforested land	1.31	Unforested land	0	0
<b>b. Special-use forest</b>	<b>2.07</b>	<b>b. Special-use forest</b>	<b>2.16</b>	<b>2.16</b>
Forested land	1.92	Forested land	2.16	2.16
		Bare land for afforestation	0	0
Unforested land	0.15	Unforested land	0	0
<b>c. Production forest</b>	<b>5.43</b>	<b>c. Production forest</b>	<b>8.40</b>	<b>8.40</b>
Forested land	4.50	Forested land	6.28	6.58
Natural forest	3.26	Natural forest	3.63	3.63
Plantation forest	1.24	Plantation forest	2.65	2.95
Unforested land	0.93	Land for plantation	0.30	0
		Land for forest rehabilitation and agroforestry	1.82	1.82
<b>% of forested land</b>	<b>37.4</b>		<b>42.6%</b>	<b>43.5%</b>
<b>% of forest coverage</b>	<b>36.7</b>		<b>40.8%</b>	<b>43.5%</b>

Source: MARD (2007a).

**Forest land area structure**

The current production forest area under various management groups is shown in Table 7. As the majority of production forest is managed by households/individuals and economic organizations, it is clear that increasing the effectiveness of forest management and use by these groups is critical to the forestry sector. Policy and investment incentives for these stakeholders are priorities in the forestry sector. These stakeholders have crucial roles in forestry production.

**Table 7. Production forest area and other uses**

Managers	Total production (ha)	Unforested land area	Land area forest regeneration	Forest land		
				Total	Natural forest	Plantation forest
Total forest area (ha)	4 567 216	528 443	260 258	3 778 515	2 591 784	1 186 731
Households, individuals	1 808 005	309 186	172 058	1 326 761	641 507	685 254
Economic organizations	2 050 167	155 171	51 846	1 843 150	1 447 754	395 396
Joint-venture organizations	475		310	165		165
Communities	9 834	833	2 963	6 038	5 504	534
PPCs	173 734	8 918	11 035	153 781	135 682	18 099
Other organizations	515 013	53 211	22 044	439 758	361 272	78 486

Investment in the forestry sector due to land availability is considered to be an attractive proposition, especially with regard to the launching of land and forest allocation programmes by the government since 1994. These programmes allocate forest and forest land to households for long-term periods with perks such as mortgage assistance, transfer and inheritance rights, making almost all households with allocated land and forest the rightful owners of their property.

Allocation of forest and forest land to organizations, households and individuals is determined in the Land Law, 2003 and Forest Protection and Development Law, 2004; it is clearly explained in Decree No. 02/CP issued in 1994. Since 1994, forest land has been allocated over a wide area in accordance with the aforesaid decree and Decree No. 163/1999/ND-CP and Decree No. 181/2003/ND-CP on enforcement of the Land Law, 2003. According to these statutes, households and individuals are allocated forest land with a maximum area of 30 hectares for 50 years. If more than 30 hectares is needed, households and individuals can lease at the rate of 0.5 percent of the land-use rights price from PPCs following Decree No. 188/2004/ND-CP. The duration may be extended if households are in need of more land.

The Forest Protection and Development Law, 2004 addresses adjustments of relationships to forests as assets on land. The government allocates production forests as natural forests and plantations to households and does not collect forest-use fees.

According to report No. 93/BC-CP issued by the government on 19 October 2007, by 30 September 2007, the allocated forest land area was 13 075 604 hectares. The area with land-use rights issued to households, individuals and organizations was 8 116 154 hectares, of which 3 169 084 hectares belonged to households and individuals (Table 8).

