



The Forests Dialogue

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# THE FORESTS DIALOGUE

## Poverty Reduction through Commercial Forestry: What Evidence? What Prospects?

TFD Background Paper  
Prepared by James Mayers, IIED

### Summary

This paper aims to provide a summary review of the evidence on commercial forestry's ability to reduce poverty. It also tries to identify the key risks associated with greater participation of poor groups in commercial forestry and to identify factors, both internal and external to the forest sector, proven to enable commercial forestry to be pro-poor. It has been prepared for a "scoping" dialogue of the same title to be run by The Forests Dialogue (TFD) in Richards Bay, South Africa on 19-21 June 2006, prior to a full dialogue on forests and poverty reduction in development for early 2007.

Poverty is not just a lack of money and jobs, but of assets, services, civil and political rights, voice and the rule of law. Forestry can contribute to all of these – but often it does not. Commercial forestry can help fuel economic development, which can be 'pro-poor' if the conditions are right; and it can increase opportunities for direct contributions to poor people through small, medium or large scale enterprise. It is difficult to identify whether and to what extent national forest income trickles down to help the poor and the impacts of forestry profit reinvestment are equally elusive. Timber is often out of poor people's reach and there is little substantial evidence for poverty reduction from commercial forestry jobs and income. Generally, at best they have avoided exacerbating poverty.

Evidence that commercial forestry can become more pro-poor seems better – there are opportunities to secure basic needs, broaden livelihood opportunities and give the poor the means to influence decision that affect them. External policy and market conditions are critical in defining commercial forestry's impact on poverty. The paper identifies trends in and around the forest sector, and motivations amongst key groups of stakeholders, that can brighten the prospects of pro-poor commercial forestry. It ends by highlighting key challenges that need to be converted into practical actions if commercial forestry is going to reduce poverty to a greater extent.

### 1. What this paper is about

Two main outcomes for poor households seem to be possible from the use of forest resources: poverty avoidance or mitigation – in which forest resources serve as a 'safety net' or fill gaps; and poverty reduction – in which forest resources help lift the household out of poverty by functioning as a source of permanent

increases in income, assets, services, civil and political rights, voice and the rule of law.

Considerable emphasis in analysis and dialogue has rightly been put on the safety net functions of forests in poor peoples' lives – and on what forms of management and control of forest resources are appropriate for this. Much less emphasis has been put on the prospects for pulling people out of poverty – and the attention that has been given has tended to focus on the potential of non-timber forest products (and, more recently to a lesser extent, on environmental services). Put simply, there is a widespread assumption that NTFPs are for the poor and timber is for the rich.

This paper takes a different tack – it tries to identify what we can conclude about poverty reduction through commercial wood production (hereafter for our purposes called 'commercial forestry'). It also tries to identify factors, both internal and external to the forest sector, proven to enable commercial forestry to be pro-poor. It finds little literature that deals directly with the question, but much that helps provide at least part of the answer.

The paper has been prepared for The Forests Dialogue (TFD) which will convene a "scoping" dialogue to begin to explore these issues with an assembled group of experts. The scoping dialogue will be held in Richards Bay, South Africa on 19-21 June 2006. The intent is to identify the key areas for potential collaboration among a diverse group of stakeholders to catalyze progress towards maximizing forestry's potential to reduce poverty and develop truly sustainable pro-poor initiatives. It will bring together representatives from corporations, NGOs, labour and community groups all interested in working toward this common purpose. The scoping session will pave the way for TFD's full Dialogue on Forests and poverty reduction in development for early 2007.

## **2. Forestry affects different aspects of poverty**

### ***Poverty is not just a lack of money and jobs***

Understanding of what constitutes poverty has changed considerably over the last 15 years (even if this understanding has yet to percolate through to the way most governments and international agencies define and measure it). This change moves us on from consideration of poverty as lack of food or income to consideration of the factors that underpin this. Some eight different aspects of poverty can be highlighted (Mitlin and Satterthwaite, 2004):

1. Inadequate and often unstable income (including inability to buy enough food, safe drinking water and medicines)
2. Inadequate, unstable or risky asset base (including a lack of material assets, such as ownership or the right to use land and trees; savings and stores; and non material assets, including literacy, educational attainment, and good relationships within and outside families)
3. Poor housing (including low quality and high insecurity, hazard-level and overcrowding)
4. Inadequate provision of 'public' infrastructure (e.g. piped water, sanitation, drainage, roads and footpaths)
5. Inadequate provision of basic services (e.g. day care, schools, vocational training, healthcare, emergency services, public transport, communications and law enforcement)
6. Limited or no safety net to mitigate risks (notably, to ensure that basic consumption can be maintained when income falls or crops fail)

7. Inadequate protection of rights through the operation of the law (including land and natural resource rights, civil and political rights, occupational health and safety, protection from discrimination and exploitation)
8. Poorer groups' lack of a voice (including powerlessness within political systems, economic institutions and bureaucratic structures).

### ***Major potential, major challenges for pro-poor forestry***

Observing the forestry scene, several issues arise from this expanded definition of poverty:

- The full range of aspects of poverty are important for our examination of the impacts of commercial forestry on poverty since if we expect these impacts to be both local and macro-economic then they are likely to be diverse socially, environmentally and economically.
- Commercial forestry in some shape or form would appear to have the potential to address all of the above aspects of poverty, perhaps better than any other sector.
- Commercial forestry needs to address a range of these aspects of poverty if it is going to be effectively pro-poor. Moving out of poverty is not likely to be a simple matter – not just more income, or a stronger asset base or greater political muscle – but a combination of these things. General contributions to 'the community' or 'welfare' may have merits, but they may do little to actually reduce poverty.

It can also be noted that whilst commercial forestry may strive to attain recognition as 'legal', 'responsible', and even 'sustainable' under various initiatives – this tells us little about whether poverty is being reduced. With luck these designations signal that the 'do no harm' principle is in operation, but they do not guarantee 'doing some good' for poverty. There is no label for 'poverty-reducing timber' (yet).

### **3. Economy-wide effects of commercial forestry on the poor**

#### ***Feeling the benefits of growth***

Economic growth is emphasised in the current prevailing dialogue on development as the most important driver of poverty reduction. However, the role of the forest sector in lifting significant numbers of people out of poverty by contributing to employment generation, trade and economic growth is remarkably poorly analysed, especially in the light of trends in the globalisation of markets and production (Steele and Kragt, 2006). Forestry's role in many economies is certainly significant – it provides 10% or more of GDP for some of the poorest countries, and 5% of GDP for many more developing countries. For all developing countries, the average forestry share in measurable GDP is around 2%, and forestry's share in developing country exports is about 3% (FAO, 2005).