**Table 8. Land-use rights issued up to 30 September 2007**

Regions	Total area in need of certificate issuance	Use rights issued No. of certificates	Area		Organizations*		To	
			Ha	%	No. certificates	Area ha	Households, individuals	
							No. certificates	Area ha
Whole country	13 075 604	1 111 302	8 116 154	62.1	5 518	4 947 070	1 104 109	3 169 084
North	4 600 310	590 768	3 349 743	72.8	3 201	1 215 751	587 567	2 133 992
mountainous								
Northeast	115 973	8 502	17 741	15.3	53	4 016	8 449	13 725
Northern central	2 222 539	223 499	1 541 648	69.4	585	890 512	222 914	651 136
Southern central	1 838 158	191 272	1 085 887	59.1	564	862 821	190 708	223 066
Highlands	3 319 823	61 722	1 550 138	46.7	922	1 496 723	60 800	53 415
Southeast	613 142	2 862	313 700	51.2	63	307 425	1 124	6 275
Southwest	365 659	30 826	253 034	69.2	130	169 822	30 696	83 212

\*Organizations: forestry companies, state-run forestry enterprises, schools, the military.

Land-use rights certificates are very important for households and landowners. With them, landowners can acquire mortgages or use them as collateral for borrowing money from banks to invest in forest production. Table 8 shows that the northern mountainous provinces, the northern central region and the south central region have higher percentages of allocated forest land areas, but the percentage for highland areas is lower due largely to slow implementation of certificate issue by local authorities.

According to data from the Department of Forestry, by 31 December 2007, 10 006 village communities (mainly belonging to ethnic minorities) were managing and using 2 792 946.3 hectares of forest and barren land for developing forest. Of this area, about 1 916 169.2 hectares were forest land and 876 771 hectares were barren land or denuded hills occupying about 17.2 percent of the planned national forestry area (16.24 million hectares) or 15 percent of Viet Nam's total forest area. Community use and management was disaggregated into:

- Areas allocated to communities by legal government authorities (with land-use rights certificates): 1 643 251 hectares.
- Areas under traditional community use but not allocated by the government: 247 029 hectares.
- Areas under contracts with forest owners (state agencies or enterprises): 902 662 hectares.
- In the northern central provinces, each household spends on average 50.4 labour days/year on tree planting, protection and NWFP harvesting (Table 9).

**Table 9. Labour days on allocated forest and forest land**

Areas	Labour days	
	Labour day/household/year	Labour day/hectares/year
Mountainous areas	27	0.6
Mid-elevation areas	52.3	3
Coastal plain areas	72.3	17.2
Average for 6 provinces	50.4	2.2

Source: Nguyen Van Son (2008).

As a result, forest cover in these provinces has increased considerably (Table 10).

**Table 10. Forest cover after allocating forest and forest land for six northern central provinces**

Areas	Type of land	At allocation point (%)	After 10 years (%)
Mountainous areas	Forested	60.9	81
	Unforested	39.1	19
Mid-elevation areas	Forested	35.6	89.1
	Unforested	64.4	10.9
Coastal hill areas	Forested	75.8	100
	Unforested	24.2	0
Average for 6 provinces	Forested	57.43	88.8
	Unforested	42.0	11.2

Source: Nguyen Van Son (2008).

For income generation, consolidated data for the whole country are not available, but the research in six northern central provinces has confirmed that on average after ten years, the contribution from allocated land and forests has increased household income by approximately 15-20 percent. The data also indicated the contribution of various sectors to household income after ten years of forest and forest land allocation for the six north central provinces; forestry contributed 22.6 percent, whereas agriculture contributed 43.7 percent, services 8.5 percent and others 25.2 percent (Nguyen Van Son 2008).

To promote continuation of the forest land allocation programme, the Ministry of Agriculture and Rural Development (MARD) has evolved a forest land and forest allocation project for 2007 to 2020 according to Decision No 2740/BNN-KL. As such, by 2010, Viet Nam will have completed allocation and leasing of 12.6 million hectares of forest and forest land to different economic sectors for forest protection and development.

From this analysis of the current status of forest land and implementation of the National Forestry Development Strategy for 2006-2020, it is clear that land for forest production is still abundant, available and ready for investment.