There seems to have been little exploration of whether and to what extent this national forest income trickles down to help the poor (Angelsen and Wunder, 2003). Evidence beyond the forest sector certainly tells us that economic growth rarely translates directly to poverty reduction – the vital extra ingredients are public and private policies that reduce inequalities and improve how income is distributed in a society. Where natural resources like forests are important to poor people, such policies are needed in particular to foster governance that enables poor people to improve their access to, and benefits from, natural resources.

### ***Elusive revenues and reinvestments***

Where governance fails to capture revenues due – because of commonly weak revenue collection systems and widespread abuse of the law – major potential resources for poverty reduction are lost. For example, an estimated 70 percent of Indonesia's timber exports are illegal, costing the country \$3.7 billion a year in lost revenue (WRI, 2005). World prices of forest products have been estimated to be 7-16% lower than true costs because of the externalities and un-captured revenues associated with illegal logging (TFD, 2005a).

Beyond formal forest income and export receipts – what about reinvestment of forestry profits outside the forestry sector, are they eventually creating income and employment for the poor? Even though formal commercial forestry is typically controlled by a small number of wealthy individuals and often foreign-owned companies, not all of their profits are salted away in foreign bank accounts. They are likely to have reinvested a significant share in promising domestic sectors and consumed domestic goods and labour intensive services – with trickle down effects to poor people. Again, the evidence base on this seems elusive (Angelsen and Wunder, 2003).

Many products derived from commercial forestry are contributors to economic development and are consumed by poor people. Some of these products play vital roles in poverty reduction - timber for housing, paper for health care, education and communications (IIED, 1996). Thus commercial forestry's impacts on poor people as consumers is another key area that would benefit from untangling of the chain of cause and effect. Again, current evidence is weak.

### ***Non-commercial forestry often matters more***

Another common problem when deciphering the contribution of commercial forestry to poverty reduction through national economies is the invisibility of links with many other forest values. Typical commercial evaluation of forests tends to undervalue the total array of ecosystems goods and services which includes not just timber and other commercial forest products but a wide variety of other collectibles, agroforestry products as well as services such as maintenance of soil fertility, watershed conservation and carbon. Without the ability to assign a monetary value to ecosystem benefits the assets of the poor are systematically undervalued – as are the benefits of improved investment in those assets (Pearce, 2005; Anderson et al, 2006). Three examples serve to illustrate:

- In Kenya, the formal forest officially generates only about \$2 million in earnings per year from sawn timber, pulp and other industrial wood products (a surprisingly low figure given the substantial pulp mill and ply mills in the country). This is dwarfed by the value of the informal forestry sector, which has been estimated to contribute some \$94 million in value to rural households in the form of charcoal, fuelwood and many other forest products. This does not include the recreational value of forests for leisure and tourism which could come to \$30 million – and is also accrued largely informally (Mogaka, 2006).
- In Lao PDR the formal forest sector contributed 3% of GDP, about \$52.5 million, yet wood fuel is estimated to be worth \$6.5 million per year, while the value of wood for house construction is estimated at \$13 million per year. Here, after rice, forest products dominate daily diets – with over 450 edible species consumed. Very rarely is any reference made to household value of tree products, or to the market values of such products (Emerton, 2005).

- In Tanzania, amongst the 833 villages (approximately 2.22 million people) of Shinyanga region, the value of restored woodlands to rural people's livelihood is \$14 per person per month (or about \$1,200 per household per annum), which is significantly higher than the national average monthly spending per person in rural Tanzania of \$8.50 (Monela et al, 2005).

A recent World Bank review of 17 studies from three continents on the income that forests provide to those who live in or near them showed that income from forests was important at every income level and on every continent. On average, income from forests was 22 percent of total income – the equivalent of \$678 per year (adjusted for purchasing power parity worldwide) – in the households examined. Timber was the source of only 2.3% of this income (Vedeld et al 2004).

#### **4. Direct effects of commercial forestry on the poor**

##### ***Timber is often out of poor people's reach***

There are several main reasons why timber has typically been out of reach of poor people (Angelsen and Wunder, 2003; Belcher 2005; Macqueen and Mayers, 2006):

- The costs of entry are high. There are high economies of scale in roundwood, sawn timber, panel boards and pulp operations. Harvesting, transportation and processing activities are highly mechanised and they require large capital investments that are beyond the capacity of the poor. Whilst such operations can have high productivity and thus the potential to pay higher wages, these wage benefits often fail to reach the poor (see below on employment).
- Ownership and control is not usually in the hands of the poor. Forests throughout the world have generally been claimed by the state, and the rights to exploit those resources have been assigned to large companies. Whilst there is a trend toward devolving rights and responsibilities (White and Martin, 2002), tenure remains insecure or incomplete - typically not including rights over timber. In the absence of tenure, there are examples where local access to the wealth generated from commercial forestry has increased and a greater share has been locally captured – through unionisation and other forms of improved bargaining power. However, the examples showing such benefits to be captured by poor people seem to be the exception rather than the norm.
- Long time horizons are risky. Forest planting has often been considered unattractive to resource-poor managers because the rotation times are too long, and/or because their insecure land rights make long-term, physically immobile investments risky. Institutionalised short-termism and economic discounting norms in governance frameworks have also been blamed here (Macqueen, 2005).
- Large-scale politically-connected operators are drawn to high-value timber. Good quality forests have high economic rents – with a lot of value standing on-the-stump. They are highly coveted, often distributed on a patronage basis for political gains, and used to generate private wealth rather than revenue generation for the Treasury. This is clearly evident in many forest rich countries such as Cambodia, Ghana, Indonesia, Myanmar, Cameroon, Central Africa and Liberia. The timber processing industry is often closely tied to the political elite and benefits from artificially low log prices and subsidised credit (which may then be written off, as in Indonesia).

Governments have thus typically tended to favour a few large-scale operators rather than a large number of small-scale operators in commercial forestry. Additional attractions of large scale for governments are the ease of administration and (in theory) revenue capture through concession payments, taxes and other means.

### ***Benefits and costs of industrial forestry to poor communities***

What then have been the direct gains for poor people from large-scale commercial forestry – given its apparent comparative advantages in efficiency and productivity to deliver more, on a bigger scale?

Apart from the formal obligation to pay royalties and taxes the extent of social responsibility for many forest companies has at best been limited to cash compensation for lost assets, a few jobs and perhaps the construction of a school or a health clinic. However, some industrial forestry operations have made major investments in local community development (Higman et al, 2005; Jenkins and Smith, 1999; TFT and CIB, 2006). Various contractual obligations have been developed – such as the Social Responsibility Agreements tied to concessions in Ghana and the joint ventures between First Nations and forestry companies in Canada (Mayers and Vermeulen, 2002). These and a wide range of corporate social responsibility initiatives have undoubtedly provided some benefits to local communities. Yet many have to date fallen short of expectations in practice, and there is little evidence that they can have sufficient impact across the range of aspects of poverty needed to deliver real poverty-reduction.