### ***Current status of the labour force nationwide and in the forestry sector***

According to the results of an evaluation ([www.Xaluan.com](http://www.Xaluan.com)) by The Japanese Enhance Trade Organization (JETRO) on the business environment in Viet Nam, the country is the best site for production and attracting investment from Japan in Asia. The report confirmed that Japanese producers in Viet Nam were confident about business prospects in 2008. The evaluation revealed that 77.8 percent of Japanese production companies in Viet Nam reported profitability; 92.6 percent of Japanese production companies had plans to increase investments and diversify products in Viet Nam in the next one to two years. Part of the reason for this attractiveness is that Viet Nam has the most competitive labour costs in Asia.

### ***Current status of human resources in the forestry sector***

Currently there are about 91 000 people with forestry skills working in the agriculture and rural development industry, primarily at government levels (ministries, provinces, districts), in forest management and protection boards and forest law execution agencies, non-profit organizations (institutes, universities, national parks, protected areas) and in 400 forestry enterprises. About 23 000 persons have university degrees, 28 000 persons have technical diplomas and there are about 40 000 technical workers (DOF MARD 2007). These people work in three blocks: state management, non-profit organizations and production.

According to the Reform of Forestry Administration System project run by MARD, the current status of human resources in the forestry sector is as follows:

- Approximately 70 000 persons (excluding forest rangers) work in forestry; this is considered sufficient to carry out required tasks. However, there is a major deficit in forestry skills at district and commune levels.
- About 250 000 persons are estimated to work in wood processing; they are mainly concentrated in wood-processing areas like Binh Duong and central provinces. With the boom in wood processing in the last few years, the labour force in this industry has increased dramatically.
- In general, the cost of labour in Viet Nam is lower than in other countries in the region, and skilled labour is widely available. However, it is clear that this competitive advantage is declining because the minimum wage is rising and Viet Nam is becoming a medium income country.
- The quality and quantity of workers in the wood-processing industry do not meet the requirements of the sector. Currently, there is a shortage of professional skills such as in machinery operation.

### ***Tax policy in the forestry sector***

#### ***Land tax***

The tax rate is 2 percent of the value of land-use rights transactions. The price of land-use rights is adjusted from the market and is not lower than the price determined by authorized agencies.

According to the Tax Law, 1994 (revised in 1999) on transfer of land-use rights, many priorities are given to forestry land. Items 3 and 4 of provision 14 in the Land Law state that:

- Transfer of land-use rights in remote, rural mountainous and island communes is determined by the government.
- Transfer of agricultural, forestry, aquaculture and salt production land is allowed to meet practical cultivation situations.
- Organizations receiving allocated forest land without paying land-use fees or paying land-use fees from the state budget, cannot sell their land-use rights.
- Economic organizations, households and individuals with leased land can carry out leased land-use rights concession; receivers of leased land-use rights are to have a rental contract stating paid amounts up to the termination of the land rent.

- Besides the land-use rights concession fee, the government determines a transaction fee of 1 percent of the land-use rights price.

#### *Tax on natural resource use (Decree #164/2003/ND-CP, 2003)*

Sales tax does not apply to timber products legally harvested from plantations and non-timber products from natural forests.

The tax rates on exploitation of natural resources from natural forests are:

First class timber	40 percent
Second class timber	35 percent
Third and fourth class timber	25 percent
Fifth, sixth, seventh and eighth class timber	15 percent
Medicinal herbs	5 to 15 percent
Aloe wood, Codonopsis	25 percent
Other products	5 to 20 percent

#### *Import tax (Law on Import and Export, 2005)*

For enterprises investing in forest product processing (except timber) that use local materials and export over 50 percent of their products, import tax is exempted to encourage reinvestment in equipment.

Legally imported plant varieties and animal breeds to implement forestry projects are tax-free. The import tax rate in accordance with the Common Effective Preferential Tariff/ASEAN Free Trade Area (CEPT/AFTA) agreement for 2006-2013 is zero for timber, timber products and charcoal, but 5 percent for chip boards, panels and interior furniture (Circular #128/2003/TT-BTC, 2003).

#### *Business income tax*

At present, the government is prioritizing business income tax for enterprises investing in forestry as follows:

- Enterprises investing in forest plantation, regenerated forest protection, forest product processing; services to forestry production (Category A) have a business income tax rate of 20 percent over ten years (Law on Import and Export, 2005).
- Enterprises operating in areas with poor socio-economic conditions (Category B) have a business income tax rate of 15 percent over 12 years counted from the beginning of the project; they are free of tax for three years counted from the taxing point and obtain a reduction of 50 percent of the tax rate for the next seven years (Law on Import and Export, 2005).
- If enterprises employ many workers of whom minorities occupy over 30 percent of the work force then the tax rate is reduced by 50 percent over nine years (Law on Import and Export, 2005).

When the special duration is over, these enterprises have to pay business income tax similar to others at 28 percent.

### **Import tariffs**

Import tariffs on many products have declined but this mechanism will continue to be applied. Table 12 gives an approximate indication of different tax sources from 2001 to 2004.

**Table 11. Total approximate amount of different tax sources (US\$ million)**

Year	2001	2002	2003	2004
From timber	15	15	12	9
From export and import taxes on non-timber products	70	78	98	124
Total	85	93	110	133

Source: Le Trong Hung (2006a).

In the process of integrating with the world economy, the government is committed to providing the best conditions for investors. This evidenced by the following legislative items:

1. The Law on Enterprises, 2005 affirms the long duration and development of all types of enterprises. Rights related to asset ownership, investment capital and income are reserved by this law. Investors can find very clear and specific steps for enterprise establishment and other regulations that create convenient conditions for investment.
2. The Investment Law, 2006 declares that the state treats all investors, local or foreign, on an equal legal basis and creates favourable conditions for investment operations.

For the forestry sector, the government ensures investment in infrastructure, human resource development and fixed settlement that make investment in this sector more efficient and attractive.

Investment policies include support for technology transfer and training as well as support and encouragement for investment service development, investment in infrastructure for industrial zones, processing zones, high technology and economic zones and visa processing. This support system is essential for attracting foreign investors.

3. The Land Law, 2003 and other guiding documents. With the Land Law's approval in 2003 by the Vietnam Assembly, landowners have more rights that can make investors access land more easily. In the forestry sector, more land and forests have been allocated to organizations, households and individuals. Procedures for this land allocation are specified in this law. Another important factor is the issuance of land-use certificates. This makes landowners more confident in investing in forestry operations.

By joining the WTO, Viet Nam has committed to its regulations, making production more stable – another inducement for investors.

With approval of the Strategy of Forestry Development (2006-2020) in early 2007, the forestry sector has determined a roadmap for development. More land will be available for production, protection and special-use forests. The strategy also specifies opportunities for investment.

## **Constraints and challenges to private investment in the forestry sector**

### ***Policy aspects***

Forestry development policies (related to investment) have contributed to the development of the sector in recent years, particularly to increased forest cover. Wood and other forest product-processing industries have evolved well to respond gradually to domestic and export demands. Forestry production activities have been changing dramatically, from state-owned forests under central planning to social forestry with the involvement of various economic sectors operating under a market economy.

Enforcement of the current forest development policies over the past few years, however, has revealed the following limitations:

- In the period of transfer to the market economy, forest management policy is still inappropriate insofar as the state directly manages 72 percent of the total area while local people and other economic sectors only manage 28 percent.
- The accessibility of land resources for forestry development by economic entities, particularly the private sector, is facing difficulties because most of the forest land area (more than 4 million hectares) is legally managed by state forest enterprises (SFEs) whose financial and production capacities are limited. Forest and land allocation to local people and other economic entities has been progressing slowly and guidelines and procedures for this process have to be improved.
- The implementation of loan and credit policies for investment in afforestation is still limited. In the last few years, the state has issued a number of policies offering preferential loans for afforestation. However, only a limited amount of funding for loans is available annually and only state-owned enterprises are able to access such funding sources. Moreover, as Viet Nam is entering a market economy, the regulatory function of SFEs will be reduced but they will still play an important role. Consequently, funds available for afforestation will come from more diverse sources (i.e., the private sector).

### ***Land issues***

There has been concern about the process for foreign and domestic investment in plantations. It is not clear to potential investors how this takes place and how an investor proceeds with investing. MARD encourages investment in plantations but provincial authorities need to be consulted regarding provincial regulations and land availability and also the willingness of landowners to cooperate. Land availability is important for investors.