Slow progress with 'sustainable' forest management in the tropics, where poverty is rife, certainly seems to support a conclusion that real development benefits for poor communities from industrial logging are the exception rather than the rule. Prevailing standards and definitions of sustainable forest management contain socially benign rather than pro-poor aspirations – nevertheless forestry operations that meet these standards are likely to be the best around. But sustainable forest management in the tropics has a long way to go. ITTO's new analysis estimates that about 3% of tropical forests are sustainably managed – some 36 million hectares out of 1200 million hectares across the tropics (ITTO, 2006). This is up on the figure of less than 1% in a similar analysis carried out almost 20 years ago, but is still a depressingly small total considering the many millions of dollars spent on SFM initiatives and international dialogue.

On a more encouraging note, forestry operations of varying sizes aiming for the benefits of certification through networks, federation and group financing are showing progressive social impacts in poor areas, especially in Central and South America (Gretzinger, 2006). Some also see prospects for the social standards in industrial-scale sustainable forest management leading other sectors in sustainable development. The fact that the major internationally recognised forest certification schemes have integrated the International Labour Organisation's core labour standards is seen as a positive sign that empowerment can be generated by commercial forestry. In some countries, the pull of certification has led large-scale forest enterprises to voluntarily adopt ILO conventions that are yet to feature in national legislation, such as the right to form trade unions (Street, 2006).

As with other high rent natural resources, however, high profits from timber can also promote corruption which can jeopardise the integrity of national institutions, as has occurred in Southeast Asia (Barr, 1998; Ross, 2001). In some cases, high timber profits and other elevated economic rents are also vehicles for violent conflict and civil war – affecting poor people elsewhere (Collier et al, 2003).

Corruption and illegality in forestry is rife, and hurts the poor especially (TFD, 2005b). They are prime causes of the depletion of common pool forest resources on which poor people depend – and undermine all prospects of responsible management by the state, private sector and communities alike. Nationally, research shows that corruption acts as a drag on the economy – a tax on legitimate business. Locally, demands by officials for bribes or other considerations for forest access hit the poor especially and encourage low-income families to themselves engage in illegal logging and forest use.

Recent studies of the links between commercial forestry illegality and local livelihoods paint a fairly grim picture even in some countries where systems for forest management are thought reasonably sound and responsible - see e.g. Danso and Opoku (2005) on Ghana, and Colchester et al (2006) on Bolivia and British Columbia. Whilst some 'illegal logging' may in reality be sound local environmental practice benefiting communities, much illegal logging represents lost local livelihoods. In Indonesia, members of illegal logging gangs, often poor forest-dwellers, receive a mere \$2.20 per m<sup>3</sup> of wood. Timber brokers receive \$160 per m<sup>3</sup>. But Singapore-based exporters of sawn Indonesian hardwood charge \$800 per m<sup>3</sup> to ship to western markets (EIA/Telepak, 2002).

### **Box 1. Alternatives to those big yellow machines**

In Guyana, the pattern of forest allocation is large concessions held by a few large local and foreign investors – they are heavily indebted and, with little attention to value added product marketing (despite legal requirements for value adding production prior to shipping), are shipping out logs. The situation is compounded by poor sawmill conversion efficiencies (averaging less than 40% in volume and grade recovery). Guyana and its people are losing out. The solution would seem to lie in the SMFE sector, which currently has 26% of allocated forested land, pays 50% of the revenues to the Guyana Forest Commission and employs 75% of the people in the sector.

Portable technology is available in Guyana in the form of chainsaws, with or without frame attachments called boardmills, and circular blade or thin kerf bandsaw blade portable mills. Lumber cut by chainsaws show recovery rates of between 30-45%, boardmills 50-55% and portable mills 50-60%. It has been estimated that if all the large concessions and state forest permission concessions were broken up and rebuilt around new portable technology, annual royalties would be nearly \$2 million instead of the current figure of about \$0.6 million and an indebtedness of nearly \$1.5 million. By changing the method of forest harvesting in Guyana it is thus thought possible to more than triple the initial revenues to the state. There would also be substantial gains in employment. Such a system would also greatly increase the value and benefit retention within the source community – between 50-75 of the final sale price would be retained in the source community (Mendes and Macqueen, 2006). Needless to say, a range of entrenched interests will have to be overcome or persuaded to change their ways in order to bring about such a transition – but it does not appear impossible.

### ***Poverty impacts of employment in natural forest-based enterprise***

In the late 1990s it was estimated that the timber industry provided 10 million jobs in developing countries, and that there were about 30-50 million more informal jobs in the wood industry (Poschen, 2001). Employment in timber production generally tends to be less labour intensive than agriculture – thus forestry's employment creation and general success has been greatest where agricultural potential is lower (Angelsen and Wunder, 2003; TFD, 2006). Scales of commercial forestry have very different costs of job-creation. A Typical Chilean lumber mill creates one job for every US\$1.3 million invested, while the Nuevo San Juan community forest enterprise in Mexico creates a new job for only US\$12,000 (Jaffee, 1997 cited in Scherr et al, 2004).

There has been little research on the poverty profile of forestry employment. For example, in the above cases, which jobs pay better? Which job has more stability? Which job is safer to do? Larger firms tend to pay their workers higher salaries than small-medium enterprises – some 35% more in developed countries and as much as 50% more in developing countries is one estimate of the differential across a range of sectors (Biggs, 2002). This pattern has also been found in the Brazilian timber industry (May et al. 2003). Some small-medium forest enterprises certainly constitute terrible examples of gender discrimination and labour conditions, particularly where the local sense of community and corresponding accountability have been eroded through rapid social change (Macqueen and Mayers, 2006).

Formal employment may offer greater social protections and prospects of benefiting from organisation than informal employment in the SMFE sector. According to a study of informal wood and forestry workers being conducted by the Builders and Woodworkers International, a majority of workers engaged in informal wood and forestry work acknowledge that they have no other options, and almost two-thirds of those surveyed responded that they would accept formal work if it was available (Street, 2006).

In logging operations, migrant labourers in work gangs from other regions are often employed rather than local people. It can be a highly dangerous undertaking: "Forestry in general and logging in particular continue to be among the three most dangerous occupations in almost all countries" (Blombäck and Poschen, 2003). The situation in the tropics is especially serious. According to the ILO, logging fatalities in Sarawak, Malaysia – the one tropical country for which reliable data are available (occupational health and safety records are not kept by most governments, let alone monitored and acted upon) – was between 3 and 40 times the level in developed countries, and 17 times the level of the USA.

There is strong evidence that industrial-scale logging operations in tropical forests are closely linked to the spread of a range of important, often fatal diseases, especially malaria and HIV-AIDS. In addition, there are good reasons to fear that further new diseases will emerge from forest areas undergoing modification, both because of environmental change as well as the proximity of larger numbers of humans to disease vectors (Counsell, 2006).