According to the Ministry of Planning and Investment (MPI) if the capital investment is less than (US\$882 353) then MPI endorsement is not required, but if investment exceeds this amount official endorsement of the investment is required.

The main constraint faced by companies and other stakeholders is accessibility to land for plantations and processing operations. The PPCs have agreed to assist but it is difficult to secure unallocated land. Even though a company has government support and access to capital, access to land remains a problem. According to the Ministry of Natural Resources and Environment, it is difficult to gain access to land from farmers. Increasing access to land for plantation development at the expense of farmers will impoverish them further. Government procedures work well and are supportive of investment; however, implementation of the processes in the provinces does not always run so smoothly. Things may be done differently in the provinces despite the clarity of government policies. Furthermore, there are differences across provinces in terms of application of regulations and policies. This creates uncertainty for investors and increases transaction costs for investors. If the barriers seem too high from the outset then the investor will look for alternatives.

Access to land and land tenure systems. Many smallholder plots challenge the development of large-scale plantations. Investors will need access to land/forest resources of appropriate quality and size to reduce import dependency and to 'grow' the industry. In some cases, the investors have not been granted land-use rights.

It is difficult to get information on available land for plantation investment and development at national or provincial levels, which is a barrier to investment. However, the Department of Land Administration holds information on land and provincial land-use planning. Furthermore, each province is responsible for land-use planning. Each investor should consider this when making investment decisions.

The government has policies to support private sector development in the forestry sector. In some cases the real situation (in terms of implementation of these policies) at the provincial level differs from the policy statements of the central government.

Much of the potentially available forest land is under the control of SFEs. In many cases land and forest resources are not being managed as effectively and efficiently as they could be.

Land fragmentation in forestry production means that each household cultivates on two or more separate areas or on small plots. This is a major constraint for plantation investors.

The reasons for land fragmentation include:

- Complex terrain (the most important reason).
- Land area funding is limited for allocation programmes; meanwhile the large number of households leads to the division of sizeable land areas into small plots so that every household can have a plot.
- People in rural areas often are accustomed to subsistence production; therefore, they tend to stay on their land plots even if they are small. Commercial production does not occur to them.
- Forestry production does not generate benefits for local people, therefore they do not pay much attention to efforts and investment in enlarging their land. These people are satisfied with the allocated land area.

Disadvantages of land fragmentation in forestry production:

- Limited mechanization in production leads to high costs in general. Le Trong Hung (2008b) reported that in 450 households in nine communes, no one used machinery for forestry production. The reasons being lack of financial resources, unsuitable terrain and the small area of the land plots.
- Land fragmentation leads to difficulties in management of communes and districts. Selling and buying of land-use rights is sometimes done illicitly.
- High costs of forestry production lead to low levels of competitiveness for forest products.
- Cooperation among households with regard to production is generally informal.

### *Violation of forest protection law and land conflicts*

There is a need for protection of production forest – illegal logging is widespread but companies feel they do not have the means to stop such activities and ensure compliance with the law. The number of violation cases is still high (on average 37 073 cases/year) focusing on boundary and land conflicts (MARD 2007d).

### *Raw material supply*

The domestic supplies of wood will be lower in the coming years. Domestic and imported wood prices have increased by up to 20 percent during the last five years.

Although there are currently 1.2 million hectares of plantation forests for production, Viet Nam still lacks sufficient forests to provide industrial raw materials. Forests are located far from markets and factories and forest productivity is not high.

Importing large timber is becoming more difficult. The export of wooden products is mostly based on the sources of imported wood materials. This is therefore a major challenge. Dependency on imported wood materials is likely to hamper the growth and profitability of the processing sector and erode comparative advantage over time.

### **Competitiveness and market issues**

Formerly, the protection tariff was 40 percent, which was then reduced to 0 to 5 percent within the framework of the ASEAN Free Trade Agreement (AFTA) after joining the WTO. The commercialization of the production sector increases competitiveness and consequently only efficient and market-managed factories can survive and develop further.