### ***Plantation forestry jobs and poverty***

Forest plantations often generate high employment during tree establishment and harvest, with little in between. Where plantations replace degraded or unused land, or where alternative agricultural employment is low, or where rotation cycles require continuous replanting, maintenance and harvesting – there may be high employment benefits. In Chile, half a million people now depend on forestry activities largely stemming from plantations – and that is a higher number of jobs on a per hectare basis than traditional activities on those areas (Morales, 2005).

The number of jobs created by plantations seems to be in the order of 1 to 3 per 100 ha of plantation (Cossalter and Pye-Smith, 2003). However, these jobs may displace other jobs from the land. They are also concentrated - where processing facilities are located. Plantation industries have often been charged with perpetuating low-wage labour and poor conditions of employment, and some communities have been locked into dependency.

Where governments once owned plantation assets, they have generally sold or corporatised them. There are cases where this has worked to the benefit of the poor when power is transferred to people

who manage plantations fairly and efficiently. In other cases plantation transfers have concentrated power and privilege amongst elite groups and caused conflicts with land use by poor rural people. Increasing mechanisation leading to job-shedding is the norm in the plantation industry and can have major social costs (Garforth and Mayers, 2005).

The plantation industry is no exception to the global business trend to outsource all but company core business. Over the last fifteen years in South Africa, for example, the industry has outsourced the majority of its operations to contractors – resulting in some 300 forestry contractors employing more than 35,000 workers countrywide. A recent study noted that a 60-70% decrease in wages accompanied this shift to outsourcing, later somewhat improved by installation of minimum wage legislation (Clarke and Isaacs, 2005). It found insecure and inadequate incomes, no financial safety nets in the form of health insurance or pensions, and workers exposed to risk of permanent injury. Workers are vulnerable to exploitation – having little if any power to influence wages or the conditions under which they work. Under-nutrition and high levels of HIV/AIDS are intimately linked to poverty and vulnerability of workers. Furthermore, the ability of contracting businesses to grow, develop and have multiplier effects for poverty reduction in local economies is seriously constrained by lack of effective business support including affordable credit, and by declining levels of productivity as a result of worker under-nutrition and ill health.

Larger firms contracting out functions and using their market power to drive down costs for smaller contractors is by no means limited to plantation forestry (Poschen, 2001). For example, in Guyana, a large logging company, Barama, have contracted out their forest harvesting operations to competitive extraction teams. With more teams than there is work, it is easy to keep prices so low that contractees have few resources to provide adequate conditions to their workforces (Macqueen, 2001).

### ***Outgrowing and company-community partnerships show promise for poverty reduction***

While the majority of plantation resources remain under corporate ownership, various forms of outgrower schemes are assuming greater importance in plantation expansion in most regions (Mayers and Vermeulen, 2002; WBCSD, 2004). In Brazil, pulp and paper company Klabin works with timber outgrowers in a variety of joint ventures that have generated annual income for farmers ranging from US\$76 to \$217 per hectare. In South Africa, outgrower schemes involve some 12,000 smallholder eucalyptus growers on about 27,000 hectares of land. The two schemes with the largest membership are operated by the country's biggest forestry companies, Sappi and Mondi. The schemes have contributed substantially to household income, providing participating households with an annual income of about US\$ 130 per hectare – averaging about 20% of the income needed to be just over the national 'abject poverty line'.

The South African schemes have been available to even the poorest and most labour deficient of smallholders, because of the credit extended by companies, while non-landowners have benefited in some areas through employment as weeding, tending, harvesting or transport contractors to the landed smallholders. But smallholders have weak bargaining power with respect to the companies and face problems of opaque government policy and uncoordinated service provision from agencies of national and local government. These schemes are yet to take households out of poverty.

Beyond outgrower schemes, an increasingly wide variety of partnership arrangements and joint ventures between commercial forestry companies and smallholders or communities have emerged in recent years, sometimes with government agencies and others also involved. Some of these have great promise but few have a track record long enough to be concertedly assessed for their poverty reduction impacts (Mayers and Vermeulen, 2002).

## ***Organisation of forestry labour for a greater share of the benefits***

Unions and local institutions capable of organising and capturing a greater share of wealth generated by large-scale enterprise are relatively weak in forestry. However, the international union federation Builders and Woodworkers International reports promising initiatives in a range of countries where, because of a mix of market and social pressures, companies are willing to engage. In Malaysia, the federation is organising vendors to the IKEA corporation vendors, and in the Mercosur countries of Latin America it is working to on trade rules to protect social legislation and labour programmes. Particular promise is reported to lie in efforts to connect organisation of workers in the 'fibre chain', i.e. to connect organisation of pulp mill workers with that amongst plantation workers, especially where the corporate ownership is the same (Street, 2006)

## ***New plantation developments could do more for poor people***

Changes in technology and investment patterns are increasingly favouring plantation products over those of natural forests and shorter- over longer-rotation plantation. Acacias, eucalypts and, in some places, short-rotation poplars – now cover about 4.5 M ha in Asia, and 5 M ha in S. America, whilst the older longer-rotation pine plantations in the developing world cover about 1 M ha in Africa, and 3.3 M ha in S. America (Kanowski, 2005). Where plantations are expanding – mostly in Asia and South America – they are doing so in countries with substantial existing plantation resources (Carle, 2003; TFD, 2006).

Several tropical estate crops are now major wood and fibre resources – rubber wood is currently the most important of these, with a global extent of about 10 M ha and annual harvest of c. 6.5 M m<sup>3</sup>; coconut wood has a long history of use, and both coconut and oil palm stems – between them covering about 25 M ha in Asia alone (FAO, 2005) - have potential as fibre resources. These industries all have substantial small-grower and out-grower sectors and could have major poverty-reducing impacts with well-designed schemes. The same applies to tree-based biofuels. However, there are many challenges to overcome given that most investment in plantations is from private capital – favouring fast-growing species and fast returns. Another area with significant potential is payments for carbon sequestration – but only if the institutional guarantees of adequate and stable local returns can be developed (Murdiyarto and Herawati, 2005).

### **Box 2. Successful timber production by poor groups**

- Community forestry enterprises in Mexico. There are few empirical cases where local communities with common properties have used these resources as a vehicle to organize themselves to manage the resource, produce commodities, and process and sell those products into markets. Mexico presents such a case on a large scale, generating increasingly effective poverty alleviation and economic development (Antinori and Bray, 2005; Bray and Tardanico, 2005).
- Farm forestry enterprises for timber have successfully been established in: the states of Karnataka, Uttar Pradesh, Andhra Pradesh, Punjab and Haryana in India; Northwest Frontier Province, Pakistan; eastern Mindanao, Philippines; various locations in Central America; around Mt Kenya, Kericho and the Aberdares in Kenya; various sites in Uganda; KwaZulu Natal, South Africa; (Arce et al, 2005; Mayers, 2005; Saigal et al 2002; Scherr et al, 2004). Smallholder timber production in Bangladesh contributes some 60 percent of the country's total wood supply and meets 70 percent of its fuelwood demand (Vergara, 1997)
- Low impact artisanal logging operations have grown rapidly in Cameroon to meet increasing demand for small-scale timber. In 1998-99 this chain-sawn lumber represented the equivalent of 27 to 36 percent of the amount produced by modern sawmills (Auzel et al, 2001)

**Box 2 continued**

- Small-diameter wood product markets are vital to many poor people. Sale of timber, construction poles and fuelwood is one of the strongest incentives for farmers in western Kenya and eastern Zambia to practice agroforestry (Franzel and Scherr, 2002). In Kolar District of Karnataka State, India, 55 percent of small farmers used tree income for “lumpy” expenditure items, such as house and well construction, and 40 percent used such income for marriages, and providing education. Some 35 to 86 percent of the costs of improving a house and these social investments came from tree income (Scherr et al, 2004).