Due to competition from major regional exporters – with the exception of Bai Bang – existing pulp and paper producers will come under extreme pressure from major regional (Chinese, Indonesian and Thai) exporters who can outcompete small mills on price, volume and quality (excluding furniture producers).

The current wood-processing sector is facing slow investments in technologies to improve efficiency. Some outmoded machinery for timber processing is still being imported from the People's Republic of China; some farmers are still using dated technology and practices

for plantation harvesting and management. Although new investments and modernized technologies have been provided, most factories operating in Viet Nam are generally less efficient and competitive than others in the international market.

There is still time for Viet Nam to upgrade administration, business and marketing skills among SFEs and in rural areas (women's participation is notable). Marketing activities have not been facilitated. The quality of sectoral and trade statistics is still low. Potential investors and producers are expecting better market information, in which long-term market forecasts and information on wood supplies and lands are accessible. Wood-processing centres are also in need of market information.

The shortage of wood will lead to decreased productivity of factories and consequently the production cost per unit will therefore be increased (assuming a non-import situation). Factories will have insufficient funds to invest in advanced technologies and improve their production operations. Many domestic factories will be closed and thus sectoral capacity will decline and workers will lose their jobs.

### ***Investment environment issues***

The shortage of investment funds in the private sector is restricting the development of the forest industry, except for wood product production. The local private financing sector is relatively small and paying attention to other sectors with less risk and faster profits. FDI (mainly from Japan, Republic of Korea, China, Singapore, Denmark, Taiwan P.O.C., Norway) and other joint-venture companies working in forest industries is still limited to wooden product production, particle board and pulp. The forest industries can only accelerate their growth rate if investors feel secure, market information is accessible, policy for the wood-processing industry is available and they collaborate to ensure long-term sustainable wood supplies to respond to sectoral demands. A stable macroeconomy, minimized bureaucracy and creating a safe investment environment are key factors to attract foreign investments.

### ***Certification issues***

Only a few companies in Viet Nam are accredited to conduct certification assessments; furthermore, the market for certification services is not fully developed in Viet Nam. Many of the accredited certification companies will not invest in Viet Nam until the market improves but the market will not improve until demand for certification develops. Currently the cost of certification is prohibitive for forestry enterprises. They are not of a size that justifies the expense of becoming certified. It is debatable whether the benefits derived from certification justify the investment required to become certified. The need for skills development in the sector to develop capacity to achieve certification standards is another issue.

### ***SFE equitization issues***

Currently, SFEs manage most natural production forests in Viet Nam. The prime minister has stated that all state-owned enterprises should be equitized by 2010. At present, the schedule for equitization of SFEs is quite clearly designed, so piloting of SFE equitization will commence.

The involvement of private equity companies in the forestry sector is possible but the approach would have to be a whole-of-supply-chain strategy. The focus would be on plantations, wood-processing and transportation aspects of the supply chain rather than just one aspect such as plantations. Indochina Capital (ICC) is investigating this approach in the forestry sector. ICC has worked closely with the Vietnam Rubber Corporation to develop the various parts of the supply chain, including, for example, exploration of value-added industries such as tyre manufacturing. The author (Le Trong Hung) suggested that joint stock companies (JSCs) should be set up to invest in and establish plantations for the forestry sector. There is a need to get farmers involved in JSCs, which apply modern management, harvesting, and processing techniques to improve forest management and to ensure high quality raw materials.

### ***Tax issues***

There are differences across provinces in relation to domestic tax rates and tax exemptions. Potential investors should consult with the Central Tax office as well as the respective province.

### ***Human resource issues***

Training is needed for workers and middle managers to improve productivity and efficiency. Regarding vocational training, low labour costs have quality implications (new employees need basic training). There is a lack of highly qualified professionals, technicians and skilled labour in the wood-working sector.