***Benefits and costs of small-medium forestry enterprises for poverty reduction***

Small-medium forestry enterprises (SMFEs) have variable social impacts – depending on enterprise type and circumstance. Substantial benefits are evident where the employment share in SMFEs has been increased while simultaneously reducing the economic distance between SMFEs and large enterprise technologies and employment standards. Policies that foster a competitive but also vertically mobile SMFE sector are therefore preferable to those that merely protect SMEs – ensuring work conditions in SMFEs rise equitably alongside those in larger enterprise.

SMFEs may represent a positive transition to larger scale. In some cases, the gradual competitive transition from small to large firms - with added wage employment and higher wages - and corresponding exclusion of low-wage SMFEs may be locally welcome. In others, the ingress of large firms may lead to a repatriation of profits elsewhere and a shift in product supply from local to distant markets.

In terms of livelihood security, forest SMFEs are often among the few available sources of income generation in remote areas. For example, in China forestry enterprises are among the main sources of local livelihoods in 496 of the 592 state designated poverty counties on account of mountainous terrain which excludes other economic opportunities. In these counties, the costs of agriculture rise with increasingly sloping terrain and forest activities may offer one of the few routes out of poverty in such situations (Sun and Chen, 2003).

In general, the weight of evidence points to net benefits from SMFEs in terms of reducing the accumulation of wealth and power in the hands of the few; spreading wealth locally; empowering local creativity; and acting to preserve cultural identity and practices. Where SMFEs group together in clusters or associations they can play a further crucial role in articulating the needs of the poor and influencing policy. SMFEs generally have a greater understanding of local political contexts, more links with local civil society and a greater commitment to operating in a specific area than large-scale enterprises. Family-owned companies in particular often exhibit strong ethical and philanthropic approaches (Macqueen and Mayers, 2006).

**Box 3. Pro-poor forestry as an avenue for promoting political change**

Poor groups themselves have at times shown the advantages of organizing around issues in the forest sector to prompt government action, gain rights or call attention to gross inequalities:

- Campesino forestry organizations in Central America, forest user groups in Nepal, people's natural resource management organizations in the Philippines have all done this. In Brazil's Amazon region, rubber tappers joined forces with the indigenous People's Union to form the alliance of Forest peoples in the mid 1980s, demanding greater recognition of their resource rights. By 1995 they had made considerable gains, with government designating some 900,000 ha of rainforest as Extractive Reserves.
- In northern Pakistan, members of the legislative council are increasingly sourced from leadership developed in village organisations with support from the Aga Khan Rural Support programme. Many of these organisations have shown particular development around forest issues. The Pakistan government's first step towards decentralisation of power in northern Pakistan is being undertaken with the help of AKRSP (Bass et al, 2005)

**Box 3 continued**

- The Forest Governance Learning Group in Ghana, which links with a wider initiative of the same name steered by the International Institute for Environment and Development, is focused on forest enterprise for social justice. Its work has helped shape the governance reform agenda in Ghana since 2004. It strengthened the evidence basis of calls for reform – drawing Forestry Commission, ministerial and parliamentary attention to important policy and legislative problems in the sector. For example, FGLG studies established wholesale violation of Ghana's permits regime and huge financial losses to the state and society. This inspired a civil society campaign and a government programme for achieving compliance by June 2006 (Mayers et al, 2005)

However, the SMFE sector is also highly informal, volatile and fragmented. It is commonly stated that about 75% of SMEs fail within the first three years – and this might well be the case in the forest sector. Larger more visible firms, without the capacity to migrate rapidly, might take more care with the environment and maintain their social relationships (Macqueen et al. 2004). Some large scale enterprises can also be held accountable to shareholders who have public responsibilities; SMFEs cannot. And if SMFEs simply undermine large operations and force socially reasonable operators out of the market then they may promote insecure and unsafe informal work and create 'poverty traps' rather than providing the beginnings of upward mobility.

In short, while SMFEs have the potential to be highly pro-poor, like larger enterprises there is no a priori reason or guarantee that SMFEs will reduce poverty. They are not inherently any more or less innovative, job creating, environmentally friendly or supportive of worker welfare than larger enterprises. The crucial determinant is the policy, institutional and market environment.

**Box 4. Decriminalising, and working with, chainsaw loggers.**

Proposed ways to gain some control over widespread illegal chainsaw logging in Guyana are illustrative of new thinking needed in many countries in Latin America, Africa and Southeast Asia where chainsaw logging is perceived to be out of control. Ideas revolve around harnessing chainsaw loggers' high levels of productivity and flexibility within small but no less rigorously monitored concessions. To derive more recovery from chainsaw ripping, boardmills rather than free hand ripping could be promoted. A culture of resawing could be initiated with chainsaws used as prime saws, cutting cants to be resawn at lumber dealers with band saws, thereby increasing both the productivity and the recovery of the chainsaws in the concessions. This would allow those who cannot afford the more expensive portable mills to still take part in the sector (Mendes and Macqueen, 2006). There are clearly challenges ahead in ensuring that decent work, not unsafe and unrewarding work, results and in harnessing global capital in this kind of transition.

**5. Points of leverage for commercial forestry to become more pro-poor**

Several trends in and around the forest sector, and motivations amongst key groups of stakeholders, can brighten the prospects of pro-poor commercial forestry. These trends and motivations are present to differing extents in different places – most can be actively shaped and developed.

**Trends** in the forest sector that are creating traction to remove some of the barriers to commercial forestry being pro-poor include:

- Increased local ownership/control of forest resources
- Growing demand for forest products

- Technical and market developments that permit the development of smaller-diameter and lower quality wood, with faster rotations
- Increasing scarcity, especially of large-diameter tropical hardwoods
- Increased demand for environmental services
- Conditions that favour intensification of forest management and farm-based production
- Opportunities for niche markets in a globalised world
- More democratic governance
- Increased attention to, and possibly a reduction in, corruption and illegality

**Motivation** for more pro-poor forestry can be identified and developed amongst several groups of stakeholders:

**Enterprises and investors** may seek to promote more pro-poor forestry when there are:

- *Public pressures to behave well* – intolerance of irresponsible corporate behaviour and demands to demonstrate social responsibility are growing in many countries, and in some markets calling for certification and fair trade
- *Imposed requirements* – such as government contractual requirements or investment conditions to service low-income communities
- *Land and resource access and security advantages* – access restrictions or ceilings on the timber sources and land that companies can themselves control may be avoided, and resource security and diversity of sources of supply increased, through partnerships with local land and resource owners
- *Cost advantages that communities or smallholders can provide* – through motivated labour, land and resource management, knowledge of local conditions, and efficient institutions
- *Local risks that communities or smallholders can help minimise or take on themselves* – such as tenurial and land-use conflict, the abuse of company property, violence against company employees, locally supported interference from local politicians, and price fluctuations that can be passed on to communities or smallholders

**Communities and smallholders** may develop forest enterprises or engage with them when there are:

- *Secure land tenure and tree rights* – or, conversely, a lack of legal or bureaucratic permissions to develop land and trees without help from enterprises
- *Potential for higher net returns from land and labour than alternatives would provide* – in terms of regular income and /or reduced market risk through assured sales or capital accumulation
- *Decreasing opportunities from the public sector* – declining subsidies, privatisation of plantations, fewer centrally planned interventions
- *Desirable technologies or services that only enterprises can provide* – e.g. capital intensive forestry technology, infrastructure, social services or political clout
- *Institutions capable of representing the interests of the community to the enterprise* – well developed grass-roots organisations, community orientated non-governmental organisations, accountable local governments
- *Markets to which the community has limited access* – international timber markets
- *Scientific knowledge that enterprises can provide* – e.g. characteristics of alternative tree species

**Governments** may seek to enable pro-poor commercial forestry when there are:

- *Macro-policies favouring a regulated market economy* – initiatives to reduce public debt, gain control over budget deficits, increase economic efficiency and improve aggregate welfare through the private sector, and reduce state power and widen ownership
- *Contradictions to be removed between government as regulator and manager* – many governments see advantages in separating regulatory and business functions in all sectors, leading them in some cases to remove the business function to the private sector, in others to separate state agencies.
- *Drives to address inequality and empower disadvantaged groups* - designed in the right way, policies on empowerment and use-agreements over government forest assets can benefit disadvantaged groups
- *Drives to increase profitability of the forest sector* – initiatives with enterprises can increase innovation and longer-term growth, engaging with communities and smallholders can help combat forest degradation and improve forest condition

## 6. Challenges ahead

Drawing from the above analysis the following key factors are amongst those needing to be addressed if commercial forestry is going to reduce poverty to a greater extent. Each is a challenge because big issues are involved and practical actions need to be identified and taken by different stakeholders.

### **Strengthen rights, capabilities and local decision-making**

- Support poor people's own decision-making power
- Secure poor people's forest rights
- Back up rights with the capability to claim them
- Cut the regulatory burden on poor people
- Back local control of enterprises.

### **Enable market opportunities to be seized by poor people**

- Remove the barriers to market entry
- Ensure that markets for environmental services benefit poor people
- Support associations and financing for local forest businesses
- Demand responsible forest enterprise and fair trade.

### **Policies and institutions**

- Improve access by the poor to real decision-making?.
- Establish cross-agency learning coordination.
- Simplify policies and laws, and implement and enforce them equitably?

- Support judicious subsidies, and remove unreasonable trade barriers.

## **Finance**

- Establish domestic and global investment mechanisms
- Develop credit unions and better risk assessments
- Build capacity for finance administration and deals between players.

## **Organisation and monitoring**

- Foster enterprise associations and support their specific needs.
- Develop extension networks of local activists.
- Install more equitable benefit sharing from large-scale commercial forestry
- Make landowners accountable for safe work activity on their land
- Identify the contribution of formal forest income to poverty reduction
- Gather information and track progress.

Commercial forestry needs to do much more for poverty reduction. There is no escaping the need for strong local democracy, fair enforcement of some simple rules, and astute provision of support to actively pro-poor enterprises and their associations if this potential is to be realised.

## References

- Anderson, J., Benjamin, C., Campbell, B. and Tiveau, D. 2006. Forests, poverty and equity in Africa: new perspectives on policy and practice. *International Forestry Review* Vol.8(1) 44-53
- Angelsen, A. and Wunder, S. 2003. Exploring the forest-poverty link: key concepts, issues and research implications. Occasional Paper Mo.40. Center for International Forestry Research, Bogor, Indonesia
- Antinori, C. and Bray, D.B. 2005. Community forest enterprises as entrepreneurial firms: economic and institutional perspectives from Mexico. *World Development* 33(9): 1529-1543
- Arce, J.J.C., Villalobos, R. and Louman, B. 2005. Poor farmers and fragmented forests in Central America. In: Sayer, J.A. and Maginnis, S. (eds) *Forests in landscapes: ecosystem approaches to sustainability*. Earthscan, London.
- Arnold, J.E.M. 2001. *Forests and people: 25 years of community forestry*. Food and Agriculture Organisation of the United Nations, Rome.
- Arnold, J.E.M. and Bird, P. 1999. *Forests and the poverty-environment nexus*. Prepared for the UNDP/EC Expert Workshop on poverty and the Environment, January. Brussels, Belgium
- Auzel, R., Nguenang, G.M., Feteke, R. and Delving, W. 2001. Small-scale logging in community forests in Cameroon: towards ecologically more sustainable and socially more acceptable compromises. Network Paper 25. RDFN, ODI, London, UK
- Barr, C. 1998. Bob Hasan, the rise of Apkindo and the shifting dynamics of control in Indonesia's forestry sector. *Indonesia* 65:1-36
- Bass, S. and Hearne, R.R. 1997. *Private sector forestry: a review of instruments for ensuring sustainability*. Forestry and land use series no.11. IIED, London, UK
- Bass, S., Thornber, K., Markopoulos, M., Roberts, S., and Grieg-Gran, M. 2001. Certification's impacts on forests, stakeholders and supply chains. Instruments for Sustainable Private Sector Forestry series. International Institute for Environment and Development, London.
- Bass, S., Reid, H., Satterthwaite, D. and Steele, P. (eds). 2005. *Reducing poverty and sustaining the environment: the politics of local engagement*. Earthscan, London
- Belcher, B.M. 2005. Forest product markets, forests and poverty reduction. *International Forestry Review* 7 (2): 82-89.
- Biggs, T. 2002. *Is small beautiful and worthy of subsidy?* International Finance Corporation, Washington, USA.

Blombäk P and Poschen P, 2003. Decent work in forestry? Enhancing forestry work and forest-based livelihoods. Paper to the XII World Forestry Congress, Quebec, Canada, 2003.

Bodeker, G. 2005. Medicinal; plant biodiversity and local healthcare – sustainable use and livelihood development: In: Proceedings of the 17th Commonwealth Forestry Conference. Colombo, Sri Lanka 28 February – 5 March 2005. Forestry Commission, Edinburgh, UK.