### ***Investment issues***

Regarding ownership of assets and property, there should be clear rules and regulations about ownership by foreign investors. Information is needed about the ownership of the investment and the controls/restrictions on foreign companies involved in plantation forestry. However, information systems for forest management and investment promotion are not adequate. The government recognizes the need to modernize these systems and has sought funding from the World Bank. There is difficulty in providing investors with information to assist them in making investment decisions.

Loans for farmers who want to invest in the forestry sector are not easy to secure. Domestic loans are devised for state and private enterprises. In response to a question on whether there are preferential loans for farmers, it was indicated that there are two applicable credit organizations with branches in all provinces.

For a summary of the overall investment conditions in Viet Nam (and in comparison to Lao PDR) refer to Appendix 1.

## **Solutions for removing constraints to private investment in the forestry sector**

Integrated solutions are required to solve the key issues mentioned above and creating favourable conditions to carry out key proposed objectives. The paramount issue is to synergistically develop the forest plantation, wood-processing and wood production industries. This can only be done through planning with the wide participation of relevant stakeholders from the private and public sectors who are working on forest plantation, wood production and processing in order to develop a concrete roadmap to implement the long- and short-term objectives set out by the National Forestry Development Strategy. The market will provide more opportunities for the Vietnamese forest industry. The requirements for investment as well as the demand for wood are so great that the strategy must focus on creating favourable conditions, particularly attracting private investment and FDI to develop the sector and creating motivation to develop forest resources more effectively.

### ***Key solutions for removing constraints to private investment in the forestry sector***

#### *Policy solutions*

The government should update policies to support private sector development in the forestry sector such as ensuring a stable economic and forest policy environment; clear, enabling legislation and procedures in general for investing; and reducing bureaucracy to establish and operate businesses in general and in the forestry sector in particular.

- Concretize the National Forestry Strategy, 2006-2020 into practical and specific programmes.
- Facilitate land and forest allocation to organizations, households and individuals, including the development of standard procedures on land and forest allocation to provide guidelines to the local authorities.
- Enhance the role of the market in terms of removing the monopoly on wood commerce and reducing direct government investments in commercial activities of the forest industry; creating more favourable conditions for small ownerships, communities and the private sector in terms of forest plantations.
- Provision of specific guidelines for SFE equitization. This process could provide a substantial basis for private investment in production forest management.
- Strengthen reforms to simplify procedures on business registration, transportation, import and export pertaining to timber, and remove current monopolies on transportation/training.
- Limit the bureaucratic practices regarding the establishment and operation of new enterprises for easier investment execution.
- Provide and enforce policy strong enough to protect plantations without any discrimination on the type of investors.
- The government has to ensure simple, quick and transparent procedures to establish new businesses and obtain licences.

### *Land solutions*

For attracting investment in forest plantation, property rights should be clear. For this purpose, land consolidation and accumulation are important solutions.

- Policy is needed to allow for land consolidation and accumulation for forestry production, similar to that of the agriculture sector.
- A better information system on prices of land-use rights, forest products, customers and legal documents is needed.
- Provision of directions or policies promoting market development or use rights of forest production land.
- Farmers are part of the solution; they should be offered appropriate incentives to encourage their involvement (to maintain and protect the land and the investment).

Strengthening the land allocation programme is also a solution and a condition as well for effective land use. Land allocation must be accelerated and land tenure improved (for example, clearly defined land-use rights) so potential investors have a better understanding of land availability for long-term and sustainable investments in forestry. Support from national and international private entities will allow forest owners to sell their products at equitable prices. For this purpose, the following actions should be taken:

- Updating policies and regulations related to land allocation and forest leasing as well as documents determining responsibilities, tasks and benefits.
- Protection, special-use and production forests should be planned in more detail to clarify areas for investment (production forest area only).
- Strengthen land allocation with regard to socio-economic planning of each commune.
- Provide guidelines on land-use right transactions such as selling, leasing and stakes in joint production.
- State development of information systems on forest product markets and forest production land-use rights.