Bray, D.B and Tardanico, R. 2005. Forest incomes and common property forest management: towards poverty alleviation and economic development. Paper presented at the human Dimensions of Global Climate Change Conference. October. Bonn, Germany

Brown, D., Schreckenber, K., Shepherd, G. and Wells, A. 2002. Forestry as an entry point for governance reform. ODI Forestry Briefing 1. Overseas Development Institute, London.

Brunner, J., Seymour, F., Badenoch, N. and Ratner, B. 1999. Forest problems and law enforcement in Southeast Asia: the role of local communities. Resources Policy Brief. World Resources Institute, Washington DC.

Byron, N. and Arnold, M. 1999. What futures for people of the tropical forests? World Development 27: 789-805.

Canby, K. and Raditz, C. 2005 Opportunities and constraints to investment in natural tropical forest industries. Forest Trends, Washington, USA

Carle, J. et al. 2003. The need for improved forest plantation data. Paper to World Forestry Congress. FAO. [www.fao.org/forestry/site/5387/en](http://www.fao.org/forestry/site/5387/en)

Chamberlain, D., Essop, H., Hougaard, C., Malherbe, S. and Walker, R. 2005. The contribution, costs and development opportunities of the forestry, timber, pulp and paper industries in South Africa. Genesis Analytics (Pty) Ltd, Johannesburg, South Africa

Clarke and Isaacs, 2005. Forestry contractors in South Africa – what role in reducing poverty? PLAAS and IIED

Colchester, M. with Boscolo, M., Contreras-Hermosilla, A., Del Gatto, F., Dempsey, J., Lescuyer, G., Obidzinski, K., Pommier, D., Richards, M., Sembiring, S.N., Tacconi, L., Vargas Rios, M.T., and Wells, A. 2006. Justice in the forest: Rural livelihoods and forest law enforcement. Center for International Forestry Research, Bogor, Indonesia. 98p.

Collier, P., Elliott, P., Hegre, H, Hoeffler, A., Reynal-Querol, M. and Sambanis, N. 2003. Breaking the conflict trap: civil war and development policy. World Bank, Washington, D.C., USA

Cossalter, C. and Pye-Smith, C. 2003. Fast-wood forestry – myths and realities. CIFOR. [www.cifor.cgiar.org](http://www.cifor.cgiar.org)

- Counsell, S. 2006. *Logged To Death: The Impacts Of The Tropical Timber Industry On Human Health*. Rainforest Foundation, London
- Danso, E. and Opoku, K. 2005. *Impacts and legality of forest utilisation permits in Ghana*. Civic Response, Accra and International Institute for Environment and Development, London. 42 pp.
- EIA/Telepak. 2002. *Timber trafficking: illegal logging in Indonesia, South East Asia, and international consumption of illegally sourced timber*. Environmental Investigation Agency, London
- Emerton, L. 2005. *Making the Economic Links Between Biodiversity and Poverty Reduction: The Case of Lao PDR*. IUCN - The World Conservation Union, Ecosystems and Livelihoods Group Asia, Colombo.
- FAO. 2005. *State of the World's Forests 2005*. FAO, Rome, Italy.
- Franzel, S. and Scherr, S.J. 2002. *Trees on the farm: assessing adoption potential of agroforestry practices in Africa*. Commonwealth Agricultural Bureau International, Wallingford, UK
- Garforth, M. and Mayers, J. 2005. *Plantations, privatisation, poverty and power*. Earthscan, London
- Gretzinger, S. 2006. *Financial mechanisms for channelling private and public investment funds to responsible natural forest management and related manufacturers in Latin America*. Presentation to the International Tropical Forest Investment Forum, Cancun, Mexico 26-27 April 2006. International Tropical Timber Organization, Yokohama, Japan
- Higman, S., Mayers, J., Bass, S., Judd, N. and Nussbaum, R. 2005. *The Sustainable Forestry Handbook*. Second edition. Earthscan, London, UK
- Hudson, J. 2005. *Forestry's contribution to poverty reduction and trends in development assistance*. In: *Proceedings of the 17th Commonwealth Forestry Conference*. Colombo, Sri Lanka 28 February – 5 March 2005. Forestry Commission, Edinburgh, UK.
- IIED, 2006. *Towards a sustainable paper cycle*. For the World Business Council for Sustainable development by the International Institute for Environment and Development, London, UK
- ITTO, 2006. *Status of Tropical Forest Management 2005*. International Tropical Timber Organization, Yokohama, Japan
- Jenkins, M.B. and Smith, E.T. 1999. *The business of sustainable forestry: strategies for an industry in transition*. Island press, Washington, D.C., USA
- Kaimowitz, K. 2003. *Not by Bread Alone ... Forests and Rural Livelihoods in Sub-Saharan Africa*. In: Oksanen, T, Pajari, B., and Tuomasjukka, T. (eds.) *Forests in Poverty Reduction Strategies: Capturing the Potential*. EFI Proceedings No. 47. pp 45-63.

- Kanowski, P. 2005. Intensively managed planted forests. The Forests Dialogue Background Paper. May 2005
- Macqueen, D.J. 2001. Evidence-based policies for good governance – The applicability of growth and yield modelling to the forest sector in Guyana. Project report. International Institute for Environment and Development, London, UK. 118pp.
- Macqueen, D.J. 2005. Time and temperance: how perceptions about time shape forest ethics and practice. *International Forestry Review* Vol.7(3) 250-257
- Macqueen, D., Barrance, A., and Holt, G. 2001. Common problems of forest-dependent poor and priority research and development themes to address them. *International Forestry Review* 3: 105-120.
- Macqueen, D. J., M. Grieg-Gran, E. Lima, J. MacGregor, F. Merry, N. Scotland, R. Smeraldi and C. E. F. Young. 2004. Exportando sem crises: A indústria de madeira tropical brasileira e os mercados internacionais. Small and Medium Enterprise Forest Enterprises Series No 1. International Institute for Environment and Development, London, UK.
- Macqueen, D.J. and Mayers, J. 2006 forthcoming. Forestry's messy middle: a review of sustainability issues for small and medium forest enterprise. International Institute for Environment and Development, London.
- May, P.H., Da Vinha, V.G. and Macqueen, D.J. 2003. Small and medium forest enterprise in Brazil. Grupo Economia do Meio Ambiente e Desenvolvimento Sustentável (GEMA) and International Institute for Environment and Development (IIED), London, UK.
- Mayers, J. 2005. Forestry Partnerships in Kenya: Review of issues for business-farmer and government-community-business arrangements for wood production. Discussion Paper and Outline Work Plan. IIED for the Forestry Department, Kenya, and World Bank/PROFOR, Washington, D.C. USA
- Mayers, J. and Vermeulen, S. 2002. Company-community forestry partnerships: from raw deals to mutual gains. Instruments for Sustainable Private Sector Forestry series. International Institute for Environment and Development, London.
- Mayers, J. and Vermeulen, S. 2002. Power from the trees: how good forest governance can help reduce poverty. WSSD Opinion series. IIED, London
- Mayers, J., Bila, A., Khaukha, S., Opoku, K. and Simwela, W. 2005. Forest governance and social justice: practical tactics from a learning group approach in Africa. Proceedings of the 17th Commonwealth Forestry Conference 29 February to 5 March 2005, Colombo, Sri Lanka. Forestry Commission UK
- Mendes, A. and Macqueen, D. 2006. Raising forest revenues and employment: unlocking the potential of Small and Medium Forest Enterprises in Guyana. 2006. Small and medium forestry enterprises series No.12. International Institute for Environment and Development, London.