### *Research-, science- and technology-related solutions*

- In connection with rapid increased demands for production materials, non-timber pulp will continue to play an important role in paper industries. Further studies on the development potential of non-timber pulp production methodologies are required to address the structure, technology and competitiveness of the non-timber pulp industry as well as strengthening capacity to reduce pollution.
- Develop a standards system and issue national certificates (through the accredited laboratory system) to enhance the competitiveness of products.
- Encourage FDI and establish joint-venture companies, which are considered the gateway to technology transfer.
- Enhance studies to apply advanced technologies for forest plantations and the wood-processing industry.
- Respond to the hygiene and technical requirements required by export markets.
- Fund and implement a research programme on tree propagation and establish nurseries within communes to supply investors and farmers with seedlings.

### *Human resource solutions*

- The expansion of the forest industry, improvement of product quality and application of advanced technologies all require qualified workers, technical supervisors and managers. Expand and improve capacity and facilities in forestry, wood-processing vocational training schools and training and education agencies to train workers and technicians.
- Enhance extension services to SFEs and encourage entrepreneurs to develop their businesses, products, processing capacity, quality inspection and marketing approaches.

### *Production and infrastructure solutions*

- Expand the utilization of current resources from plantation forests to address the short-term objective of increasing material for the wood-processing industry by replacing low production forests with high production plantation forests in specific areas.
- Expand the investment in natural forests and establish more plantation forests to support wood product production.
- Mechanisms for mobilization of different stakeholders to invest in transportation improvement in the forestry sector.
- Good infrastructure: deep-sea ports, roads (as planned in the National Forestry Strategy), electricity supply, water and information/communication technologies are important factors for attracting private investment. The state must enhance these requirements.
- For small land areas, plantation companies should provide seeds for local people, sign advanced contracts to buy trees when mature and supply funds needed during the planting period. Support from the government is essential to ensure the agreements are workable.

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## Appendix 1. Benchmarking hardwood fibre costs and investment conditions in Viet Nam and Lao PDR

	Viet Nam	Lao PDR
Macroeconomic conditions	Stable growing economy	Relatively weak despite recent improvements
Overall investment environment	Good. Openness to FDI. Good legal framework. Time to start business 50 days and getting a licence 143 days.	Weak but improving. Just opening to FDI. Limited experience. Time to start business 198 days and getting a licence 208 days.
Market potential	Growing rapidly. Access to China, Japan, etc.	No domestic potential.
Landownership	Legislation improved, but still problems with tenure. Leaseholds allowed.	No private ownership; limited experience with concessions. Unclear policies and legislation
Access to land, security of raw material	No critical mass of plantations. Limited supply of large homogenous areas. High population density.	Some large homogenous areas available. Low population density.
Growing conditions, yield potential	Average; 20-23 m <sup>3</sup> /ha/year	Good, up to 30 m <sup>3</sup> /ha/year
Fibre costs at mill gate	> US\$30/m <sup>3</sup>	< US\$25/m <sup>3</sup>
Infrastructure	Most land in steep, remote areas. Good infrastructure in coastal areas, including ports.	Landlocked country. Weak infrastructure, but improving access to Thailand and Viet Nam.
Labour	Low cost, trained and educated labour.	Low labour costs. Shortage of trained labour
Track record in commercial forestry	Short track record. Limited commercial plantations and private industry.	Short track record. Limited commercial plantations and private industry.

Source: Marko-FI Benchmarking Hardwood Fibre Costs (Pöyry, Indufor), cited in Katila, (2007).

The prospects for attracting increased investments in forestry may never have been higher: society is increasingly acknowledging the multiple benefits and functions of forests; demand for forest products is expanding rapidly; and institutional investors are seeking investment opportunities for the billions of US dollars amassed in their funds. So why isn't more private sector investment being made in forestry in the Asia-Pacific region, especially in developing countries? Why is it that investors continue to favour North America, Australia, New Zealand, Latin America and the European Union in their forestry investment decisions? And why are domestic investors in Asia and the Pacific largely avoiding the forestry sector?

Through a series of nine country case studies and regional analysis, *Growing green assets: Removing constraints to private sector investment in forestry in Asia and the Pacific* presents answers to these questions and provides guidance to policy-makers on approaches and priorities for removing key impediments and streamlining forestry investment in the region.

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