Mitlin, D. and Satterthwaite, D. (eds) 2004. Empowering Squatter Citizen: Local government, Civil Society and Urban poverty Reduction. Earthscan, London

Mogaka, H. 2006. Desertification and Livelihoods in Africa: Integrating Drylands Ecosystem Services into National Economic Planning, Kenya. IUCN - The World Conservation Union Eastern Africa Regional Office, Nairobi.

Molnar, A., Scherr, S., and Khare, A. 2004. Who Conserves The World's Forests? Community-Driven Strategies to Protect Forests and Protect Rights. Forest Trends & Ecoagriculture Partners. Washington, D.C. pp79.

Molnar, A., Khare, A., White, A., Liddle, M., Bracer, C., Bull, J. 2006 forthcoming. Community-based Forest Enterprises in Tropical Forest Countries: status and potential. Forest Trends and Rights and Resources Initiative. Unpublished

Monela, G. C., S.A.O. Chamshama, R. Mwaipopo, and D. M. Gamassa. 2005. A Study on the Social, Economic and Environmental Impacts of Forest Landscape Restoration in Shinyanga Region, Tanzania. Forestry and Beekeeping Division of the Ministry of Natural Resources and Tourism, United Republic of Tanzania, and IUCN - The World Conservation Union Eastern Africa Regional Office, Dar-es-Salaam, Tanzania.

Morales, E. 2005. Early experience of total divestment: Chile. In: Garforth and Mayers, 2005. op cit.

Murdiyarso, D. and Herawati, H. 2005. Carbon forestry: who will benefit? Proceedings of workshop on carbon sequestration and sustainable livelihoods. CIFOR, Bogor, Indonesia

Pearce, F. 2005. Investing in environmental wealth for poverty reduction. Poverty-Environment Partnership (UNDP, UNEP, IIED, IUCN, WRI). United Nations Development Programme, New York

Poschen, P. 2001. Social and labour dimensions of the forestry and wood industries on the move. Report prepared for the Tripartite Meeting on the Social and Labour Dimensions of the Forestry and Wood Industries on the Move. International Labour Organization (ILO), Geneva.

Ross, M. 2001. Timber booms and institutional breakdown in Southeast Asia. Cambridge University Press, Cambridge, UK

Saigal, S., Arora, H. and Rizvi, S.S. 2002. The new foresters: the role of private enterprise in the Indian forest sector. Instruments for Sustainable Private Sector Forestry series. Ecotech Services, New Delhi, and International Institute for Environment and Development, London.

Scherr, S., White, A. and Kaimowitz, D. 2004. A new agenda for forest conservation and poverty reduction: Making forest markets work for low-income producers. Forest Trends, Washington DC, and Center for International Forestry Research, Bogor.

Shackleton, S., Campbell, B., Wollenberg, E. and Edmunds, D. 2002. Devolution and community-based natural resource management: creating space for local people to participate and benefit? Natural Resources Perspectives series number 76. Overseas Development Institute, London.

Steele, P. and Kragt, M. 2006. Growth and poverty reduction: what is the role of forests? Prepared for Environet and the Poverty-Environment Partnership. Draft February 2006

Street, William. 2006 Personal communication

Sun, C. and Chen, X. (2003) Small and medium forestry enterprises in China: an initial review of sustainability and livelihood issues. Research Center of Ecological and Environmental Economics (RCEEE) and International Institute for Environment and Development (IIED), London, UK.

Sunderlin, W., Angelsen, A. and Wunder, S. 2003. Forests and poverty alleviation. In: FAO, State of the world's forests 2003. pp 61-73. Food and Agriculture Organisation of the United Nations, Rome, Italy

TFD. 2005a. Practical actions to combat illegal logging: summary of a multi-stakeholder dialogue on best practice for business and civil society. 7-10 March 2005, Hong Kong. The Forests Dialogue, New Haven, USA

TFD. 2005b. TFD's ENA FLEG Dialogues (Europe and North Asia Forest Law Enforcement and Governance). 2-3 November and 22-25 November, St Petersburg. The Forests Dialogue, New Haven, USA

TFD. 2006. Dialogue on intensively managed planted forests in China: co-chairs summary report. 3-6 April 2006, Zhanjiang and Beihai. The Forests Dialogue, New Haven, USA

TFT and CIB. 2006. First forest in the Congo to achieve highest international standard of good management. Tropical Forest Trust and Congolaise Industrielle des Bois, London, UK

Vedeld, P., Angelsen, A., Sjaastad, E. and Kobugage Berg, G. 2004. Counting on the Environment: Forest Incomes for the Rural Poor. Environmental Economics Series No. 98, World Bank, Washington, D.C., USA

WBCSD. 2004. Aracruz Cellulose: The Forestry Partners Program. World Business Council for Sustainable Development, Geneva, Switzerland

White, A. and Martin, A. 2002. Who Owns the World's Forests? Forest Tenure and Public Forests in Transition. Forest Trends. Center for International Law. Washington D.C. pp 32.

White, A., Sun, X., Canby, K., Xu, J., Barr, C., Katsigris, E., Bull, G., Cossalter, C. and Nilsson, S. 2006. China and the global market for forest products: transforming trade to benefit forests and livelihoods. Forest Trends, Washington, UK

Wollenberg, E., Edmunds, D. and Anderson, J. (eds). 2001. Accommodating multiple interests in local forest management. Special issue of International Journal of Agricultural Resources, Governance and Ecology, Vol.1, Nos. 3/4.

World Bank. 2001. A Revised Forest Strategy for the World Bank Group. Draft 30 July 2001, World Bank, Washington DC.

WRI. 2005. World Resources 2005. The wealth of the poor: managing ecosystems to fight poverty. World Resources Institute, Washington D.C., USA

Wunder, S. 2001. Poverty alleviation and tropical forests – what scope for synergies? World Development 29: 1817-1834.

Xu, J., Katsigris, E. and White, R (eds) 2002. Implementing the Natural Forest Protection Program and Sloping Land Conversion Program: lessons and policy recommendations. China Council for International Cooperation on Environment and Development, Beijing, China